

The Orchadian

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Official Journal of the Australasian Native Orchid Society Inc.



Sarcochilus dilatatus 'Lily' FCC-ACC/ANOS 2017 (NSW)

Photo: Bill Dobson



The Orchadian

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Dedicated to the study and conservation of Australasian native orchids

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Please include your contact information for communication and publication.

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A first class opportunity to see some of the best speciosums in flower as well as a wide range of other Australasian orchids and hybrids. Be sure to note in your diary and plan to be there. All are welcome to exhibit and judging will be by an all ANOS panel. Monetary prizes and trophies will be awarded in a range of classes including species, hybrids and terrestrials.

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Dates: Sat 2nd Sept 10am to 4pm [Closed for judging between 11am & 12 noon this day]
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There are two competing interpretations of earth's evolutionary history, contingency or chance events, and convergence (repeatable events) not dominated by chance. Both may have operated in the past and they may also be active now. The palaeontologist Stephen J. Gould argued famously for contingency, saying that "replaying the tape of life" would lead to dramatically different results. The final result, what we see in orchids and other organisms including humans, depends or is contingent on everything that came before, and any change in any one or more of the many steps of the sequence of evolution could alter the final result. An issue of *The Orchadian* develops in a similar manner. From the assembly of contributions, itself a largely chance event, the steps to the final issue include changes by reviewers and authors, postponement to a future issue, sometimes withdrawal of an article by an author or an additional article inserted at the final stage. At this time the total page number is set and cannot be exceeded. Replaying the sequence of the production could lead to an entirely different content.

Contingency is relevant to many articles in this issue. If David Butler had driven on without stopping at a nursery and buying *D. Lorikeet*, or if a seed capsule did not form or produce viable seed, there would be no *D. Class*, at least as we know them today with *D. Lorikeet* combined with *D. x delicatum* 'Tracy'. Ros Capell's thoughtful and philosophical discussion on conservation in Australia is based on the past chance (now a certainty) that the country would be invaded by people who would within 200 years destroy much of the native flora, and at this stage we face major difficulties in preserving the remainder. Would the French or other potential colonisers active at the same time in the late 18thC have done the same? Is it possible to steer the recent course of events away from a convergence to extinction?

The evolution of *Cryptostylis*, *Prasophyllum* and *Peristeranthus* genera (articles by Graham Corbin, Peter Tonelli and David James in this issue) involved a chance association with mycorrhizal fungi and insect pollinators; and steps in developing a morphology that permits

the plants to interact with animals in adapting to further changes. Without conservation of the entire ecosystem in which all these organisms can exist over the time frame of evolution, there will be no chance of a long term future. Gerry Walsh observes the changes in distribution of two *Bulbophyllum* species over a very short time, which further illustrates the role of chance in the dynamic interplay between competing plants, with the orchids on the losing side. If environmental change had been slightly different, these bulbophyllums may have been victorious and outcompeted the lichens and ferns, expanding their numbers to occupy more local habitat.

Without Hugo Flecker, there would have been no *North Queensland Naturalist*, and perhaps a delay in the understanding of the history and medical management of poisonous plants and animals in Queensland. In the process of contingency, everyone contributes to the future to variable degrees in what they choose to do, for better or worse.

S.J. Gould's *Wonderful Life. The Burgess Shale and the Nature of History* is a fascinating account of the Cambrian explosion (450 million years ago) of life and the slow efforts of scientists to understand and interpret it.

I note with personal sadness that since the March issue, Harry Klose passed away suddenly in Wauchope. He was a significant and under recognised innovator of breeding *Dendrobium kingianum* and also *D. speciosum*. Some of his work was documented in the March 2017 issue of *The Orchadian*. Fortunately, he was able to read the issue and expressed his satisfaction and pleasure in discussions with me.

Addenda

In *The Orchadian* 18(11) March 2017 issue, the date of the reference to H. Klose The Red Revolution should read 1989, and Pridgeon et al 2014 refers to *Genera Orchidacearum* Vol. 6, a consensus view of orchid genera.

Peter Adams

Welcome to our new subscribers. I am pleased to announce we have a steady stream of new members who are Australian orchid enthusiasts and are enjoying the range of articles provided by the journal. The first free e-newsletter has been distributed, and there has been positive feedback. There is a request to subscribe on the front page of the website and non-ANOS members are welcome. We aim to provide communication about group activities, circulate news, and promote events that may be of interest to orchid growers. Groups are welcome to send any short items to the web team through the online link, and they can be advertised online and/or via our newsletter. We also have a Facebook page, with the link on the website, and we encourage you to participate in this form of communication with fellow growers.

Negotiations are continuing around the next triennial ANOS Conference, which is planned for 2019. Council is doing some lateral thinking about the future of conferences, which require a lot of people power and expense. How they are run and organised needs serious review. If groups or members have novel ideas to suggest to Council we would welcome your input.

The show season is rapidly approaching for the

warmer states, while Victoria battens down for the ravages of winter. For southerners, it is a good time to travel, while orchids are relatively dormant and do not require as much watering and attention. For the more northerly groups, ANOS Council wishes you success and enjoyment in your winter shows. The 2016 winners of the Ira Butler Trophy are presented in this issue. The retiring Chairperson Alan Stephenson reminds readers that good photography is critical for the best presentation of plants to the judges. If you are not confident, ask someone else to help you, as most of the IBT committee will have only the photographs to judge. If you look closely at the successful entries, each one is a specimen sized plant which is well flowered, cultured and photographed. Congratulations to all the winners.

Bill and Lorraine Dobson have received an FCC-ACC/ANOS 2017 for their beautiful plant of *Sarcocochilus dilatatus* which is featured on the covers. A notice of our August Annual General Meeting is below.

I look forward to speaking with lots of members at shows and events this year.

Sheryl Lawson

A.N.O.S. (Inc.)

Notice of Annual General Meeting

The AGM will be held on Saturday the 2nd September 2017

To commence at 3.00pm.

Venue: Kempsey Heights Bowling Club.

ALL positions on Council will be declared vacant and
Nomination Forms will be made available on the ANOS website
at www.anos.org.au

Only fully financial Members can be nominated, and vote.

Reference to Item 18 of the A.N.O.S. (Inc.) Constitution and Item 19 of the
Constitution are drawn to your attention.

Nominations will be accepted up to 7 days prior to the A.G.M.

Signed: R.A. Winch—Secretary

The Genus *Cryptostylis* R. Br. (Tongue Orchid)

Text by Graham Corbin
graham.n.corbin@gmail.com

The genus *Cryptostylis* was described by Robert Brown in 1810 (*Prodr. Fl. Nov. Holland.* 317). The name is derived from the Greek *kryptos* meaning hidden and *stylos* meaning pillar or column, referring to the short column which is partially hidden by the basal parts of the labellum. The type species is *Cryptostylis erecta*, an endemic species which grows along the eastern coast of mainland Australia.

The genus consists of 23 geophytic herbs which occur from Asia (Sri Lanka, India, Burma, Thailand, Cambodia, Vietnam, Philippines, Indonesia) through New Guinea, Australia and New Zealand, as well as the Solomon Islands, Vanuatu and New Caledonia. Of the 23 species, 17 occur in the Australasian area as defined for ANOS, and five occur in Australia. Of the Australian group, four are endemic – *C. erecta* R.Br., *C. hunteriana* Nicholls, *C. ovata* R.Br. (Western Australia only) and *C. leptochila* F.Muell. ex Benth., with the non-endemic species *C. subulata* (Labill.) Rchb.f. extending into the north island of New Zealand.

Cryptostylis have short subterranean stems with thick fleshy roots. Members of this genus do not have tubers. Leaves, when present, are one to several per shoot, erect with a distinct stalk and quite leathery. New leaves are grown every year at flowering time and the older leaves may last several years if conditions are good, but in dry conditions plants may drop all their leaves. One species, *C. hunteriana*, is a saprophyte and has no leaves. As the flowers conform to the genus, *C. hunteriana* is considered to be a member of this group and the inclusion has stood the test of time.

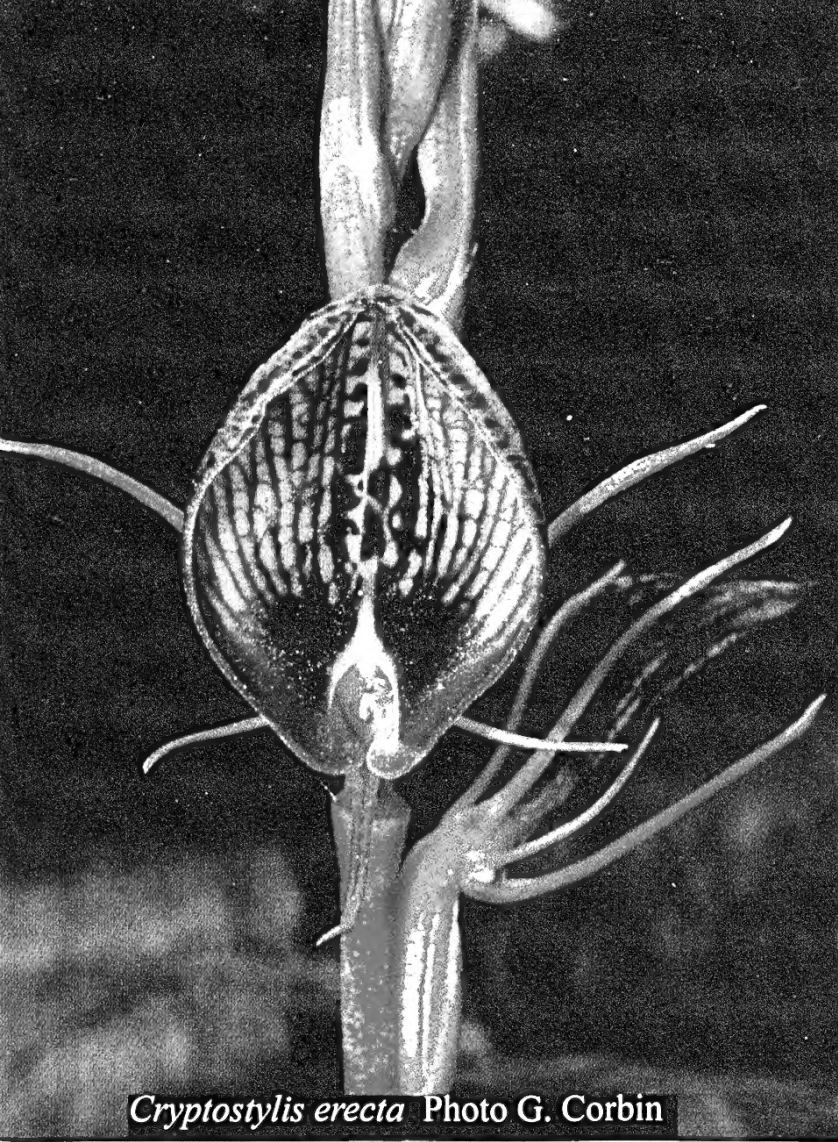
The unbranched inflorescence emerges from a stem node and has several flowers. The flowers are best known because of their method of pollination, first described by Edith Coleman (1874-1951) in *Victorian Naturalist* (Coleman 1927, 1928, 1929, 1930). Edith noticed that male wasps of *Lissopimpla excelsa* (family Ichneumonidae, orchid dupe wasp) were attracted to the flowers of four of the five Australian species of *Cryptostylis*. The male wasps are parasites normally hunting caterpillars and other larvae. They aren't attracted to the orchid flowers to lay eggs as they are male.

They aren't attracted to the flower for food as the orchid flower produces no nectar or other edible material for wasps. Edith also noticed that unlike most insects seeking nectar from a flower entering the flowers headfirst, the male wasps positioned themselves with their head furthest from the column and entered the depression containing the column, abdomen (tail) first with their head remaining far from the column. These are not the actions of an insect seeking food. As the male wasp has its abdomen against the column, it removes the pollen from the *Cryptostylis* flower with the pollinia stuck near the base of its abdomen, not behind the head as is typical of pollinators seeking nectar and entering the flower head first.

Everything about male wasps visiting the *Cryptostylis* flower defied logic as it made no sense for an insect seeking nectar, the usual reason for an insect to visit a flower. Through careful observation and a bit of lateral thinking, Edith determined that the males were pseudocopulating with the orchid flower as if it was a female wasp. Edith noticed that the male wasps grasped the sides of the labellum near the centre with their front two pairs of legs, curved their abdomen into a sickle shape and grasped the labellum near the column with claspers at the tip of the abdomen, just as they would when mating with females. The male wasp remained in the flower for several minutes performing rhythmical abdominal movements and ejecting seminal fluid. Edith examined the liquid under a microscope to detect spermatozoa, confirming that the wasps were indeed pseudocopulating.

Through yet more close observation and a series of experiments involving putting the *Cryptostylis* flowers in sealed and open glass jars both open to sight of the male wasps and wrapped in cloth so not to be visible to the male wasp, Edith showed that the wasps were attracted to the orchid flowers from a great distance, not by sight but probably a chemical which she could not detect.

This was not the first time that orchids attracting insects had been documented. Charles Darwin had been puzzled by the frequent 'attacks' made upon orchids by their pollinators. 'What this . . . means



Cryptostylis erecta Photo G. Corbin



Cryptostylis hunteriana Photo G. Corbin



Cryptostylis leptochila Photo G. Corbin



Cryptostylis subulata Photo G. Corbin

I cannot conjecture', he wrote in his publication *The Various Contrivances by which British and Foreign Orchids are Fertilised by Insects* in 1862. Edith was the first to understand the actions of the insect pollinators as being sexual and her papers caused quite a stir when first published, a major achievement for an amateur naturalist. It was not until 2004 that Florian Schiestl and his team at the Australian National University using gas chromatography and electroantennal detection proved conclusively that *Cryptostylis* were producing a scent mimicking the sex pheromone produced by the female *Lissopimpla excelsa* wasp, attracting the male wasps.

Schiestl's work proved Edith's theory correct and the orchids produce a sex pheromone to attract the male wasps, 75 years after her experiments deduced that the pheromones must exist. Edith continued to experiment on the Australian members of the genus *Cryptostylis* studying their pollination by pseudocopulation. She showed that four of the five Australian species were pollinated by the same species of wasp, *Lissopimpla excelsa*. William Nicholls (1938) showed that the much rarer species *C. hunteriana* was also pollinated by the same wasp. It was later shown that all five species produce the same pheromone.

Even though the Australian *Cryptostylis* have very different looking flowers they produce the same pheromone and the labellum must be visually similar enough to a female wasp that the male wasp can correctly orientate itself to collect and deposit pollinia. Edith observed that the wasps almost always align correctly before landing on a *Cryptostylis* flower. This means that its head is uppermost for all species except for *C. subulata* where it needs to reverse itself with its head lowermost. Graham (1983) observed that 35 out of 40 wasps landing on *C. subulata* oriented themselves correctly before landing, with the remainder quickly reorienting after landing. This demonstrates that the *Cryptostylis* labellum provides the wasp with enough visual clues to correctly orient himself on approach.

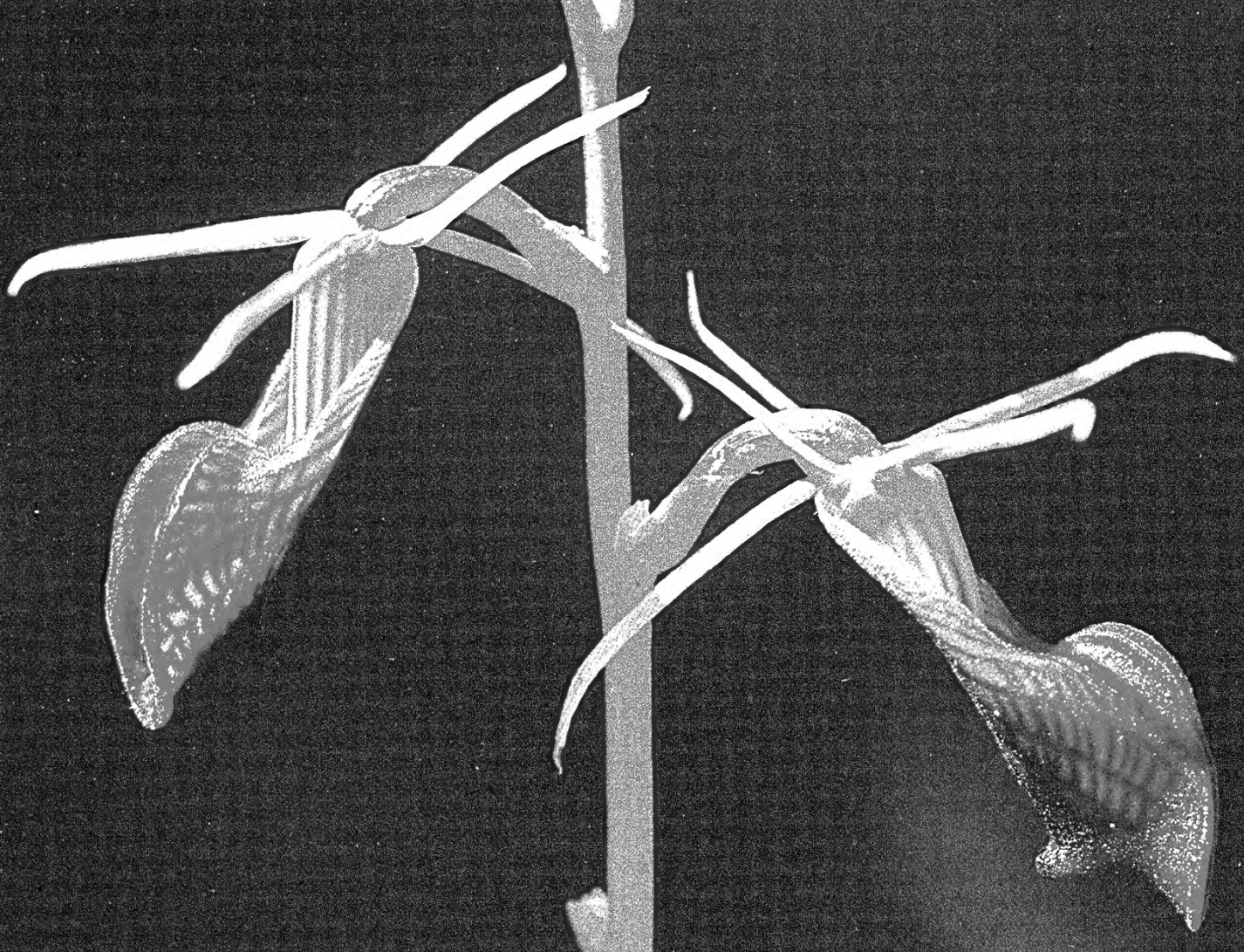
Edith's experiments showed that the wasps are attracted to all Australian *Cryptostylis* species and demonstrated that they move between flowers of different *Cryptostylis* species when flowering in close proximity. As four of the five species of

Australian *Cryptostylis* have overlapping ranges and flowering periods, pollen may be expected to be regularly transferred between different species of *Cryptostylis* where they flower in close proximity. Despite this, there are no known natural hybrids of *Cryptostylis*. Stoutamire (1975) and David Jones in 1988 demonstrated that while *Cryptostylis* species successfully produce mature embryos when using pollen from the same plant or from other plants of the same species, hybrids between different *Cryptostylis* species cannot be created. The exact mechanism preventing hybridisation remains a mystery.

The type species, *Cryptostylis erecta*, occurs along the eastern coast of Australia from Kroombit Tops in central eastern Queensland south to eastern Victoria. It grows in a wide range of habitats from open forest to rainforest and from coastal heath to mountain heath. It most commonly grows in moist to semi-swampy areas but also in extremely dry habitats. It is usually locally common with loose clumps of plants throughout an area. This species can generally be identified when not in flower by its upright green leaves to 18 cm long with purplish colour beneath the leaf and a petiole (stalk) up to 10 cm long. *Cryptostylis erecta* has up to a dozen flowers about 3 cm tall carried on a 45 cm stem. It usually flowers in December to February but can flower sporadically at any time of the year. It is easily identified by the bonnet like upright flower which cannot be confused with any other species.

The other four Australian *Cryptostylis* species are similar in many regards. All have their peak flowering in December to February, and *C. hunteriana* has a second flowering period from June to August. All have large upright green leaves with a purplish underside and long petiole except for *C. subulata*, which has a totally green leaf, and *C. hunteriana* which has no leaves. They all have a flower stem 40–80 cm tall with around 12 flowers which are 2–3 cm tall, although *C. subulata* can have up to 20 flowers. All grow in a wide variety of habitats and show preference for moist to swampy areas.

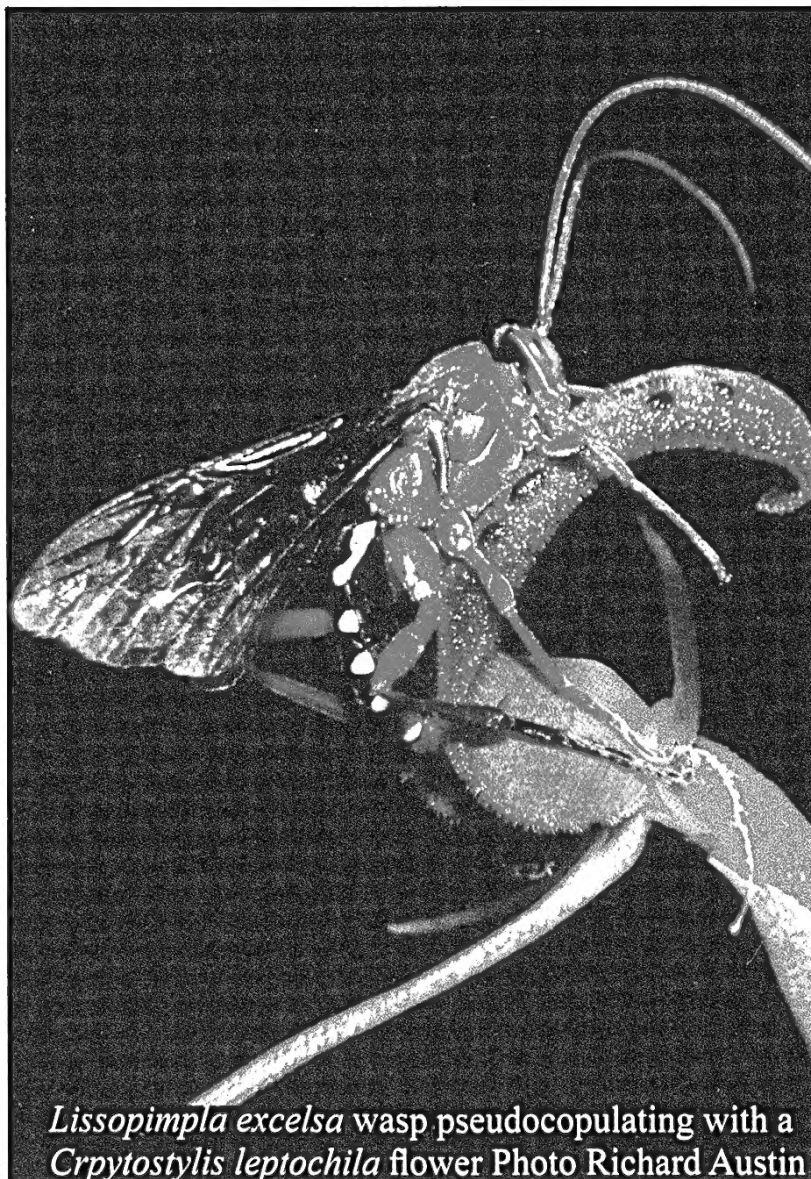
Cryptostylis subulata and *C. ovata* are closely related species. *Cryptostylis subulata* grows from Ingham in north Queensland down the east coast through Victoria, South Australia, Tasmania and to the northern extreme of New Zealand. *Cryptostylis*



Cryptostylis ovata Photo Andrew Brown



Cryptostylis erecta with *Lissopimpla excelsa*
wasp pollinator Photo Neil Anderton



Lissopimpla excelsa wasp pseudocopulating with a
Cryptostylis leptochila flower Photo Richard Austin

ovata is restricted to southern Western Australia from Perth east to Albany. Both have flowers with their column uppermost and unlike most flowering plants, the flower faces inwards towards the flower stem and not outwards. They are pollinated by the male *Lissopimpla excelsa* wasp with its head lowermost, unlike the other three Australian species where its head is uppermost. The two species can be easily separated by the much wider leaf of *C. ovata* (8 cm) in contrast to the 3 cm wide leaf of *C. subulata*, and the red netting pattern on the *C. ovata* labellum rather than a solid red colour in *C. subulata*.

Cryptostylis leptochila and *C. hunteriana* have similar flowers, with flower stems to around 40 cm tall with up to 10–12 flowers of 2 cm tall for *C. leptochila* or 3 cm tall for *C. hunteriana*. *Cryptostylis leptochila* occurs from Stanthorpe in southern Queensland down the eastern coast to Victoria and Tasmania on Flinders Island, whereas *C. hunteriana* grows from Tin Can Bay in central Queensland down the eastern coast to eastern Victoria. The flowers can be readily distinguished by the abrupt labellum bend and spotting of *C. leptochila* and the much longer and more prominent glandular hairs on the labellum of *C. hunteriana*. The other obvious difference is the lack of leaves of the saprophytic *C. hunteriana* species.

Although members of *Cryptostylis* are rarely seen in cultivation, the Australian species are amenable to cultivation with the exception of *C. hunteriana*. They can be grown in a simple soil mix with added leaf mould which is kept relatively moist all year round. They are slow growers and reproduce vegetatively extremely slowly. They resent repotting so should be grown in largish pots to avoid frequent repotting. Probably the most difficult part of growing this genus is locating plants for purchase. They are benched at ANOS Victoria and some other meetings most years.

Cryptostylis is indeed a very special group of orchids with an amazing pollination strategy. Thanks to the work of Edith Coleman, this genus will be forever remembered as the first orchid genus to be recognised as being pollinated by pseudocopulation.

Editor's Note:

A biography of the prominent English-born

naturalist Edith Coleman written by Danielle Clode will be published by Picador shortly. Edith published prolifically in a number of periodicals and newspapers and was the first woman to be awarded the Australian Natural History Medallion.

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Stoutamire WP 1975 Pseudocopulation in Australian terrestrial orchids. *Am. Orch. Soc. Bull.* 44:226-233.

Further Internet Resources

Clode D, Double S 2015 *The deceptive sex lives of orchids*

<http://www.abc.net.au/radionational/programs/ockhamsrazor/edith-coleman-pseudocopulation-danielle-clode/6938808>

Peakall R *Pollination by Sexual Deception in Australian Terrestrial Orchids*

http://biology-assets.anu.edu.au/hosted_sites/orchid_pollination/

Australian Dictionary of Biography

<http://adb.anu.edu.au/biography/coleman-edith-9784>

Graham Corbin is President of ANOS Kabi group and has a keen interest in terrestrial orchids.

***Dendrobium* Class – An Enduring Favourite**

David Butler
david.greenvista@internode.on.net

There are several reasons for the wide appeal enjoyed by *Dendrobium* Class, a hybrid first created in 1993, remade at least four times since, and still just as popular as when it first flowered twenty years ago. The story starts on a Sunday drive when I came across an orchid nursery where I purchased three small Wal Upton seedlings. These were *D.* (Peewee x Ellen) now registered as *D. Lorikeet*, and I remember buying them just so I wouldn't go home empty-handed, a situation every orchid enthusiast will understand. Thus *D. Lorikeet*, the pod parent of *D. Class*, began life in my care and down the track was mated with, of all things, a white *D. × delicatum*. This turned out to be an inspired idea and the same *D. × delicatum* was used each time the hybrid was remade. As well as being a top show orchid *D. Class* has proved to be a worthwhile parent, its progeny, such as *D. Touch of Class*, being of award quality and keenly sought after.

The Pod Parent

When it first flowered *D. Lorikeet* carried only a few rather starry flowers on somewhat weak racemes, probably due to it being 50% *D. tetragonum*. But the colour! At a time when hot/cold breeding was in its infancy these flowers were deep solid purple with an attractive pale centre and a neat labellum, and as a bonus the plants were seldom out of flower. Of the three seedlings purchased two were given the cultivar names 'Mel' and 'Goliath', the latter being shared with Bernie Fletcher for use in his hybridising program.

Besides *D. Class*, these two *Lorikeets* have also produced:

D. Ellen Surprise (*D. Lorikeet* x *D. Ellen*)

D. Crooky (*D. Lorikeet* x *D. speciosum*)

D. Intense (*D. Lorikeet* x *D. Zip*)

D. Elegant Coral (*D. Lorikeet* x *D. Hilda Poxon*)

D. Nha-Trang (*D. Lorikeet* x *D. Aussie Victory*)

D. Shukri Star (*D. Lorikeet* x *D. Star of Gold*)

D. Gelati (*D. Lorikeet* x *D. Desert Rose*).

There are also several unnamed hybrids:

D. Lorikeet x *D. falcorostrum*

D. Lorikeet x *D. Amber Banks*

D. Lorikeet x *D. Red River*

D. Lorikeet x *D. Yondi Tina*

D. Lorikeet x *D. Sunglow*

D. Lorikeet x *D. Jazz*

There are other crosses such as *D. Lorikeet* x *D. Avril's Gold* where there were only a few seedlings.

The offspring of *D. Lorikeet* usually feature, in varying degrees, its purple colour and pale centre, with the flowers remaining a good size even when the other parent is strongly influenced by *D. kingianum*, as in the case of *D. Class*.

The Pollen Parent

Dendrobium × delicatum 'Tracy', which has a smallish white flower, may seem an odd choice to use with the purple *D. Lorikeet*, but the resultant cross became *D. Class* and has truly lived up to its name. This plant is a robust grower and carries many tall upright racemes of pristine flowers. Bernie Fletcher obtained it from a family relation living near Wauchope who said it was bred by W. and J. Cannons and possibly raised using colchicine. Whatever its beginnings 'Tracy' and the *Lorikeets* had something special going. When introduced to each other a huge seed pod quickly developed, so different from using the pollen from other *delicatum*s which hardly aroused the *Lorikeets*, any resultant pods being small and useless. Qualities inherited by *D. Class* are sturdy racemes and much improved flower count together with robust and vigorous growth. Many reflect the *D. kingianum* in their make-up by forming compact floriferous plants which get better year after year.



D. Class 'Act'



D. Class 'Pauline'



D. Class 'Big Red'



D. Class 'Lady'

D. Class 'Windsor Downs'



Examples of *Dendrobium* Class

Dendrobium Class 'Windsor Downs' is well-known as a fine orchid and a good parent. This seedling from the original seed pod was raised by Bernie Fletcher, who first exhibited it at the Warringah ANOS Show in the mid-nineties. It won Best Seedling and Champion Hybrid despite having been out in flower for about three weeks. Several growers have divisions of the plant and will have noted how well the flowers last. Fast forward twenty years to the recent ANOS Conference in Kempsey in 2016, and there is *D.* Class 'Windsor Downs' proudly atop Henk Van den Berg's sumptuous display, not at all fazed by the high quality of the surrounding orchids.

It caught the eye of the judges and public alike, one reason for its popularity being the unusual violet colour of the flowers, starkly off-set by a pure white centre. This can at times create quite an eerie glow, as shown in the photograph. It has been used to effect in breeding, two of its hybrids, *D.* Touch of Class (*D.* Class 'Windsor Downs' x *D.* Ray's Spot 'Superb') and the unregistered *D.* Class 'Windsor Downs' x *D.* Yondi Tina 'Goliath'.

Dendrobium Class 'Pauline' draws an appreciative audience each time it is displayed. Beautifully raised and grown into a specimen plant by Trevor Onslow, it is a wonderful sight and was rewarded by being Champion at St. Ives Orchid Fair a few

years ago. It has been used in hybridising and one of its progeny *D.* Top Class (*D.* Class 'Pauline' x *D.* *kingianum* 'Speckles') is an excellent compact hybrid of award quality while *D.* Class 'Pauline' x *D.* Star of Gold 'Bathurst' is a large yellow hybrid. Please refer to the photo of *D.* Class 'Pauline' as words can't do it justice.

To sum up

I made the cross of *Dendrobium* Class four times and these are the only ones of which I am aware. The original cross was flaked and named by Neil Finch who distributed the first lot of seedlings. Seeing the potential in the hybrid I carried out the subsequent flaskings myself once I had my own laboratory in action. Besides being an attractive vigorous plant, early growers were surprised to find that it flowered in August, quite unusual for a colourful hybrid at that time. Maybe *D.* Class will be remade in the future but in the meantime the better examples keep being shared around, and after twenty-five years still demand attention when shown. The ease of culture, floriferous nature, and beautiful quite unusual colour ensures its popularity for years to come.

A chance purchase, a white 'Dellie', and a result which makes hybridising so rewarding!

David Butler is a well known breeder of Australian orchids.





D. × delicatum 'Tracy'



D. Lorikeet 'Mel' x *D. Yondi Tina* 'Goliath'



D. Class 'Pauline' x *D. Star of Gold* 'Bathurst'

Conservation: History, Philosophy, Choices, and Land Clearing

Text and photographs by Roslyn Capell
capell666@ozemail.com.au

Alfred Russel Wallace



From March to May 1857, Alfred Russel Wallace (pictured) journeyed through the Aru Islands in the Arafura Sea as part of his eight year expedition to the Malay Archipelago during which he travelled east as far as New Guinea. At the Aru Islands he wanted to obtain a specimen of a male king bird of paradise (*Cicinnurus regius*) which had been described by

Linnaeus from poorly preserved skins. It is a small bird some 16 cm long, but very beautiful. Wallace's record of the journey (Wallace 1869) reveals that he was deeply moved by the experience of finally seeing a live specimen, and his account and his description of the colourful bird are quite poetic. He described its cinnabar red plumage as having 'a gloss as of spun glass', and the feathers on its breast as pure white 'with the softness and gloss of silk'. It has other embellishments typical of birds of paradise, and he described those in detail. We can all see this little gem and its courting ritual by simply taking a quick trip to YouTube.

After describing the bird and his feelings about seeing it, Wallace said:

It seems sad, that on the one hand such exquisite creatures should live out their lives and exhibit their charms only in these wild inhospitable regions, doomed for ages yet to come to hopeless barbarism; while on the other hand, should civilized man ever reach these distant lands, and bring moral, intellectual, and physical light into the recesses of these virgin forests, we may be sure that he will so disturb the nicely-balanced relations of organic and inorganic nature as to cause the disappearance, and finally the extinction, of these very beings whose wonderful structure and beauty he alone is fitted to appreciate and enjoy. This consideration must surely tell us that all living things were not made for man. Many of them have no relation to him.

Wallace had seen what man – civilized or not – can do to a tropical forest. During his 15 months at Sarawak, on Borneo, he had seen the goldfields and newly opened coal works and the space cleared for building the railroad to the river. Would he have

been able to conceive of the extent of the damage that man would wreak on these tropical forests over the next hundred and fifty years? Wallace was interested in orang-utans. Was it within his comprehension to imagine that the Bornean orang-utan, which was plentiful when he was there, would, by 2016, be considered critically endangered due to hunting, habitat destruction, habitat degradation and fragmentation? The authors of the IUCN assessment wrote that 'the combined impacts of habitat loss, habitat degradation and illegal hunting equate to an 86% population reduction between 1973 and 2025', an estimate they stated to be relatively conservative (IUCN 2016).

Wallace's observations of animals and plants and his careful records of where he found them and of the variation between species from island to island and from one side of a river or mountain range to the other, supported the theory of evolution by natural selection which he and Charles Darwin had simultaneously, though largely independently, developed. When he landed on Lombok, he found birds that were entirely different from birds he had observed on Bali, a mere 25km away. He ascribed the difference between the two islands as due to being parts of two distinct continents, and the demarcation line he traced between Bali and Lombok, extending up to separate Borneo from Sulawesi, bears his name. Wallace was a key figure in the development of the science of biogeography (the study of the geographical distribution of species), which is an important component of the modern discipline of conservation biology.

Wilderness to Biodiversity

Australia's first national park, the Royal National Park in Sydney, was established in 1879. It was the second national park in the world, the USA having beaten us by only seven years with Yellowstone National Park in 1872. However Yellowstone was established as a public park for the benefit and enjoyment of the people, not to protect the flora and fauna. Similarly, our Royal National Park was created for the purpose of human recreation. It was not until the 1970s and 1980s that the preservation of wilderness – wild areas remote from and untainted by human activities – came to be seen as a goal for nature conservation. Events such as the flooding of Lake Pedder in 1972, and the successful campaign

to stop the damming of the Franklin River in 1983, provided focus for wilderness protection. Some states, including NSW, introduced legislation to protect wilderness areas, to restore them and allow them to evolve in the absence of significant human interference. However wilderness is a concept of frontier culture and it sets man apart from nature.

Since the 1980s there has been a shift in emphasis towards conservation of biological diversity (biodiversity) which recognises that *Homo sapiens* is a species that is dependent on the biosphere and has interests to be taken into account, but not automatically given priority. Biodiversity and the related concept of sustainable development have become key objectives. Biodiversity includes diversity of species, genetic diversity, and diversity of ecosystems. We have seen the development of the scientific discipline of conservation biology, combining principles from various academic disciplines including ecology, economics, population genetics, biogeography and philosophy, to protect and manage biodiversity.

With these objectives in mind, throughout the 1990s increasing attention was given to evaluating the conservation status of plant and animal species, and compiling lists of threatened species and the processes that threaten them. On an international basis this was done by the International Union for Conservation of Nature (IUCN) with its Red List, and in Australia separate schemes and legislation were introduced nationally and in each state and territory. New South Wales passed threatened species legislation in 1995 which provided for surviving species to be listed as critically endangered, endangered, and vulnerable, and provided for the preparation of recovery plans to facilitate the recovery of each species. There were also provisions in respect of threatened ecological communities. The Commonwealth passed similar legislation in 1999.

At present separate lists of threatened species are maintained by the Australian government and by each state and territory. There are differences in the methodologies used for assessing the status of species, and there are also differences in terminologies and threat categories in legislation. The various governments are currently working together to develop a consistent approach, to be based upon the best practice standard established by the IUCN (SoE 2016).

Philosophy

Conservation is expensive and there is not enough money from government funding to save everything, so choices have to be made. How do we make those choices? What criteria do we apply? How do we value species and ecosystems? These inter-related questions involve complex issues of philosophy and ethics.

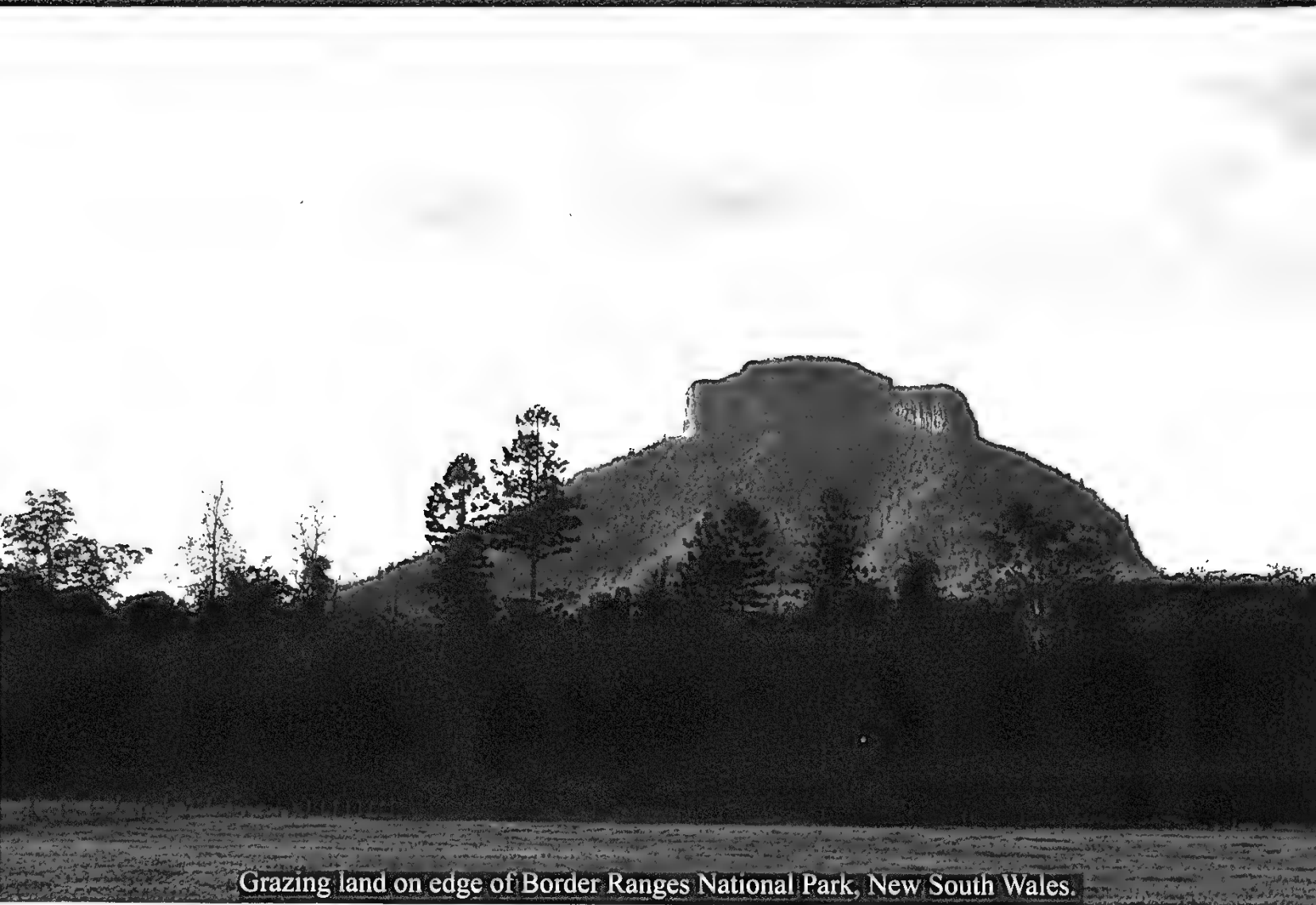
What Wallace recognised back in 1852 – that all living things were not made for humans – was an early stirring of the notion that species and ecosystems have objective intrinsic value which is not conferred by humans. This view holds that whether or not a species has any particular value to human beings – because it provides us with food or clothing or something beautiful to look at or merely to feel good about – a species has value merely by reason of its existence. However not everyone believes that all species have objective intrinsic value. Some believe that only species which are of direct use or value to humans – a value conferred by humans – should be preserved, and even among those with this subjective intrinsic value approach there will be differences of opinion because different people value different things.

Against the intrinsic value approach, whether objective or subjective, is the notion of instrumental value, which ascribes a value because something is a means to a desired end related to improving human well-being in some way. The desired end might be preservation of biological diversity, which overlaps with the subjective intrinsic value concept, but it might also be connected to some economic value, and instrumental value might favour development. There is more, but it gets complicated. Suffice to say that the two approaches – intrinsic value and instrumental value – arise from two fundamentally different value systems, and this is bound to lead to conflict for decision-makers.

Allocation of Resources Among Threatened Species

Leaving aside iconic species which have a high public profile and are very popular or are valuable for tourism, as they are certain to receive funding in any event, how do we decide where to direct the available funding?

The threatened species legislation was primarily geared towards conserving biological diversity by preventing the extinction of threatened species.



Grazing land on edge of Border Ranges National Park, New South Wales.



Mount Warning, Wollumbin National Park World Heritage Area, New South Wales.

Priority was given to the species most in danger of extinction. Recovery plans are available on various government web sites, and it is clear that a huge amount of work has been put into preparing assessments and recovery plans, that a great deal more work is being put into applying them, and that further work will be required in future to monitor and re-evaluate them. However not much information is available to indicate how successful these recovery plans have been or are likely to be. Considering the nature of the threats involved and the sort of work required to implement and monitor the recovery plans, it is likely that it will be decades before it is known whether the plans have been successful, and to what extent.

A school of thought emerged which advocated applying the sort of decision-making methods used in business to the many and varied questions that arise at all levels of conservation work. It recognises that there are competing interests and limited resources and that the available resources should be used effectively and efficiently with a view to delivering the best possible long-term outcome. In a paper published in 2001, Professor Hugh Possingham discussed the range of issues and questions that need to be answered in order to manage biodiversity, and explained the decision theory approach. He provided examples of how it might be applied in practice, including resolving the question of which of the large number of threatened species receives a portion of the limited government funding that is available. Decision theory involves applying a set of objective criteria, including ecological triage which, simply put, would give funds to the species that can be saved for low cost and quickly, with the highly endangered species for which recovery actions are uncertain and expensive left to fend for themselves. This pragmatic approach accepts that some species will become extinct, but the object is to minimise the total loss of species over a long time frame, as opposed to trying to save everything. This approach has not been universally embraced since it involves deciding not to fund certain critically endangered species. Some of those species might recover on their own, but some will become extinct if the pressures on the population continue.

The present Australian Government's Threatened Species Strategy (DoE&E 2015, p 20) acknowledges that resources will always be limited and that:

We need to ensure resources and efforts for threatened species recovery are targeted to where we can get the biggest benefit from each dollar invested. When deciding which projects or initiatives to support, we need to ensure the best use of our effort, money and time.

The strategy sets out the principles the government considers when examining and comparing proposals, in order to weigh up the relative benefits and identify where investment can be most beneficial and help the greatest number of species, to get the best results with the money available. Factors include conservation status, importance to the environment, uniqueness, importance to people, chances of success, benefit, umbrella action, and cost (DoE&E 2015, p 20-21). It appears that decision theory is being applied.

Land Clearing

Clearance of native vegetation remains the single most significant threat to terrestrial biodiversity. Based on estimates compiled by the ACF, over 564,800 ha of native vegetation was cleared in Australia during 2000; the AGO estimate for 1999 is 468,844 ha. The former area is exceeded by only four other countries in the world: Brazil, Indonesia, the Democratic Republic of the Congo (DRC) and Bolivia. (SoE 2001, p.73-74)

Our rate was only about one fifth that of Brazil, and less than half that of Indonesia, but the figure is significant nevertheless. It is noteworthy that as at 2001, as much land had been cleared since the 1950s as in the 150 years before 1945 (SoE 2001, p.74).

Queensland and New South Wales have two of the highest rates of land clearing. There is some variation between different sets of published figures, but using the figures in the *ABS Year Book Australia, 2003*, in NSW 30,000 ha of woody vegetation was cleared in 1999 and 100,000 ha in 2000. For Queensland, the figures were 425,000 ha for each of those years. The Queensland Government's report (SLATS 2014-15) indicates the rate for 1999-2000 to be significantly higher. In both states action taken by their governments in the early years of the new century led to dramatic reductions. In 2004 in Queensland the Beattie government took the advice set out in *The Brigalow Declaration*, a document co-authored by Professor Hugh Possingham and signed by 420

other biological scientists, and introduced changes which led to the phasing out of broad-scale clearing of remnant forest and woodland by the end of 2006. In New South Wales, Premier Carr sought the advice of the Wentworth Group of Concerned Scientists which recommended a new approach involving better management of native vegetation. Mr Carr managed to get all interested parties together, compromises were made and agreement was reached, leading to *The Native Vegetation Act 2003* which essentially stopped broad-scale land clearing in New South Wales.

However a change in government in Queensland in 2012 led to changes which greatly weakened controls on land clearing, and there was a significant increase in the clearing rate by 2013–2014. Recent changes to legislation in New South Wales may see a similar result.

In 2014 the New South Wales government appointed a four person independent Biodiversity Legislation Review Panel to carry out a comprehensive review of the state's existing biodiversity legislation package. Its aims were to facilitate the conservation of biological diversity, support sustainable development, and reduce red-tape. The Panel delivered its final report in December 2014. The report made a series of reform recommendations. The Baird government introduced components into the draft legislation which led to Possingham's much publicised resignation from his position on the panel and as an advisor to the Government, and on 30 October 2016 he wrote to Mr Baird confirming his concerns. In the letter he submitted that 'A key intent of the report is that broadscale land-clearing would only be possible through the biodiversity offsetting process. Biodiversity offsetting, by definition, means no net decrease in the quality and quantity of native vegetation.' He referred to the series of self-assessable 'codes' introduced by the government, which he considers 'will enable broad-scale clearing of 100s of hectares of native vegetation on individual farms without offsetting. These codes are not consistent with biodiversity offsetting'. The letter was subsequently made public and was incorporated into Hansard during the debate in the Legislative Council on 15 November 2016.

Many other scientists and conservation groups and interested parties made submissions opposing the draft NSW legislation. On 8 July 2016, a declaration similar to *The Brigalow Declaration*

was issued by a group of over 400 Australian and international scientists calling on Australian governments and parliaments, especially those of Queensland and New South Wales, to take action to prevent 'a return to the damaging past of high rates of woodland and forest destruction, in order to protect the unique biodiversity and marine environments of which Australia is sole custodian' (SCBO 2016).

On 18 August 2016 the Queensland Parliament failed to pass legislation which would have reinstated land clearing controls. On 17 November 2016, the New South Wales Parliament passed the *Biodiversity Conservation Bill 2016* and associated legislation, and it is expected to come into operation on 1 July 2017. Only time will tell whether fears about increased broad-scale clearing in NSW will be realised. If they are, biodiversity and threatened species in New South Wales will suffer, as they are continuing to suffer in Queensland.

Conclusion

So far I have not mentioned orchids, but everything in this article applies to orchid conservation. Most of our native orchids are terrestrial, and they grow in the grassland and woodland that is cleared for settlement and agriculture, and the epiphytes grow on the trees.

Once land has been cleared and habitat degraded the damage is done. Saving the remaining populations of orchids that have managed to survive in uncleared patches is difficult, time consuming, expensive, and may not be successful in the long term. Most of our terrestrial orchids are heavily dependent on certain types of mycorrhizal fungi at some stage of their lives, and saving the orchids requires saving the correct fungi too, and any other plants with which the fungi have an association and which they need for their survival, and also the insects that pollinate the orchids. If translocating disturbed populations or re-establishing with plants cultivated ex-situ, all these requirements have to be catered for. There is no point planting seedlings in a location that does not have all the elements they require to live more than one season.

The work of orchid conservation is a complex, expensive and labour-intensive activity which requires the involvement of expert scientists. There are orchids that are yet to be discovered and described and assessed, and there needs to be more time spent locating further populations of the ones

we do know. When we have found them we need to count and monitor them to record changes in populations in order to be able to reassess the status of the species and determine whether recovery actions are having any impact. This is a lot of work, and a lot of the important monitoring and data collection is not being done. One of the key findings of the Australian Government's *State of the Environment 2016* report on Biodiversity (SoE 2016, p.viii) was 'The lack of data and information from long-term monitoring of biodiversity is universally acknowledged as a major impediment to biodiversity conservation'.

The Threatened Species Strategy recognises that where efforts to protect threatened species are supported by active local community groups they are more likely to succeed, and that we all have a role to play (DoE&E 2015, p 32). In recognition of the important contribution that can be made by individuals who are not scientists, the Australian Government recently introduced a system of Citizen Science Grants to assist researchers to do more work, and to enable the public to contribute in various ways such as collecting data. These grants are made under the Inspiring Australia – Science Engagement Programme. Some members of the public, such as birdwatchers, have been contributing data for scientific research projects for many years, but the notion now has a catchy name and has been embraced by a wider range of research organisations and by governments, who have recognised the potential value of having a large pool of enthusiastic volunteer workers. State and territory governments, non-government conservation groups and other organisations have web sites inviting expressions of interest from people who would like to participate. It is unknown whether citizen groups will have the expertise and application over the long term to achieve the stated goals.

It would be heartening if all governments and all political parties would commit to policies that prevent further broad-scale land clearing. Prevention is better and cheaper than cure. In the meantime, it is important that we all do what we can to help conserve what we still have. If governments adopt an approach to funding that leaves some of the most threatened orchids to fend for themselves, the role of community based conservation groups of orchid enthusiasts and landcare groups is likely to become increasingly important.

Roslyn Capell is the ANOS Inc. Conservation Officer

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Green Colour Form of *Peristeranthus hillii* (F.Muell.) T.E.Hunt

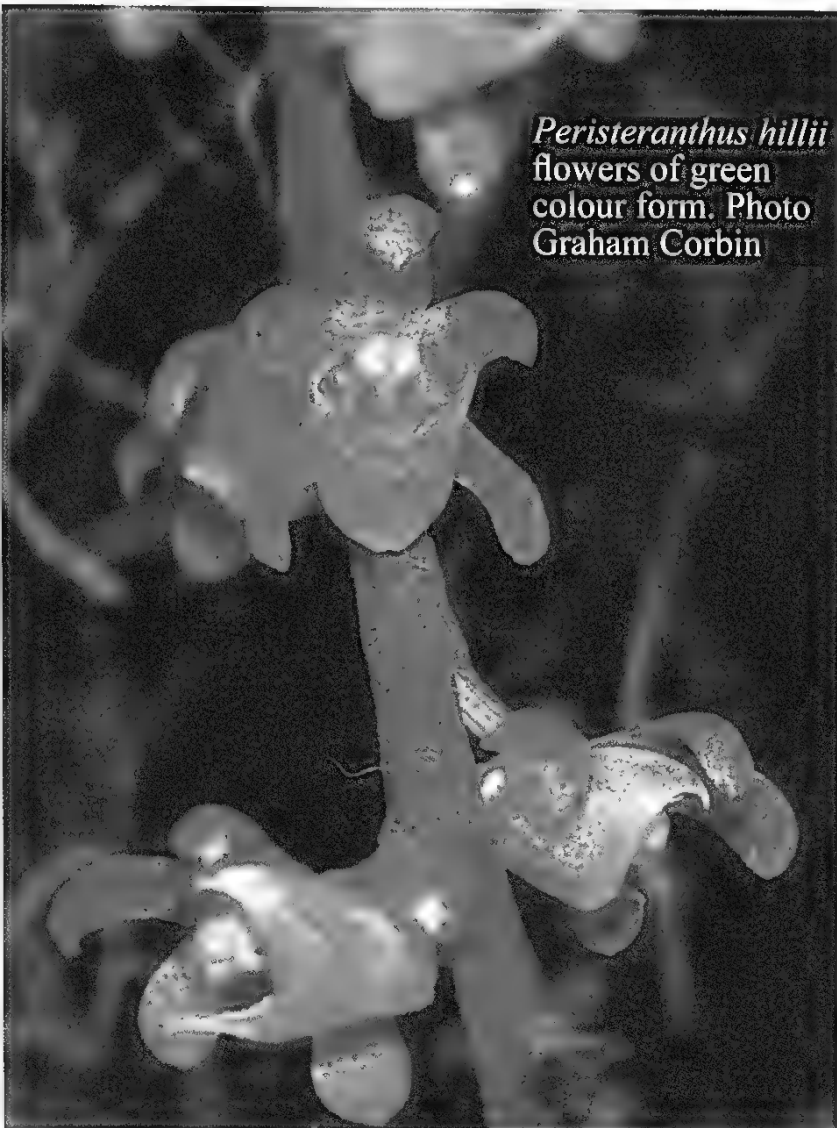
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Peristeranthus hillii is a monotypic genus endemic to Australia, described in 1954 by T.E. Hunt (*Queensland Naturalist* 15: 17 (1954)). It has two previous names which are based on von Mueller's original description: *Saccolabium hillii* F.Muell. in *Fragm.* 1: 192 (1859) and *Ornithochilus hillii* (F.Muell.) Benth. in *J. Proc. Linn. Soc. Bot.* 18: 334 (1881).

It occurs naturally from the Bloomfield River in Queensland south to the Hastings River in New South Wales. In tropical regions north of Mackay it is found mainly in highland rainforests. In subtropical regions between Mackay and Coffs Harbour it is localised to coastal and near-coastal rainforest especially on ridge tops and slopes in drier types of rainforest. In temperate regions south of Coffs Harbour it is now sporadically distributed in littoral rainforest and extending into adjacent hills. It typically grows on trees and woody climbers in rainforests from sea-level to 1100 m.

Peristeranthus hillii is a semi-pendent epiphyte with one or rarely two or more shoots. The inflorescences are up to 25 cm long with up to 75 flowers per inflorescence. The inflorescences I have seen both on a limited number of benched plants and a larger number of plants in the wild can be 30–35 cm long and pendent and the flowers downward facing. The small flowers are widely opening but the sepals and petals strongly incurve at the apices (distal ends). The flowers are 4–7 mm wide by 6–8 mm high. The flower colour is typically pale green with crimson spots and suffusions. The crimson spotting and suffusions also occur on the labellum. The flowers are fragrant and are pollinated by small beetles attracted by perfume and nectar.

It flowers from September to October, mainly October. A group of wild plants being watched last year in southern Queensland were first seen in bud in mid-July and at the end of October the flowers were starting to open. Some plants, generally those in brighter and sunnier positions, had flowers



Peristeranthus hillii
flowers of green
colour form. Photo
Graham Corbin



Peristeranthus hillii
green colour form.
Photo David James



Peristeranthus hillii, specimen plant with usual crimson-green flowers. Photo Graham Corbin

fully open at the end of October, but some plants in shadier positions were still in bud. This means that some of the *Peristeranthus hillii* in southern Queensland were still in flower in November.

In the green colour form, anthocyanin pigments, responsible for strong red, purple and blue colour are absent, so the red suffusions do not show and the colour is a green –yellow. The green is due to chlorophyll and yellow to carotenoid pigments. These are not alba forms as this term should be reserved for pure white flowers lacking chlorophyll.

I have not seen green flowering *Peristeranthus hillii* before this year and most of the botanical literature does not mention flowers without the crimson spotting and suffusions except in Jones (2006), where this is not specifically discussed, and the flowers are recorded as “pale green, often with numerous crimson spots and suffusions”. Dockrill (1992) includes a photograph by David Titmuss of a plant that is generally pale green except for a very small amount of fine crimson spotting on the distal quarter of the length of the petals and the very edge and back of the sepals. The text does not indicate the flowers occur without crimson spotting and suffusions.

I have spoken with a native orchid enthusiast with many years of experience who found two plants of *Peristeranthus hillii* with green coloured flowers in the wild in northern New South Wales. This find was two plants amongst thousands. One plant

was large and the other was a small seedling. No other green flowers were found in the area after extensive searching during the flowering period in the subsequent year. This enthusiast has seen or knows of plants in the wild from Gladstone to northern New South Wales, including the border ranges along the Queensland and New South Wales border from the coastline to the Great Dividing Range.

I suspect that the green form of *Peristeranthus hillii* is uncommon. I would be interested in hearing from anyone who has seen plants with green flowers either in the wild or benched.

David James is an ANOS Inc. Councillor and Queensland ANOS Judging Registrar.

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Dr. Hugo Flecker (1884–1957) – Marine Stinger Authority, Naturalist and Orchid Explorer

Bill Lavarack
lavarack@westnet.com.au



The name Flecker is familiar to Australian orchid enthusiasts who know *Dendrobium fleckeri* as a most attractive orchid. It is also a familiar name to lifesavers and doctors in the north of Australia due to the danger of the box jellyfish *Chironex fleckeri*. Both are named after the same man, Dr

Hugo Flecker. How did Dr. Flecker come to have one of Australia's most attractive orchids and one of Australia's most feared animals named after him?

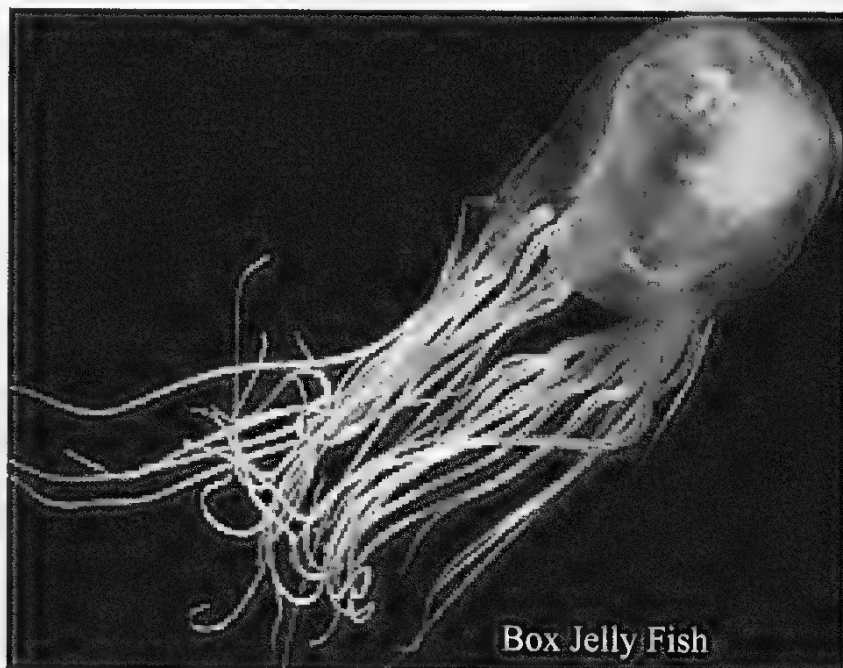
Hugo Flecker was born in Melbourne in 1884. He studied medicine in Adelaide and Sydney, graduating as a doctor in 1908. He then studied in England gaining LRCP (Royal College of Physicians) and he became a Fellow of the Royal College of Surgeons (Edinburgh). During World War I he served as a captain and later a major with the Australian Medical Corps in the Middle East and France. He returned to Australia in 1917 and started a practice as a radiologist and became a pioneer of radiotherapy.

In 1932 Flecker moved to Cairns establishing himself there as a radiologist and radiotherapist, one of very few north of Brisbane. As early as 1921 he had been a member of the Field Naturalists' Club of Victoria, displaying a keen interest in natural history. He was soon deeply involved in the study of natural history in Cairns. His extra-curricular activities branched into two areas – natural history, which we will examine later, and toxicology of venomous animals of the area. In this latter area he made his name as a scientist. He described the first Australian fatality due to cone shell poisoning in 1936. He published accounts of two cases of survival of taipan bites and also published on scorpion stings and on poisoning by certain plants. His Cairns practice soon became a centre not only for expert radiological diagnosis

and radiotherapy, but also for advice about and treatment of snakebite, jellyfish stings, scorpion bites and poisoning from toxic plants.

He made his name in scientific and medical circles with his research into fatalities from box jellyfish (or 'sea wasp') stings. Before his research the cause of these deaths was a mystery. His meticulous research in the 1940s and 50s revealed the previously unknown cause of deaths and major injuries to be a jellyfish later named *Chironex fleckeri*, in his honour. He also researched unexplained deaths and injuries from another dangerous but unidentified jellyfish, the results of which he tentatively named as 'Irukandji syndrome', now known as a major problem to swimmers in tropical waters. In 1952 he published a paper on the source of the stings which result from the tiny jellyfish *Carukia barnesi*. Flecker's work is regarded as classic in this field of research. The research was famously carried on after Flecker's death by a former victim of the *Irukandji* jellyfish sting, Dr Jack Barnes.

From a natural history standpoint, he established the North Queensland Naturalists' Club, being foundation president from 1932 to 1945 and vice president from 1946 until his death in 1957. He influenced the club to study and record the plants and animals of North Queensland in a scientific, systematic manner. To facilitate this he established



the *North Queensland Naturalist* which was to prove a great success. It quickly grew to become more than just a chatty newsletter and included material of interest to professional biologists. In the 1930s to 1950s Cairns must have been a lively place with respect to interest in natural history. More than 50 new species were described during Flecker's time in Cairns. From an orchid point of view 36 new species or new combinations in Orchidaceae were recorded in the magazine. Fifteen were proposed by local naturalists and the remainder by established orchid specialists from the southern states who were frequent contributors. Ten of the 36 names are currently accepted, and three of these are by northern authors, although to be fair a further two have had a change at the level of the genus. This reflects the problems faced by northern authors, including distance from southern herbaria, the lack of readily available literature, and perhaps a lack of experience and training. On the other hand it also demonstrates an independent, confident desire to record the flora the local naturalists saw around them.

At the suggestion of C.T. White, the Queensland Government Botanist, he started a herbarium in 1933 which was to become known as the Flecker Herbarium. By 1950 there were over 5000 specimens and when the herbarium was incorporated into the Atherton CSIRO Herbarium (QRS) in 1971 the number was estimated at over 12000. This collection is now an important part of the Australian Tropical Herbarium (CNS) in Cairns. He co-ordinated a census of plants indigenous to North Queensland as a supplement to the *North Queensland Naturalist*. Of particular interest to orchid enthusiasts was the publication in 1945 of *Checklist of the Orchidaceous Plants of North Queensland* which was part of the census. This list was revised in 1966 by Alick Dockrill and was the forerunner of his ground-breaking book *Australian Indigenous Orchids* published in 1969. Several well-known naturalists wrote articles for the *North Queensland Naturalist* over the years, including Alick Dockrill, Stanley F. Goesling-St Cloud, Claude Le Roy and the southern-based H.M.R. Rupp, T.E. Hunt and W.H. Nicholls.



D. fleckeri Photo Peter Adams



D. fleckeri 'Hugo' Photo Peter Adams

North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

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No. 77

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Tuesday in alternate months, at 8 p.m.

Sunday, 14th October, 1945: Launch excursion to Michaelmas Cay, attended by 25 members, where the breeding of Terns was inspected.

Tuesday, 13th November, 1945: Address by Dr. S. H. Blackburn, entitled Reminiscences of a Globe Trotter.

New Members Elected: Capt. J. H. Parry, 116 A.G.H., Jungara; Mr. Leslie Wright, City Council, Cairns; Mr. W. G. Hancock, Department Agriculture and

Stock; Bowen; Dr. J. H. Blackburn, Cairns; Mr. C. G. Martin, Green Island.

Excursion to be held Sunday, 9th December, to Wright's Creek. Rail motor leaves Cairns 9.20 a.m. Alight Edmonton, and proceed through Hambleton, returning in time for rail motor at 5.40 p.m.

Next Meeting, Tuesday, 8th January: Lecture by Capt. J. H. Parry, A.A.M.C. "Part Played by Microrrhiza in Plant Economy."

New Species of *Dendrobium* (Orchidaceae) from Babinda

(By the Rev. H. M. R. RUPP, Northbridge, N.S.W.)

D. LUTEOCILIUM, sp. nov.

Caules elongati, foliosi. Folia ovata vel late lanceolata, 4-6½ cm. longa, ad apices inaequaliter emarginata. Flores duo in racemis axillaribus, luteovirides, fugacii. Sepala petalaeque circiter 12 mm. longa. Sepalum dorsale et petala angusta, fere remiformia: sepala lateralia multo latiora; calcar brevissimum. Labellum vix 7 mm. longum, 5 mm. trans partem latissimam, trilobatum: discus viridis cum linea elevata una, lobi laterales lutei, acuti, lobus intermedius cum ciliis luteis prope apicem acutum, sed apex ipse glaber. Columna crassa, anthera supra plana.

Stems elongate, leafy. Leaves ovate to broadly lanceolate, 4-6½ cm. long, unequally bidentate or emarginate at the tips. Flowers two in axillary racemes, yellowish-green, fugacious. Sepals and petals all about 12 mm. long. Dorsal sepal and petals narrow, lanceolate or almost paddle-shaped; lateral sepals much broader, forming a very short blunt spur with the base of the column. Labellum scarcely 7 mm. long, 5 mm. across its widest part, trilobate: disc green, with a single median raised line; lateral lobes yellowish, acute; mid-lobe with brownish markings, and near the apex a conspicuous patch of yellow cilia, but the apex itself quite glabrous, acute. Column stout, anther almost flat-topped.

Babinda, North Queensland,
26/10/1945; J. H. Wilkie.

Through the promptness of Dr. H. Flecker in despatching Mr. Wilkie's specimen by air from Cairns, I received it in good condition within 48 hours of its collection 1,500 miles away. After my first inspection I was inclined to think it might be identical with one of the New Guinea species of *Dendrobium* represented in the N.S.W. National Herbarium. An investigation next day showed affinities with *D. djamuense* Schltr., but the latter is a more slender plant with broader leaves, and very acute or acuminate floral segments. It would not be possible to place the Babinda plant in this species. New Guinea possesses so many species obviously belonging to the same section of the genus as Mr. Wilkie's plant, that it is not impossible for the latter to prove to be one of them. But it is not identical with any that I can trace through the National Herbarium collections and literature; therefore it seems to me justifiable to name and describe this plant, certainly new for Australia. It is by no means a showy species, but is interesting because it does not seem to be closely related to any other Australian Dendrobe. I have named it from the patch of yellow cilia on the lamina of the mid-lobe of the labellum.

Hugo Flecker was involved in the first botanical collection of several orchids including *Dendrobium fleckeri*, *Liparis fleckeri*, *Pterostylis stricta*, *P. procera*, *Sarcochilus borealis* and *Schoenorchis micrantha*. Several plants and animals were named after him. As well as the previously-mentioned jellyfish and orchids these included *Acacia fleckeri* and *Cupaniopsis fleckeri*.

His contribution is also honoured by the Flecker Botanical Gardens in Cairns. Hugo Flecker was an important supporter and driving force of the gardens from the 1930s to the 1950s. The gardens are now listed on the Queensland Heritage Register and are a major tourist attraction in Cairns.

Further Reading

Clarkson JR 1990 Hugo Flecker and the North Queensland Naturalists' Club. In P. Sharpe (ed.) *History of systematic botany in Australasia*: p.171-178. Proceedings of a symposium held at the University of Melbourne 25-27 May 1988.

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Pearn JH 1996 *Flecker, Hugo (1884-1957)*, Australian Dictionary of Biography, National Centre of Biography, Australian National University, <http://adb.anu.edu.au/biography/flecker-hugo-10199/text18023>, published first in hardcopy 1996, accessed online 11 February 2017.

Bill Lavarack is a retired orchid scientist and author who writes on orchid history.

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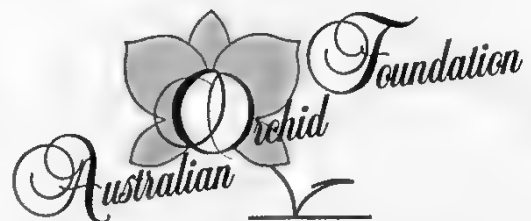
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Rediscovery of *Prasophyllum robustum* (Nicholls) M.A. Clem. & D.L. Jones

Text and photographs by Peter Tonelli
tasnature@dodo.com.au

When my two daughters were in their early teens I periodically accompanied them and their horses over a forested hillside near the town of Latrobe approximately 2 km from home, along the sides of the undeveloped tracks. I occasionally observed the occasional large *Prasophyllum*, made obvious by its distinct large white flashy labellum. The only plant reference at the time was *Native Orchids of Tasmania* by M.J. (Jack) Firth (1963), detailing a somewhat confusing description relating to *P. odoratum* and *P. patens* but no mention of any leek orchid resembling *P. robustum*.

While preparing her book *Students Flora of Tasmania Vol 4a - Orchidaceae*, author and botanist Dr Winifred Curtis F.L.S from the University of Tasmania asked me if I had ever seen *P. patens* var. *robustum*? "No, but I have seen *P. odoratum* growing on a wooded hill side near home!" I replied. "I'm having difficulty sorting out the genus *Prasophyllum*" she added.

This prompted my curiosity, so the following November (1995) I managed to find a few 'questionable' specimens and immediately posted them off to David Jones at the Centre for Plant Biodiversity Research at the Australian National Herbarium, Canberra.

A few days later back came an unexpected reply (below).

Do you realise what an exciting find you have made !!! The *Prasophyllum* is *P. robustum* and it is particularly exciting because it is only the **second time** ever that it has been collected. The original collection was from Smithton in about 1939. I am especially pleased with your find because I have been chasing this species for many years now. I had mistakenly assumed that the species would be found in coastal sandy country but your find shows that it is a mountain forest plant growing on the well-structured, heavier type soils. Of course so much of this country has now been cleared for agriculture. I hope that the area where this species occurs can be preserved because it is now the **only place** in the world where this orchid is known from.

Extract of letter from David Jones.

Prasophyllum robustum, the robust leek orchid, is part of the *Prasophyllum patens/truncatum* complex. It can be confused with another member of this complex, *Prasophyllum stellatum*, but can be distinguished from this species by its wider petals, labellum apex that curves back through the lateral sepals and callus that only extends to the bend in the labellum. It can also be distinguished from *Prasophyllum stellatum* by its lowland distribution and earlier flowering time.

This endemic Tasmanian species is currently listed as endangered under the Tasmanian Threatened Species Protection Act 1995 and under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999...Critically Endangered. The following information is taken from the Threatened Species Listing Statement (Dept. Primary Industries, Water and Environment April 2001).

National Context

Prasophyllum robustum is now known only from one small site in grassy and shrubby *Eucalyptus amygdalina* forest on well-drained brown loam derived from basalt. The geographic distribution of the species is very restricted; the area of occupancy being 0.1 ha and the extent of occurrence 0.001 km² and it exists in a single population. The species was formerly known from one other location near Smithton in the far North West. *Prasophyllum*



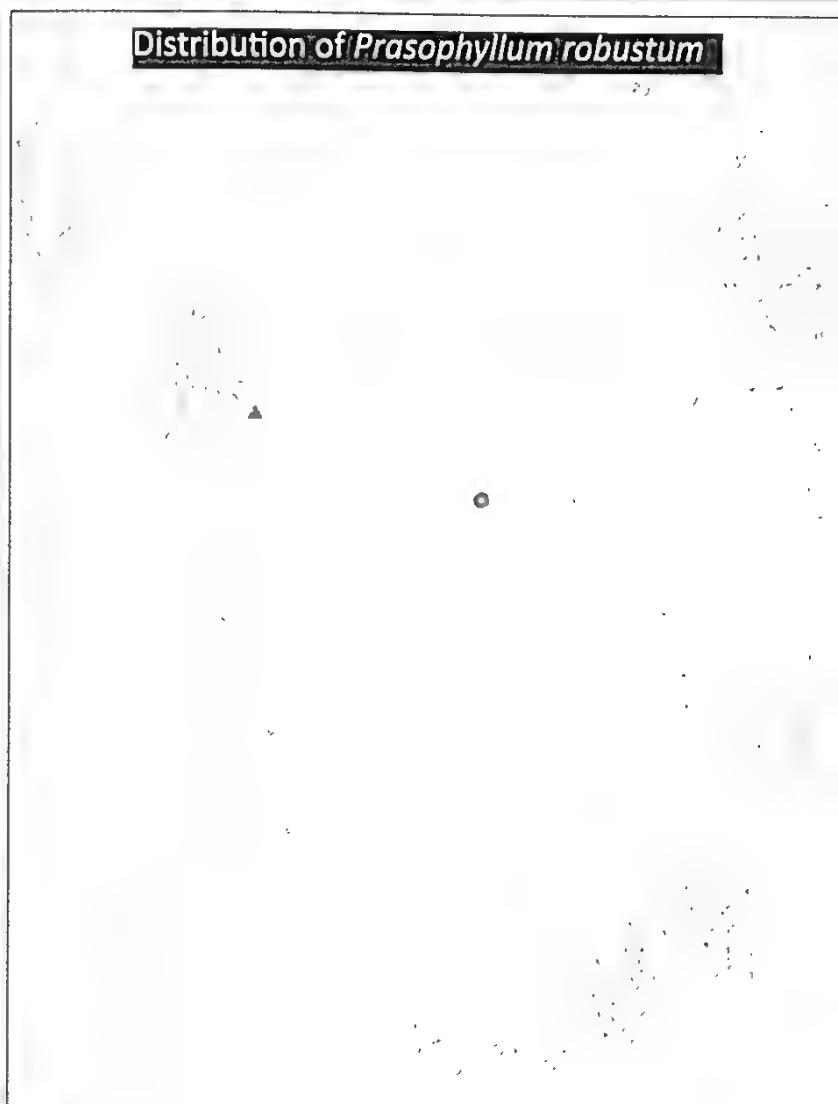
Prasophyllum robustum. Photo Roger Hay



Prasophyllum robustum



Prasophyllum robustum



robustum was previously known as *Prasopphyllum patens* var. *robustum* and had not been collected since the early 1900s. It was presumed extinct until rediscovered at Latrobe in 1995.

Threats, Limiting Factors and Management Issues

The only known extant population of the robust leek orchid is on private land. The owners are aware of the significance of the block of land, and the needs of the orchid in particular, and have been successfully managing the land for some years. Management has included patch burning which has served to keep the habitat open and may have stimulated flowering. Although the species may be stimulated by fire, it does not entirely depend on it to produce flowers, giving confidence to the population estimate.

There is little potential habitat remaining. The area surrounding this private block of land has been largely cleared and converted to housing or pasture for horses. The habitat is shrubby and grassy *Eucalyptus amygdalina* forest on basalt and is being investigated for a possible covenant under the Regional Forest Agreement as little of this habitat remains following extensive clearing in the past for agricultural activities. Until some formal arrangement is agreed upon, the threat of

the population being cleared continues to apply.

Conservation Assessment Population Estimate

There is only one known extant population of the robust leek orchid. It consists of about 50 mature individuals. Following extensive clearing in the past of forest on basalt for agriculture, and it is unlikely that many if any new populations remain to be found. However since the species has been 're-introduced' back into the orchid flora of Tasmania, many enthusiasts have recognized it occurring in another location in Northern Tasmania at Notley George (Reserve) in 2012, 50 km to the east of Latrobe.

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Jones D, Wapstra H, Tonelli P, Harris S. 1999 *The Orchids of Tasmania*. Melbourne University Press.

Peter Tonelli is a co-author of *Orchids of Tasmania* and Honorary Warden of Henry Somerset (Orchid) Conservation Area, Latrobe, Tasmania

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Bulbophyllum bracteatum and *Bulbophyllum minutissimum* - Jumping to Conclusions

Gerry Walsh
rocklilyman@gmail.com

In 2013 I attended the ANOS Conference in Brisbane. While driving up from Sydney via the New England Tableland, I stopped off at a spot that I have known since 1986. This place sits at the edge of an intimidating deep granite gorge and is dimpled with many rocky outcrops over a vast area. On a few of these granite spires there have always been extensive colonies of two *Bulbophyllum* species.

One is the fairly rare *B. bracteatum* while the other is the common but rarely recognised *B. minutissimum*. The latter I believe to be common, but because of its diminutive size it is rarely noticed by most bush walkers and orchid growers who venture into the wild. *Bulbophyllum minutissimum* is one of the smallest flowering orchids on earth. For this reason, I refer to it as “rarely seen”.

I descended over the escarpment edge to where truck-sized boulders sat on the steep slope. Clambering around and between the monoliths, I was becoming a little confused and wondered if I was in the same locale I had visited over the years, because search as I may, I could find none of the two bulbophyllums at all.

I last called into this spot some 12 years before. There were very good numbers of orchids here then. I came to the conclusion that it was certainly the right place. However, no orchids other than *Dendrobium linguiforme* could be seen. This rang alarm bells. I concluded that someone must have found the spot and ripped them all away. Very dejected, I climbed back up to the vehicle and continued on to Brisbane.

While on holidays in 2015 I resolved to visit the spot again, this time with much more time up my sleeve. For two years I had been pondering how those orchids could just disappear. It was a remote spot and the few people who knew where it was were trustworthy and not orchid plunderers.

What I found was far different from what I had been supposing for those two years. I carefully studied every nook and cranny on the ancient boulders and was pleasantly surprised to find small plants

of both species. The large mats of orchids that I had known for over thirty years had gone but a few dozen small seedlings and tiny mature patches were still there. It was a relief to find them.

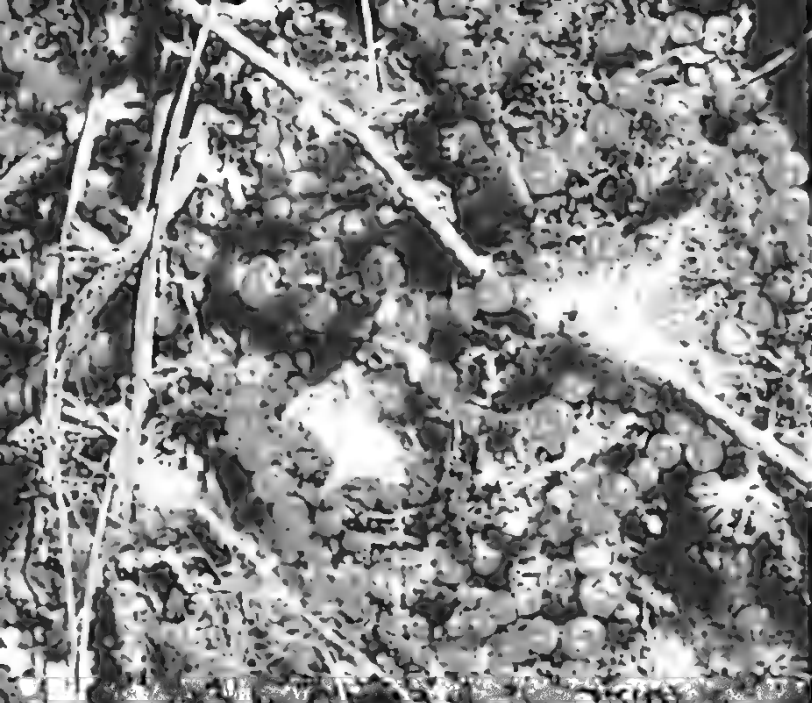
While sitting on a soft rock eating my lunch, I absorbed the scene with new eyes and inquisitiveness. One thing had changed dramatically in the decade since my last visit. There was a great amount of rock velvet fern (*Pyrrhosia* sp.), *Hoya australis*, mixed fern species and a vast amount of lichen taking over the rocks. I could not recall such a huge population of these plants way back.

In fact, it dawned on me that there was so much vegetation inhabiting the rocks, that the bulbophyllums had been swamped nearly out of existence and the rocks were now the home of brush-tailed rock wallabies. Their dung was all over some of the flattened fern beds on the more accessible sides of the boulders. Several of them eyed me off when I arrived.

On parts of the rock surfaces, small seedling plants of *B. bracteatum* were growing just fine, not as yet smothered by the approaching blanket of ferns and lichen. The *B. minutissimum* was faring better. It is a colonising species, and despite its small size its rate of growth was great enough to out run the attacking force. At the rear of the clumps, the tiny bulbs were being swamped and were quite dead.

I also noticed that quite a bit of *D. linguiforme* was long dead. It was fodder for the long leaf form of rock velvet fern that was stalking it. As the fern caught up to the orchid it quickly died off. Where the fern had not invaded the *D. linguiforme* was quite healthy.

What do these observations mean? Denied light, and no doubt kept too moist under the ferny mass, the orchids were simply dying. You wouldn't need to be Einstein to work it out. In the long term a drought may come along, a fire will follow up, and all the ferns and lichen will be destroyed along with the orchids. The rock canvas will be clean once again and in nature's way colonisation



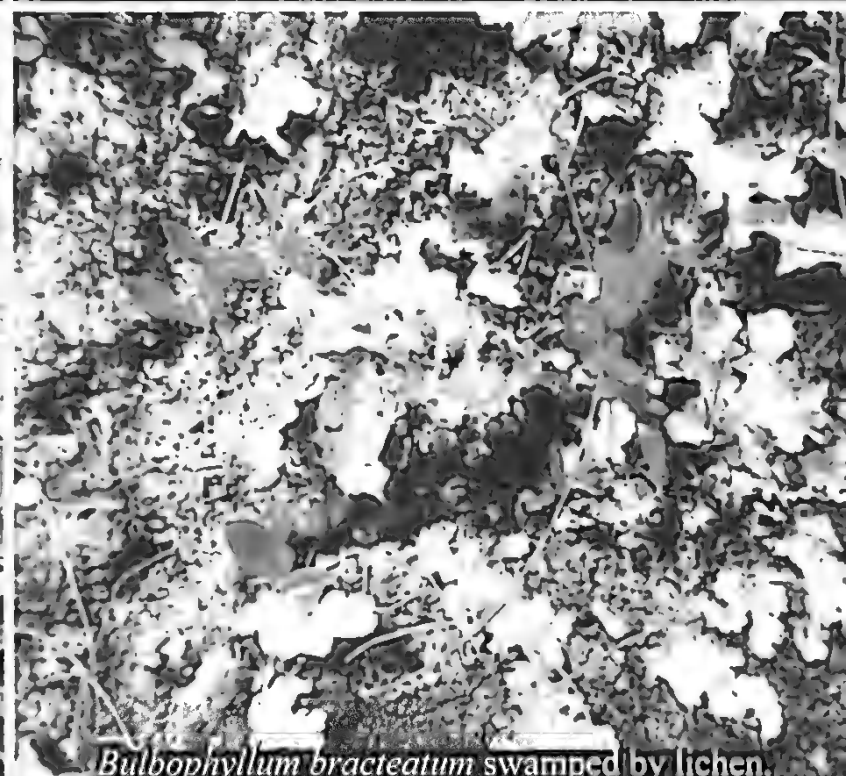
Healthy *Bulbophyllum minutissimum* with seed capsules.



Bulbophyllum minutissimum being swamped by lichen.



Healthy *Bulbophyllum bracteatum*.



Bulbophyllum bracteatum swamped by lichen.



Dendrobium linguliforme dying.



Rock covered with fern and lichen.

will commence again. Whichever species gains the quickest foothold may rule for a long time and this regard it may be the orchids. Some will survive in little cracks and overhanging rocks. They will venture forth unimpeded and form the large clumps which I remember from years ago. The circle of life will march on.

Here is something to think about . . . How many times have you heard it said, or you've read, someone proclaiming: "There used to be a lot of such and such an orchid down that gully or up on that cliff. It's all gone now, some mongrel got in there and stripped it bare!". This may have been very possible but it isn't always true.

My experience, as you have read, was similar. The great clumps were gone and I jumped to the

Geelong ANOS Tuber Day

ANOS Groups are always looking at ways to encourage wider interest in the appreciation and conservation of Australian orchid species. Most if not all efforts in recruiting new members is through advertising and other publicity around annual orchid shows. While quite a few new members are 'lookers' rather than 'growers', a major part of maintaining interest in our activities is to enable the successful ex-situ cultivation of species and hybrids of Australasian orchids.

Getting hold of a range of plants is not a problem for epiphyte growers, with a good number of commercial nurseries providing an excellent range of very reasonably priced seedlings and plants. However, with the exception of Les Nesbitt's nursery in South Australia, the availability of terrestrial species is usually limited to any spare pots that appear on club and show sales benches.

The biggest problem with almost all terrestrial species is their growth habits. They disappear underground each year, causing growers considerable anguish as they wonder if their orchids are ever going to re-emerge. The redeeming feature is that the interval between purchase and flowering is usually only a matter of months.

We are fortunate that there are expert growers who are able to multiply up tubers of a wide range of

conclusion that a man or woman was responsible. I was wrong. In the time span of evolution, small changes are not noticed all that quickly. Had I not known the history of these rocks for over 30 years I would never have known what had happened here. I would have thought that the seedling orchids were coming along fine and how great a happening that was. I would have been oblivious to the sad demise of the many large clumps of bulbophyllums that that are a highlight of my orchid memories.

We humans see events like the ones I've described in the blink of an eye, but changes been going on for all of time. Waxing and waning is part of nature's grand plan. Humans simply don't live long enough to learn it well

Gerry Walsh has an ANOS judge with a wide interest and experience of orchids in the bush.

Geoff Beilby
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species and make them available to members. For nearly 20 years the research and experimentation by Richard Thomson's ANOS (Vic) seed group and State Government threatened species researchers, has furthered the ability to propagate large numbers of tubers from seed. Geelong ANOS group members Neil Anderton and Lance Breguet have been heavily involved and the late Peter Kiernan was also a dedicated participant. Significant numbers of tubers are now providing stock for re-establishment of threatened species in the field, as well as finding their way into the group tuber banks maintained by members.

For the last 10 years, the Geelong ANOS group has held a tuber day and group barbecue in early February to distribute tubers to club members. Most of the tubers are spares from ANOS (Vic) members after their own tuber day, plus tubers multiplied by our own members. Neil Anderton has been most successful in maintaining the collection of the late Peter Kiernan, which is also an excellent tuber resource. Richard Thomson brings the donated Melbourne club tubers down to our designated venue, and gives us a rundown of current research and tips on cultivation.

Tuber Day 2016

The event was held in Neil Anderton's shed at Teesdale. All members appreciate the effort Neil

and his team put into preparation for the day. After the barbecue we got down to the business of the day. It was good to see a couple of children involved in the process. Tubers are divided into packets of 3–8 tubers, depending on relative difficulty of culture or rarity, with species and provenance noted on the packet. Packets are spread in alphabetical order on the front table. The \$1.50 price per packet includes sufficient potting mix to pot up the tubers. Potting medium is obtained by Neil from commercial sources.

All prospective purchasers are given a number, and as each number is drawn, the member can select one packet from the table. When all numbers have been called, they are redrawn for the next selection. The process continues until all members are satisfied with the tubers they have selected, or the packets of desired species run out.

This year 270 packets tubers representing 60 species were obtained by our members. In all about 1500 tubers were purchased. There were 60 packets leftover after the 31 members were satisfied, or

had already obtained the species left on the table. The genera available have been predominantly *Pterostylis*, *Chiloglottis*, *Corybas*, and *Microtis*, with increasing numbers of *Acianthus*, common *Caladenia*, *Cyrtostylis*, *Diuris*, *Leptoceras*, *Thelymitra*, and even small numbers of spider *Caladenia* species. Neil potted up the leftover tubers for club competitions and sale at our annual orchid show.

As well as being a great social day, the event enables members to obtain a good selection of terrestrial native species for their collections. Judging by plants being benched at meetings, members are increasing their knowledge and skill of terrestrial orchid culture.

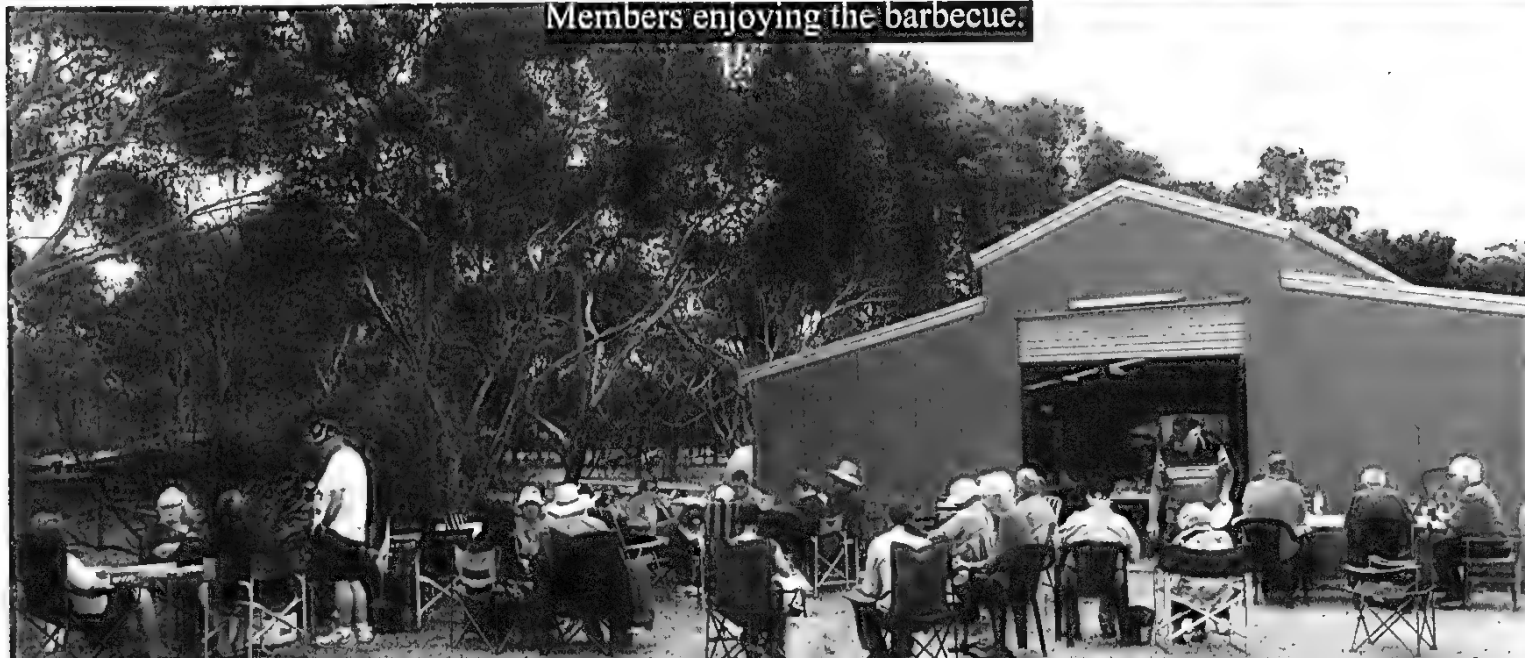
If they are not doing so, I am sure that all ANOS groups who have members growing our terrestrial species are capable of organizing similar events to involve more members in growing these very rewarding orchids.

Geoff Beilby is a long-time ANOS member and naturalist.



Dick Thomson (left) and Neil Anderton setting the rules.

Members enjoying the barbecue.



The 2016 Ira Butler Trophy Winners

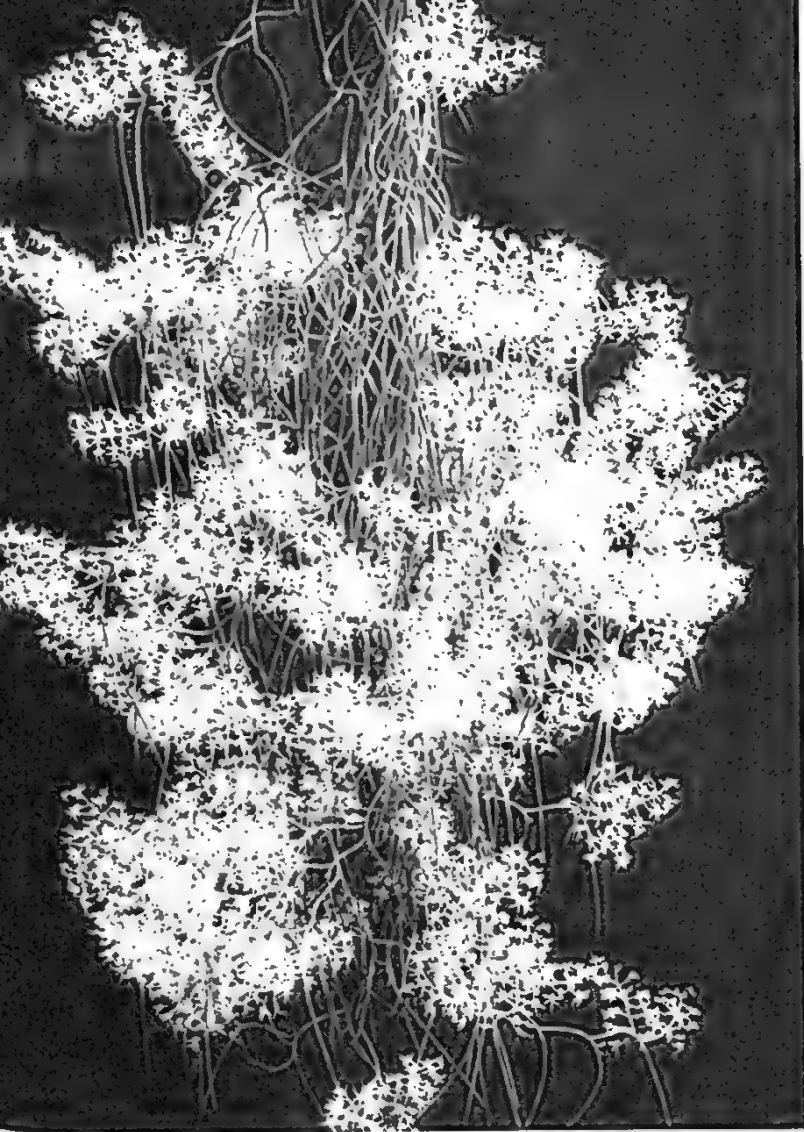
Ira Butler Gold Trophy

Champion Australian Native Orchid Hybrid 2016

Plant: *Sarcochilus* Cendra 'Marie'

Owner: Mr. Keith Moss





G. Hermon Slade Trophy

Champion Australasian Native Orchid Species 2016

Plant: *Dendrobium chordiforme* 'Fred' AM-ACE/AOC 2016 (NSW)

Owner: Mr. Fred Fear

224 inflorescences of 100mm with 5,306 flowers & 70 buds.



Bill Murdoch Trophy

Champion Australian Native Species 2016

Plant: *Dendrobium tetragonum* var. *melaleucaphilum*

Owner: Kris Kopicki

G. Hermon Slade Trophy

Champion Australasian Native Orchid Hybrid 2016

Plant: *Dendrobium* Tweetas 'Mustard' AM-ACM-AD/
AOC 2016 (NSW)

Owner: Mr. Keith Scott

150 inflorescences of 52mm with 780 flowers and 1 bud.



Comments on Recently Awarded Plants

Comments have been provided by Queensland and Victorian ANOS judging panel members and growers. Photographs are published in the March 2017 and this issue of *The Orchadian*.

Award No. 250 *Dendrobium speciosum* var. *curvicaule* 'Dave' HCC/ANOS NSW 2016

Ted and Winsome Walmsley presented this seedling of the cross 'Dave's Gold' x 'Daylight Moon'. The plant is large growing with stout canes of medium size. The flowers were chunky, well textured and arranged in a brush like foxtail and showed the shape and influence of *D. speciosum* 'Daylight Moon'. Colour was a delicious solid yellow-gold with very little fading toward the centre. The long racemes were gracefully arching. The parent 'Dave's Gold' was part of a consignment from Eungella Nursery sent to Dave Mitten, a source that gave rise to many superior forms of the variety. 'Daylight Moon' is also from that area.

Sheryl Lawson

Award No. 251 *Dendrobium speciosum* 'Zoe' HCC/ANOS NSW 2016

The plant is an inter-varietal cross of *D. speciosum* var. *speciosum* 'Windermere' x *D. speciosum* var. *curvicaule* 'Palmerston'. Five racemes with a total of 485 flowers presented beautiful pale yellow flowers with a white centre. The gently arching racemes presented very attractively. There is great alignment of blooms that have very heavy texture, good segment width and an open labellum.

The plant is a consistent performer having picked up Reserve Champion at an Orchid Society Spring Show as well as a place at the previous ANOS Conference in Qld. It received its award despite being blown off the bench by high winds during judging.

Lloyd Edwards

Award No. 252 *Dendrobium speciosum* 'Melva's Gold' HCC/ANOS NSW 2016

This plant owned by Davis Hemmings was a well flowered specimen with 11 inflorescences and 846 flowers. The inflorescences cascaded gracefully down, presenting the lovely bright yellow flowers in an attractive manner.

Sheryl Lawson

Award No. 253 *Dendrobium Dunokayla* 'Stony' AM/ANOS VIC 2016 81.1 pts.

This plant is owned by Michael Droboski and the cross was registered by DUNO in 2007. Parents are *D. Kayla* and *D. speciosum*. In the background are *D. speciosum* 68.8%, *D. fleckeri* 18.8%, *D. jonesii* 6.3% and *D. falcorostrum* 6.3%. The plant displayed 319 large, *D. speciosum*-shaped flowers which were yellow-ochre in colour with white centres. The labellum was very attractive and quite long with maroon markings. The flowers presented very well, were fresh, thick and waxy and evenly distributed over the 11 inflorescences that measured up to 450 mm long. The habit was also very good - flowers presented well on long, sturdy, erect pedicels, all facing correctly along each raceme. This hybrid has cool growing dominance of species. The cross itself has a number of awards, some with more dominance of red/purple markings in the flowers.

Jennie Wilson

Award No. 254 *Dendrobium Eclipse* 'Annetta' AM/ANOS VIC 2016 81.9 pts.

The species composition has a very high percentage of *D. speciosum* (81.3%) in its background, with 6.3% *D. tetragonum*, 6.3% *D. fleckeri* and 6.3% *D. bigibbum*. It is a good example of a *D. speciosum*-style hybrid, with no other clear dominance.

The plant is owned by Michael Droboski. It presented extremely well with lots of yellow flowers with good depth of colour and even shadings of dark crimson/purple colour on the tepals. The large flowers presented on strong inflorescences of 7-21 flowers on notably strong peduncles and upright racemes. Colour was even & consistent across the whole plant. The consistency of size, shape and the chunky texture of the flowers had added appeal. The only downside of this plant was a few short racemes, a small number of flowers not quite out, but overall 2/3 presented extremely well for the size/age of this plant and no doubt will receive a FCC for the above outstanding features very shortly.

Julie Trower

Award No. 255 *Dendrobium speciosum* var. *speciosum* 'National White' AM/ANOS VIC 2016 82.6 pts

This is a division of a well-known plant found

many years ago in the Sydney region, and used extensively in line breeding. As a parent it transmits the good presentation of flowers on the raceme, and has received a HCC/AOC in the past. This plant has been grown in Melbourne for over 12 years, growing strongly in the years 2013 and 2014 and producing a good number of pseudobulbs, which helps to explain the very high flower count (above 150 on each of 3 racemes). Racemes were long and arching, and flowers presenting and arranged well, without *Botrytis*. Callyn Farrell told me his plant at Newcastle averages 100 flowers per raceme. The plant had not been repotted since 2011.

Peter Adams

Award No. 256 *Dendrobium kingianum* 'Queen's Jewels' AM/ANOS VIC 2016 81.6 pts

This is one of our best plants from over 30 years of line breeding (see article March 2017 issue). It is a strong growing plant of medium height which received AM/AOC in the past year. It has won Champion Orchid at ANOS Melbourne Suburbs Group Spring Show and Australian Champion Orchid at several other shows in the past. It is floriferous, and bears 7 or more flowers per raceme. The flowers are well shaped with striking splash purple tepals, a white centre, and a well-balanced labellum which has a strong purple colour.

Peter Adams

Award No. 257 *Dendrobium Yarra Moon* 'Butterfly' HCC/ANOS VIC 2016 79 pts

This cool growing *Dendrocoryne* hybrid comes from our *D. kingianum*-style breeding lines. The cross used two quality parents, *D. kingianum* 'Pale Dragon' AM/AOC and *D. Jesmond Gem* 'Olive Adams' FCC/AOC (from a highly awarded remake of the original cross), and was made in 2003. The seedlings from this cross are compact with large pastel to deep mauve flowers that present well and have fine purple pepper spots on the labellum. It contains 62% *D. kingianum*, *D. speciosum* 25%, *D. fleckeri* 6% and *D. jonesii* 6%. The latter two show very little influence, but flowering time is late – middle to late October in Melbourne. It is a slow grower.

Peter Adams

Award No. 258 *Dendrobium kingianum* 'Joan May' AM/ANOS QLD 2016 81.2 pts

The grand champion native orchid for the Native Orchid Society of Toowoomba's 2016 spring

show was a large pot of *D. kingianum* ('Meg' x 'Persephone'), bred by Ted Gregory for Cedarvale Orchids. Bruce Vayro purchased the seedling from Cedarvale.

The plant had 88 inflorescences carrying 704 open flowers and 13 buds. Each pseudobulb carried between two and three inflorescences carrying 7–9 flowers.

The inflorescences were upright and well clear of the foliage. The flower shape was filled in with wide sepals and petals that had rounded ends. The labellums were wide and flat. The flowers were white with an attractive red-purple streaking or speckling on the ends of the segments.

David James

Award No. 259 *Dendrobium speciosum* 'Trevor Liesegang' HCC/ANOS QLD 2016

The reserve champion native orchid of show for the Native Orchid Society of Toowoomba 2016 spring show was an inter-varietal *D. speciosum* var. *grandiflorum* 'Six Inch Spidery Monster' x *D. speciosum* var. *speciosum* 'Windermere'. It was bred by the Australian Orchid Nursery and purchased as a seedling.

The plant had four inflorescences, one pseudobulb carried two inflorescences and two other pseudobulbs carried one inflorescence each. The two longer inflorescences, being 460 mm and 530 mm in length, carried between sixty-five and seventy-five to eighty flowers or buds.

The flowers were tall, 52 mm high by 30 mm wide. This size and proportioning of the flowers was considered to be intermediate between the *D. speciosum* var. *grandiflorum* and *D. speciosum* var. *speciosum* parentage. *Dendrobium speciosum* var. *grandiflorum* flowers can be much taller than wide. *Dendrobium speciosum* var. *speciosum* 'National White' AM/ANOS 2016 had flowers that were 56 mm high by 40 mm wide compared to *Dendrobium speciosum* var. *grandiflorum* 'Tim' HCC/ANOS 2011 with flowers that 73 mm high by 57 mm wide.

The sepals and petals of this orchid were wider and less tapered than the typical *D. speciosum* var. *grandiflorum*, most likely been derived from the *D. speciosum* var. *speciosum* parentage. The flower colour, except for the markings on the labellum, was a uniform vivid white.

David James

ANOS Awards

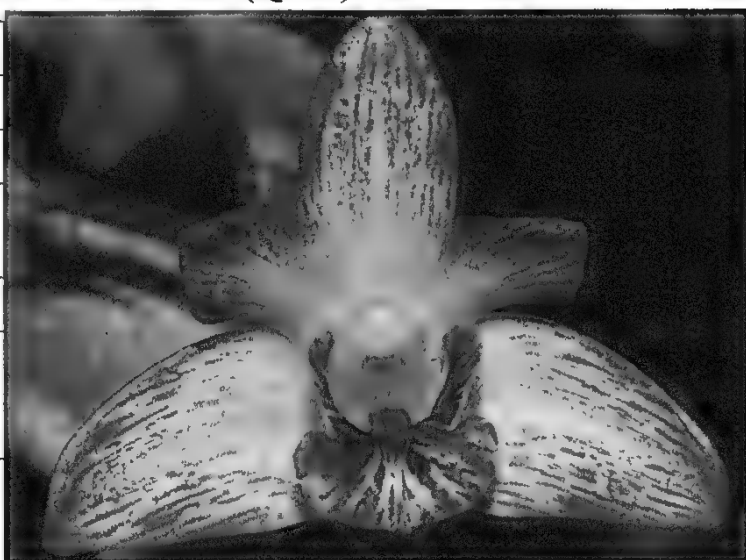
#257 *Dendrobium Yarra Moon* 'Butterfly' HCC/ANOS 2016 (VIC)

Points	79.0
Owner	Peter & Sheryl Adams
Date	27 Oct 2016
Event	ANOS Melb. Suburbs meeting
Photos by	Peter Adams
Number of: flowers inflorescences	71 13
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	34 39 25L 3.5W 26L 12W 26L 9.5W 18L 11.5W 195
Detailed avge points: shape(25) colour(20) size(15) substance/texture(10) floriferousness(15) habit/attractive(15)	20.0 16.2 11.8 7.8 11.8 11.4



#258 *Dendrobium kingianum* 'Joan May' AM/ANOS 2016 (QLD)

Points	81.2
Owner	Bruce Vayro
Date	15 Sep 2016
Event	Toowoomba Spring Show
Photos by	Graham Corbin
Number of: flowers inflorescences	704 & 13 buds 88
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	34 28 15L 7W 18L 10W 19L 9W 11L 10W 120
Detailed avge points: shape(25) colour(20) size(15) substance/texture(10) floriferousness(15) habit/attractive(15)	20.28 16.28 12.14 8.14 12.57 11.85



#259 *Dendrobium speciosum* 'Trevor Liesegang' HCC/ANOS 2016 (QLD)

Points	77.2
Owner	Steve & Sonia Pope
Date	15 Sep 2016
Event	Native OS of Toowoomba Spring Show
Photos by	Graham Corbin
Number of: flowers inflorescences	232 4
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	30 52 29L 3W 28L 7W 30L 6W 14L 7W 460
Detailed avge points: shape(25) colour(20) size(15) substance/texture(10) floriferousness(15) habit/attractive(15)	19.33 16.25 11.75 8.33 9.91 11.66



#260 *Dendrobium speciosum* var. *curvicaule* 'Moggie' HCC/ANOS 2016 (NSW)

Points	77.9
Owner	Peter Dowling
Date	17 Sep 2016
Event	Melbourne Suburbs meeting
Photos by	Bill Dobson
Number of: flowers inflorescences	924 14
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	40 55 33L 4W 28L 7W 36L 7W 14L 8W 480
Detailed avge points: shape(25) colour(20) size(15) substance/texture(10) floriferousness(15) habit/attractive(15)	20.3 16.2 11.7 7.2 12.7 9.8



#261 *Sarcochilus hartmannii* 'Tristan' AM/ANOS 2016 (NSW)

Points	84.9
Owner	Peter Dowling
Date	15 Oct 2016
Event	-
Photos by	Bill Dobson
Number of: flowers number of buds inflorescences	305 115 26
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	29 28 16L 8.5W 15L 10W 15L 13W 5L 3.5W 310
Detailed avge points: shape(25) colour(20) size(15) substance/texture(10) floriferousness(15) habit/attractive(15)	22.5 17.6 12.4 6.7 12.7 13.0



#262 *Sarcochilus* Bessie 'Nice 2012' HCC/ANOS 2016 (NSW)

Points	79.0
Owner	David Butler
Date	15 Oct 2016
Event	-
Photos by	Bill Dobson
Number of: flowers number of buds inflorescences	41 12 5
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	22 20 11L & W 14L 10W 12L 10W 9L 6W 200
Detailed avge points: shape(25) colour(20) size(15) substance/texture(10) floriferousness(15) habit/attractive(15)	19.6 16.8 10.8 7.5 11.7 12.6



#263 *Sarcochilus* Galaxy 'Cream 2011' AM/ANOS 2016 (NSW)

Points	80.2
Owner	David Butler
Date	15 Oct 2016
Event	-
Photos by	Bill Dobson
Number of: flowers inflorescences	78 & 17 buds 6
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	21 23 9L 5W 12L 9W 11L 9W 7L 4W 233
Detailed avge points: shape(25) colour(20) size(15) substance/texture(10) floriferousness(15) habit/attractive(15)	20.0 17.0 10.8 7.8 12.3 12.3



#264 *Dendrobium* Tweetas 'Violet Lip' HCC/ANOS 2016 (NSW)

Points	79.4
Owner	DUNO & Elmore Orchids
Date	10 Sep 2016
Event	Wyong Springtime Festival
Photos by	J. Cutajar
Number of: flowers inflorescences	576 & 11 buds 144
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	28 20 13L 4W 11L 3W 19L 5W 14L 7W 40
Detailed avge points: shape(25) colour(20) size(15) substance/texture(10) floriferousness(15) habit/attractive(15)	judged by appreciation



#266/265 *Sarcochilus dilatatus* 'Lily' FCC-ACC/ANOS 2017 (NSW)

Points	87.3
Owner	Lorraine & Bill Dobson
Date	20 Mar 2017
Event	-
Photos by	Bill Dobson
Number of:	
flowers	27
buds	25
inflorescences	9
Measurements(mm):	
flower across	10
vertical	17.5
petal	7.5L 2W
sepal	8L 2.5W
dorsal	8L 3W
labellum	5L 4W
inflorescence length	38
Detailed avge points:	
shape(25)	22.2
colour(20)	17.5
size(15)	12.8
substance/texture(10)	8.4
floriferousness(15)	13.8
habit/attractive(15)	12.8



See images featured on front and rear covers.



Cedarvale Orchids

Farewell from Cedarvale Orchids

We wish to thank all our customers who supported us for the last 20 years of our business – we hope you have enjoyed our products during this period as much as we have enjoyed providing them for you.

We hope you continue in good health and good orchid growing for the future,

Ross & Rhonda Harvey

Telephone: (07) 3289 1953

email: cedarvaleorchids@cedarvaleorchids.com

website: www.cedarvaleorchids.com

Shows and Events

• **Tinonee Open Day**

Sunday 9th July 2017, 9am to 4pm, 768 Tinonee Road, Tinonee NSW 2430

• **ANOS Central Coast Spring Show**

18th to 20th August 2017, 9am to 4pm, Nara Valley Nursery, 2 Manns Rd, Narara NSW

• **ANOS Kabi Group Inc. Show**

Weekend of 26th & 27th August 2017 Isabella Griffin Room Strathpine Community Centre 199 Gympie Road, Strathpine QLD. Saturday 9am-5pm, Sunday 9am-2pm.

• **ANOS Newcastle Spring Show**

Weekend of 26th to 27th August 2017, 10am - 4pm. Windale - Gateshead Bowling Club, 2A Lake St., Windale NSW

• **Dendrobium Speciosum Spectacular & Australasian Species & Hybrid Show Kempsey ANOS Mid North Coast Group**

Friday 1st September 2017 until Sunday 3rd, Kempsey Dirt Bike Track, Greenhill via Kempsey. Set up Friday 1st September (noon to 5pm) & Saturday 8am to 9am)
website: www.kempseyspeciosumspectacular.com.au

• **ANOS Illawarra Spring Show**

Weekend of 9-10 September 2017 Old Courthouse, Cliff Road, Wollongong 2500, 9am to 4pm both days

• **ANOS Sydney Group Spring Show**

Weekend of 9-10 September 2017 Eden Gardens (Pandorea Room) 301-307 Lane Cove Road, North Ryde 2113

• **ANOS Warringah Group Spring Show**

Weekend of 9-10 September 2017 Forestville Memorial Hall, Starkey St., Forestville 2087 Sat. 9am to 4pm, Sun. 9am to 3pm.

• **ANOS Melbourne Suburbs Spring Show**

Saturday 16th September 2017 Montrose Town Centre, 935 Mount Dandenong Tourist Rd, Montrose VIC 3765 Montrose VIC 3765, 10 am – 4 pm (Sales from 9.30 am)

• **ANOS Macarthur and District Spring Show**

Saturday 23rd September 2017, Rosemeadow Marketplace, Rosemeadow NSW 2560

• **ANOS Illawarra Late Spring Show**

Weekend of 14-15 October 2017 Old Courthouse, Cliff Road, Wollongong 2500., 9am to 4pm both days.

• **Central Coast Spring Show**

14th to 15th October 2017, 9am to 4pm, Nara Valley Nursery, 2 Manns Rd, Narara NSW

• **ANOS Sydney Group Sarcochilus Show**

Saturday 21st October 2017 Community Church, 41-43 Eaton Road, West Pennant Hills.

• **ANOS Newcastle Sarcochilus Show**

Weekend of 21st to 22nd October 2017, 10am - 4pm. Windale - Gateshead Bowling Club, 2A Lake St., Windale NSW

• **ANOS Macarthur and District Late Spring Show**

Saturday 28th October 2017, Oran Park Town Centre, 351 Oran Park Dr., Oran Park NSW

Directory of ANOS Groups (and Associated Societies)

NEW SOUTH WALES

- **ANOS Central Coast;** PO Box 3010, Erina NSW 2250 - Neville Lee (02)4340 5157 2nd Wednesday each month, 8pm. Narara Community Centre, 2 Pandala Rd, Narara 2250
- **ANOS Far North Coast Inc.:** 2 Treelands Cres, Ballina, NSW 2478 - Keith Skaines (02)6686 6303 3rd Saturday of month (except Dec. & Jan.), 2pm various venues, contact the secretary.
- **ANOS Illawarra:** 2 Wilford St, Corrimal NSW 2518 - Bruce Porter (02)4284 8308 2nd Tuesday each month, 7pm. Old Court House, Wollongong.
- **ANOS Macarthur and District:** 8A Boundary Rd., Parramatta NSW 2150 - Wally Southwell (02) 468 8589 3rd Thursday each month, 8pm. Birriwa Community Hall, Fitzpatrick Rd, Mt Annan.
- **ANOS Mid-North Coast:** 69 The Lakes Way, Forster NSW 2428 - John Zietsch (02)6554 9733 3rd Sunday each month, 12 noon, followed by BBQ. Contact for location - Taree or Wauchope
- **ANOS Newcastle Inc.:** PO Box 4021, Rathmines NSW 2283 - Peter Denning (02)4975 3729 4th Thursday of month, 7.30pm. Elernmore Vale Community Centre, Croudace St, Elernmore Vale.
- **ANOS Sydney Inc.:** 9 Alicia St, Glenwood NSW 2768 - Andrew Locke (02)8824 6338 3rd Friday each month, 8pm. Senior Citizens Hall, B.H. Community Centre, Conie Ave, Baulkham Hills.
- **ANOS Warringah Inc.:** PO Box 421, Forestville NSW 2087 - Bill Dobson (02)9981 2525 3rd Tuesday each month, 8pm. Community Hall, Starkey St, Forestville.

QUEENSLAND

- **ANOS Beenleigh Inc.:** PO Box 1130, Beenleigh QLD 4207 - David Cleal (07)3805 6865 1st Thursday each month, 7.30pm. Showground Hall, James St, Beenleigh
- **ANOS Kabi Inc.:** PO Box 424, Aspley QLD 4034 - David James (07) 3359 5752 2nd Tuesday of month except Jan., 7.30pm. Isabella Griffin Room, Strathpine Community Centre, 199 Gympie Road Strathpine.
- **ANOS Mackay and District:** 24 Barton St, Mackay, QLD - Arthur Pinkney (07)4952 2186 2nd Thursday each month, Andergrove Community Centre, Celeber Drive, Andergrove.
- **ANOS Townsville Inc.:** 92 Curie St, Wulguru QLD 4811 - John Nuss (07)4778 4311 1st Tuesday monthly (excl. Jan.) 8pm Townsville O.S. Hall, Joe Kirwan Pk, cnr Bamford Lane & Charles St Townsville
- **Native Orchid Society of Toowoomba Inc.** 106 Umbiram Rd, Wyreema QLD 4352 - Josie Wright (07)4696 2150 1st Friday of month, 7.30pm Lutheran Church Hall, cnr West and Alderley St, Toowoomba

SOUTH AUSTRALIA

- **Native Orchid Society of South Australia Inc.:** PO Box 565 Unley SA 5061 - Les Nesbitt (08) 826 1550 4th Tuesday each month, 8pm. St Matthew's Hall, 67 Bridge St, Kensington.

VICTORIA

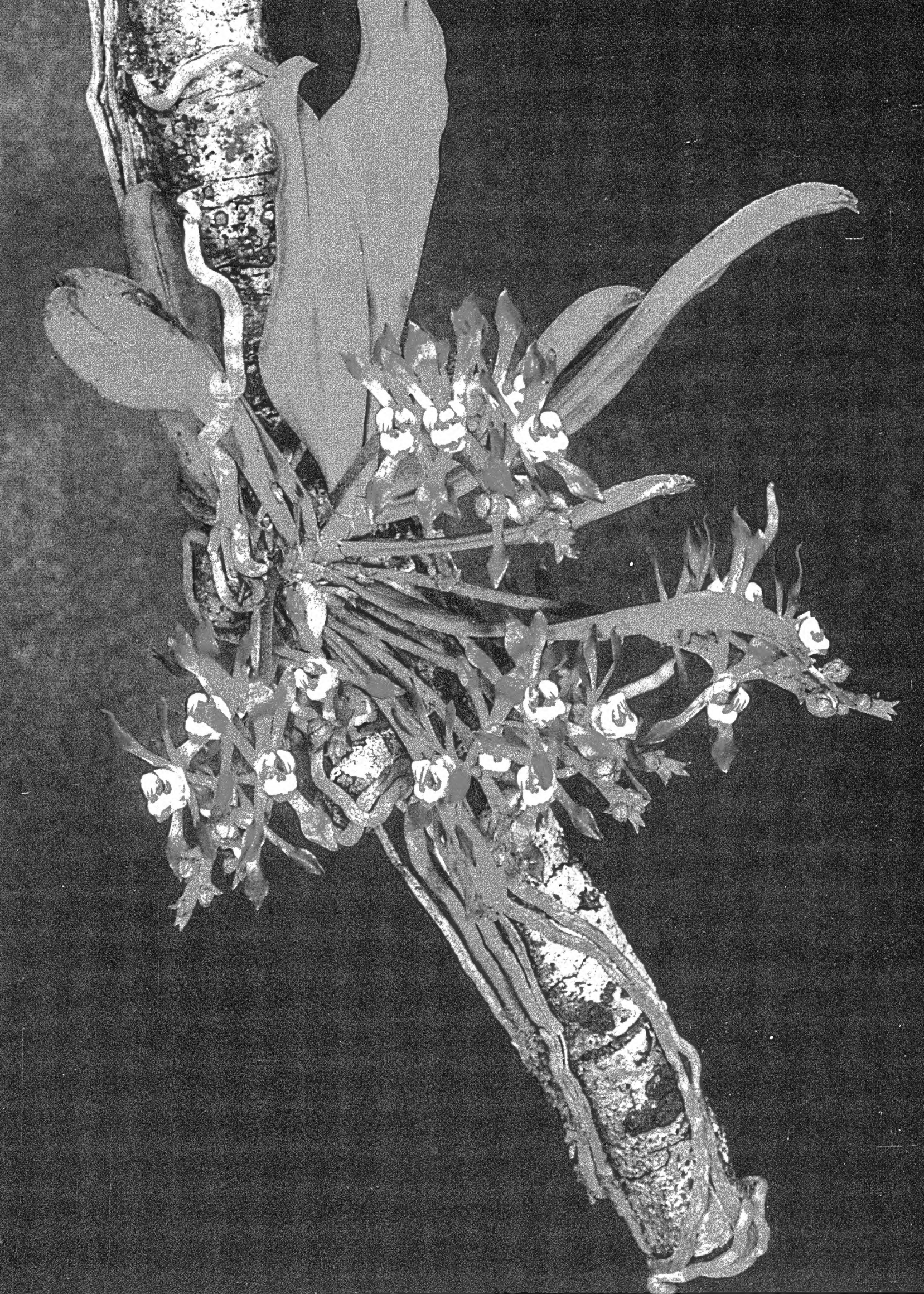
- **ANOS Geelong Inc.:** 609 South Street, Ballarat VIC 3350 - Anita Hinton (03)9743 6040 2nd Wednesday each month, 7.30pm. Uniting Church Hall, Yarra St, Geelong.
- **ANOS Melbourne Suburbs Inc.:** PO Box 169, Bayswater VIC 3153 - Phil Ritchie (03)95255 9606 4th Wednesday of month (excl. Dec. & Jan.), 7.30pm. Montrose Primary School, Leith Rd, Montrose 376.
- **ANOS Victoria Inc.:** PO Box 308, Boronia VIC 3155 - (03)9387 2771 1st Friday each month, 8pm Toorak Uniting Church Hall, , 603 Toorak Rd, Toorak.

WESTERN AUSTRALIA

- **ANOS Western Australia Inc.:** Mrs Lyn Morgan, 99 Bywater Way, Wilson WA 6107 - (08)9451 216 2nd Monday each month, 8pm. Wilson Community Hall, Braibrise Rd, Wilson.

NEW ZEALAND

- **ANOS New Zealand Native Orchid Group** 42 Titiro Moanna Rd, Korokoro, Lower Hutt 5012



Sarcochilus dilatatus 'Lily' FCC-ACC/ANOS 2017 (NSW) Photo: Bill Dobson