



The New Zealand
Native Orchid Journal
November 2013 Number 130

AGM 13

Are you one of those who will make history? History, you ask. Yes history. We are about to conduct the first AGM outside of the North Island.

On 22 Nov 2013 we will assemble at St Arnaud, Nelson Lakes. Some of us staying in motels etc the bulk staying at the Red Deer Lodge.

It is anticipated that there will not be any change to the established format for the weekend.

Fri afternoon and evening: Meet and Greet, with the possibility of a short presentation by our English visitors, 2 couples this year. Dinner will be available from 6pm to allow those travelling a little time to join us and refresh themselves.

Sat: Day spent on exploring the surrounding terrain. Lists of previous sightings will be available.

Sat Night after the Meal; our Annual General Meeting will take place. As our Secretary is unsure of her attendance we will need a volunteer to take the minutes.

Sunday: short trips to look at areas not seen the day before. Then dispersal. But not before paying your share of costs to our Treasurer Judith.

We have four beds available as of 6 Oct 2013. There are 32 persons attending with two unsure of their attendance.

Costs: The costs based on the 23 beds occupied for the weekend are Accomodation 2 nights at \$15 per night plus cleaning and booking fee. Meals; Friday Night \$28.00 per person. Sat night 35.00 per person Total costs per person for the weekend are therefore made up as follows...

<u>Red Deer Lodge</u>	AdminClean	Bed	Meals	
Friday	\$4.78	15.00	28.00	
Sat		15.00	35.00	<u>total \$97.78</u>
 <u>Motels/away</u>				
Fri			28.00	
Sat			35.00	<u>total \$63.00</u>

Both meals are two courses, catered for by a local group who will provide all necessary ingredients. The meals will be served in the Community Centre only. Also the venue for the AGM.

You will need to ensure you have your breakfasts, lunches and snacks materials available.

We will provide Tea, Coffee, Milo, Sugar and milk at the Red Deer Lodge. These will be available to all members for the weekend.

At the risk of sounding boring...

Remember we will be in an alpine environment and snow is likely to occur at anytime of the year. Pack clothing including Wet Weather gear, cold weather, and plenty of insect repellent. The local breed of gnats enjoy fresh meat, and can be very persistent. Remember if you are staying in the Red Deer Lodge you will need sleeping bags, pillows cases, etc. Any other gear you would normally take on our Orchid Weekends.

Finally come along to enjoy yourselves we will make the remainder of the weekend interesting.

Gordon Sylvester, xtr110796@xtra.co.nz

The type locality

Ian St George

Pterostylis irsoniana Hatch, Mt Taranaki

George Fuller of New Plymouth has an orchid diary kept by the late Owen Gibson between 17 November 1945 and 6 September 1948. Val Smith sent us her typescript and pointed out that in it is a record of his discovery of the plant Dan Hatch named *Pterostylis irsoniana* (cover photo by Eric Scanlen),

12 December 1947 “alongside the Nth Egmont tourist road: approx 1 mile below hostel.... Below the 1 mile sign (approx!) on the left side of the road when walking towards the Hostels, are located 2 or 3 thick clumps of *Pterostylis*—?. Hatch says ‘*montana*’, but I believe it to be a totally new species: flowers richly coloured, especially the petals; rich orange-red. Upper sepal much thinner and slightly longer and thinner than *montana*. Leaves much longer and thinner than *montana* but resemble *graminea* very closely....

“... the unknown ‘*montana*’ type ex Hatch was found in 3 colonies, very restricted, along the floor of the valley” (near the Holly Hut)
“growing in swampy alpine bogs. Conditions therein were conducive to strong orchid growth. All the *Pterostylis* observed were flowering seemingly at the peak of their season.”

14 December 1947 “... and the unknown *Pterostylis*? Occur(s) frequently around Dawson’s falls hostel along the walks.”

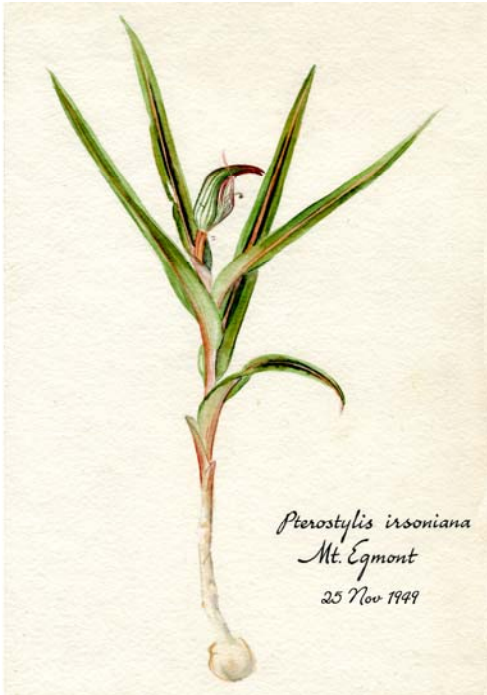
15 December 1947 “... the ‘unknown’ species located at Base of Dome near Holly Hut. Not abundant. The ‘unknown’, here sheltered under dense *Olearia*, *Senecio*, *Veronica* association reached 12” in height but the characteristics of the flower remained unchanged. Always the flower was deeply set in the leaves, the latter over-topping the bloom by 3 to 4 inches.”

20 August 1948 “*Pterostylis*... ‘unknown’ species... appearing just above ground.”

He [1] and Bruce Irwin [2] each painted watercolours of the plant, and both sent specimens to Dan Hatch.



Owen Gibson's watercolour [1]



After his initial hesitation Hatch went on to describe it. His father drew the plant in November 1948 and Dan read his paper before the Auckland Institute on 15 December. His type specimen was Herb. Hatch. No. 568 from North Egmont Hostel, at 3,800 ft., collected December 1948, by OE Gibson, so to have read his paper on 15 December he must have worked quickly with the knowledge of the plant he had gained during the preceding 12 months since its first discovery.

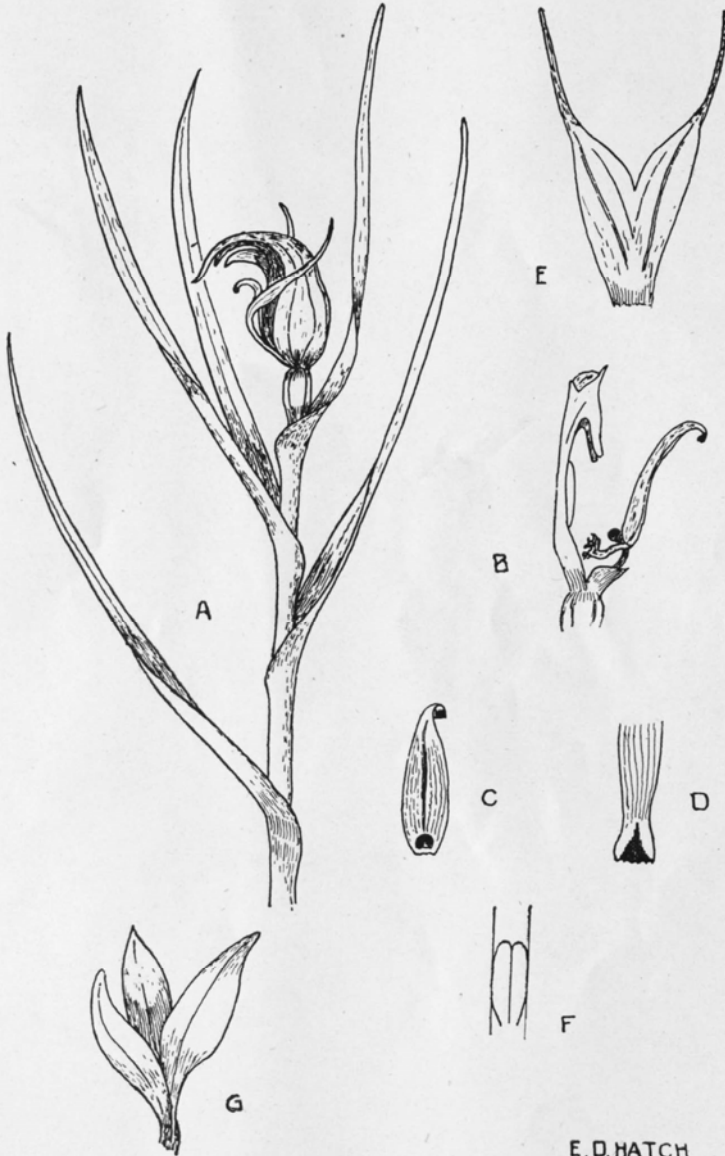
His description was published in *Transactions* in 1950.

***Pterostylis irsoniana* Hh. n.sp.**

Pt. montana typica et venosa affinis, probabilis hybridae originis. *Folia montana similis*, flos trullifolia alobula subsimilis. Sepalum dorsale caudatum, apex horizontalis aut incurvis. Sepala lateralia acuminata aut subulata, unum levis galea excedere. Labellum angustia gradatim ad apex levis turgidis, vel crenulata vel trun-

cata. Basis labellum cum callo magno in genere singularis. Columna venosae typicae.

Up to 17 cm. high. Leaves 1–6, narrow-to broad-linear, acuminate, flat or repand, up to 8 cm. long by 12 mm. broad. Flower solitary, up to 16 mm. high, translucent, with green and red striae. Dorsal sepal shortly caudate, the tip incurved or horizontal. Lateral sepals with an acute sinus, the lobes acuminate or subulate, only slightly exceeding the galea. Petals rather broad, falcate, acute, shorter or longer than the dorsal sepal, the upper half conspicuously red. Labellum gradually narrowed to a slightly swollen, truncate or variously crenulate tip; more or less translucent with the raised midrib and the swollen tip a dark red. Base of the labellum with a *large dark prominent callus* which is unique in the genus so far as the writer is aware. Column typical of *Pt. venosa*.



E. D. HATCH
NOV. 1948

Pterostylis irsoniana: (a) plant natural size; (b) column and labellum from side; (c) labellum from above; (d) tip of labellum; (e) lateral sepals; (f) stigma; (g) juvenile.

ED Hatch senior's drawing of *Pterostylis irsoniana*

Pt. irsoniana appears to have originated as a hybrid between *Pt. montana typica* Hh. and *Pt. venosa* Col. In its present state, however, it is obviously a true species, occurring over a wide area and breeding true to type. It produces ripe seed capsules, and undoubted seed-born juveniles of the *montana* type. Although the leaves vary considerably, the flower form remains constant. The general habit resembles that of *montana*. The flower is similar to *trullifolia alobula* except that the lateral sepals are usually acuminate as in *montana*. The column and labellum are those of *venosa* except that the latter has the swollen tip which is characteristic of *trullifolia alobula*. The basal callus cannot be likened to any known species of *Pterostylis*. This reversion to *trullifolia* is but further proof of the writer's contention that *venosa* has descended from the *obtusa* complex (Hatch, *Trans. Roy. Soc. N.Z.*, 77, 1948, 243–4). In naming it, he has endeavoured to acknowledge the labours and enthusiasm of Messrs. J. B. Irwin and O. E. Gibson, who between them have done much to elucidate the orchid flora of Mount Egmont.

Distribution. Endemic; 6, Mount Egmont, 12.1947–8, O. E. Gibson, J. B. Irwin.

Flowers December–January, 3,000–4,000 ft. Locally abundant along grass tracks and roadsides and in scrub, in 6 or 7 localities on the northern and eastern slopes of Mount Egmont.

Holotype in Herb. Hatch. No. 568, North Egmont Hostel, 3,800 ft. 12.1948, O. E. Gibson. The accompanying illustration can be regarded as the hypotype of the species.

Mr. Gibson has had this plant under cultivation at New Plymouth since 1947, and reports that lowland condi-

tions do not seem to affect the flower form at all, but that the leaves tend to be rather larger and the plant flowers a month earlier.

A couple of years later Hatch wrote for *The Orchadian*, “This is something of a stray, but very beautiful. It has the leaves of *montana*, the flower of *venosa* and the clavate labellum tip of *trullifolia alobula*. It is easily distinguished by the large callus at the base of the labellum which is unique in the genus so far as I am aware.”

Although Dan Hatch had specimens from Gibson and Irwin, and although he named it in honour of both collectors, Bruce Irwin always insisted this was Owen Gibson's discovery.

Pterostylis irsoniana is now widespread from Taranaki south to Arthur's Pass. The cover photograph by Eric Scanlen is from the Ruahine.

References

1. St George IM, Irwin JB, Smith V 2007. Owen Gibson's orchid paintings. *NZNOG Historical Series* 15: pl.11.
2. Tyler B, St George IM 2007. *Bruce Irwin's drawings of New Zealand orchids*. NZNOG, Wellington, p.508.
3. Hatch ED 1950. The Epiphytic Orchids of New Zealand and a New Species of *Pterostylis* from Mount Egmont. *Trans RSNZ* 78: 104.



Owen Gibson and Bruce Irwin in the 1940s.

Original papers

Marlborough Sounds Orchids

by Graham Randle

The sounds have some interesting places to visit and in most of the bays at the right time of the year you will find orchids growing alongside the numerous bush tracks in well established native bush and also in the large amount of re-growth forest that is in most of the bays that were once sheep farms. Having been born in Picton it was there that my interest in orchids began when I was a small boy when my mother showed me a group of *Pterostylis banksii* growing alongside a track in a reserve called *The Domain in Picton Harbour*. The reserve overlooks the area where there once was a Lagoon and is now a boating marina that was made famous in a book written by Janet Frame called *The Lagoon*. This forest consists of numerous large Black Beech trees, Whitey Wood, Five Finger and Yellow Akeake trees, with an understorey of creeping fern and other small native trees. When I now visit my home town I visit these places and these small plants of the same species that I saw 65 years ago are still there almost in the same place where I saw them then. Over these years this small group of *Pterostylis* has popped up year in year out to



flower in this very public place with the entrance to the track at the site of the old sailing ship named the *Echo*—and other species are there to.

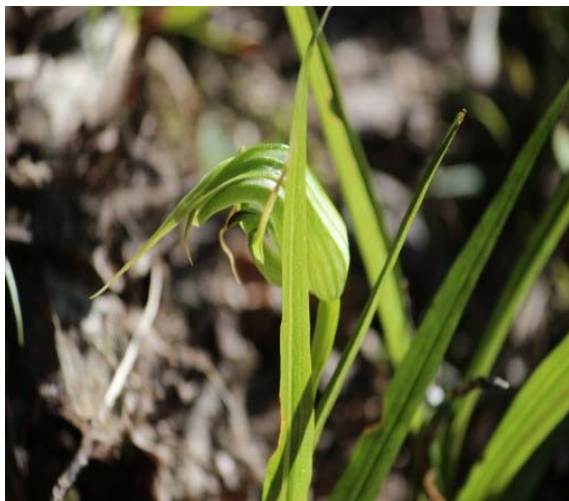
If members do have time in the area a fast boat ride in a Water Taxi down to Motuara Island at the Northern Entrance to the sounds is well worth a trip. This is one of the only areas in NZ where you are able to see South Island Saddlebacks and other friendly native South Island birds that can be photographed with relative ease.

Orchids will also be seen growing on the banks above the main track (where these wonderful birds are found) that winds up the side of the island to its summit where there is a large rock cairn to Captain Cook. The Island is now an important bird reserve, it is where Captain Cook hoisted the Union Jack to sign New Zealand over to the Crown and across the water to the west is Ship Cove where one can see the white Cook Memorial standing out at sea level amongst the thick dark green beech bush where the Queen Charlotte Walk Way starts.



The orchids at Motuara that were in flower at the time when I visited were *Pterostylis*—there were numerous plants growing on the dry banks on the island that had been farmed years ago and is now covered with a second growth Manuka forest teeming with Native Birds and an ideal home for orchids waiting to be found each spring .

In the summer months orchids will be found in most bays, one can never tell what you may find these days due to the large amount of



forest regrowth and even on the dry hills of Arapawa Island’s western side these hardy plants are there too. In one bay a group of white *Thelymitra* was found growing and flowering on a dry rocky point about four metres above high water—their flowers spreading their delicate petals in the western sun on a warm hot morning as the shadow of the Island disappears from behind the plants as the sun rises. Close to these plants several other quite uncommon native plants are seen; one is the Renga lily (not common in the wild) and the Native Linen Flax—its beautiful white flowers dancing in the breeze. They are both worthy of a photograph in their coastal home.

The trip home through the Sounds is usually a time when you will see seals resting on the rocks along the coast and maybe some Dolphins or Killer Whales will appear from out of the blue. Then all of a sudden you are back at the Picton wharf discharging from the Water Taxi ready to depart after a great day exploring one of New Zealand’s forgotten places.

A letter to the editor

It was interesting to see Eric's article about *Chiloglottis* at Waiuku and elsewhere. It was particularly good in that some of the range of calli variation in New Zealand was illustrated in the article.

The only difficulties that I have in the article are:

- 1) Eric's use of cotyledons for what I assume are the leaves of vegetative/juvenile plants and;
- 2) This quote "**Note:** Dr Dariusz Szlachetko introduced the genus *Simpliglottis* for the mobile labellum form, in Australia, to distinguish it from fixed labellum *Chiloglottis*, which we have in NZ." I know that this is a comment that Eric has made on occasion but it is simply wrong.

If you look at *Genera et Species Orchidaliium 1*. Dariusz L. Szlachetko *Polish Botanical Journal* 46 (1): 11–26, 2001, you find

"7. *Simpliglottis* Szlach., gen. nov.

Genus a subtribus Chiloglottidinae pertinens. A cognato genero Chiloglottis forma labelli recedit. Labellum sessile vel subsessile, late ovatum vel cordatum basi latissimum, callo directo non insectiformi obtectum"

(Translation) *Simpliglottis* Szlach., gen. nov.

A genus belonging to subtribe Chiloglottidinae. It is removed from *Chiloglottis* due to the form of the labellum. The labellum is sessile or nearly so, broadly ovate to cordate, broadest at the base, not covered with insectiform calli.*

Hence the etymology, per Szlachetko, *Simplici* (Latin: simple) *glottos* (Greek: tongue) referring to "the presence of rather simple callus on the lip surface".

David Jones, in *Native Orchids of Australia* (2006), states that the genus is "distinguished by... delicately hinged broad labellum and callus glands that are mostly column-shaped" and also mentions elsewhere that "[t]he heart-shaped labellum is delicately hinged and in most spp. can vibrate or tremble in a breeze." This condition applies to most of the *Simpliglottis* species.

According to Colin Bower, "[t]he results of many scientific studies indicate that all but one of the 30 or so species of [the] *Chiloglottis* [complex] are pollinated by sexually deceived, male thynnine wasps. The exception is the autogamous [*S.*] *cornuta*." (*General Orchidacearum* 2, 2001). Obligate autogamy in *S. cornuta* may well be the source of the variation in lip mobility and callus arrangement as there is no selective pressure to match a specific pollinator.

Also of interest, in the same article, Bower notes that "[f]acultative autogamy has been observed in [*S.*] *valida* in New Zealand and Australia ... [in] only a small proportion of individuals" and posits that "[t]he long-term survival of [*S.*] *valida* in New Zealand may depend on both vegetative reproduction through tuber multiplication and the development of autogamy".

On another note *Genera Orchidacearum 6* is due to be published early next year and it seems from the scuttlebutt that the Australasian dendrobium segregate genera will almost all go back into *Dendrobium* s.l. and it seems that this will include *Winika*.

David McConachie.

*may be a little crude, pieced together from remembered schoolboy Latin, Stearn's *Botanical Latin* and "Google Translate"—DMC

Notes &c

An Australian collector would like to buy the following: if you would like to sell your copy please contact Judith Tyler (bandj.tyler@xtra.co.nz).

1. Management of Native Orchids Lake Ohia 1993 B.Molloy
2. Colour Field Guide to the Native Orchids of New Zealand 1st Edition.
3. The Hookers on the New Zealand Orchids
4. Orchids in the *Transcations* Part 1.
5. Orchids in the *Transcations* Part 2.
6. Miscellaneous early writing on the New Zealand Orchids Part 1
7. Ditto Part 2
8. Field Guide to the Orchids of NZ 1st ed.
9. Field Guide to the Orchids of NZ Revised Edition.

On 23 September Cheryl Dawson was “very excited to-day to come across this orchid that neither Marilyn or I had seen before: sounds like *Nematoceras* ‘triwhite’. Some had a maroon stripe on the top and also on the inside on the other side of the track they were all pale green.... We came across these on the Apiti track in the Ruahine Park at the end of Ngamoko Norsewood only about 45–60min walk from the car-park.”



The New Zealand Native Orchid Journal

The main aim of the **New Zealand Native Orchid Group** is informing people about native orchids, so we permit others to copy material published here, provided the source and author are acknowledged. Authors should note this as a condition of acceptance of their work. The *Journal* is normally published quarterly from February, and deadline for copy is the first of the month beforehand. We like copy to be typed or sent on disk or by email.

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Books and publications: Brian Tyler, 4 Byrd St, Levin, bandj.tyler@xtra.co.nz.

Webmaster: Michael Pratt, www.nativeorchids.co.nz, Michael@nativeorchids.co.nz.

The website publishes journals six months after original publication.

Editor: Ian St George, 32 Hawkestone St, Thorndon, Wellington 6011 istge@yahoo.co.nz.

THE EDITOR and EDITORIAL BOARD MAY NOT SHARE AUTHORS' OPINIONS .

Tricia Aspin “thought you may be interested in seeing a few pics taken during our recent trip to France. Those attached (1–4) were on the roadside as we walked around Chateau Gaillard (ruins of Richard the Lionheart’s castle) above the Seine at Les Anderleys....



The fragrant orchid,
Gymnadenia conopsea



Bee orchid,
Ophrys apifera



Dark red helleborine,
Epipactis atrorubens



Billygoat orchid,
Himantoglossum hircinum



The early purple was prolific on the Col d'Aubisque in the Pyenees but it was quite hard to get a picture as the road is so narrow and winding with few places to stop—I had to be content with many an ooh and aah out the window. The spotted orchid was common in the mountains and this was taken in the Cirque de Garvanie. The greater butterfly orchid was common there too.”



Above left: Greater butterfly orchid, *Platanthera chlorantha*.
Left: Early purple orchid, *Orchis mascula*.
Above right: Spotted orchid, *Dactylorhiza fuchsii*.



You can look at specimens of NZ orchids held in the Herbarium at the Royal Botanic Gardens at Kew thus: Google RBG KEW—click DATA-BASES AND PUBLICATIONS—under Kew Databases click HERBARIUM CATALOGUE—type the name you want in the SEARCH box. Or go to <http://apps.kew.org/herbcat/navigator.do>.

Australian notes

David McConachie

When the NZ Native Orchid Group (NZNOG) was first formed a decision was made not to affiliate with any organization and to remain neutral (Gordon Sylvester 2012 NZNOJ123 pg.6). This initially meant no affiliation with the Orchid Council of New Zealand (OCNZ). This decision was also taken as applying to the Australasian Native Orchid Society (ANOS Inc).

Ian St George was, as Editor and Chair of the NZNOG, instrumental in beginning an association with Australian native orchid groups. Initially it was with editors of other ANOS Group newsletters and this led to an association with ANOS Inc itself. At times there has been confusion in the relationship with ANOS Inc. In part this was due to confusion in Australia between the NZNOG and the short-lived ANOS NZ Group and in part due to confusion here about what ANOS Inc was and did.

Prior to becoming Chair of the NZNOG I took on the role of ANOS Inc liaison person on the committee, and it is a role that I have continued with. Principally it has involved reading through other ANOS Groups' magazines and collating articles that might be of interest to NZNOG members, for inclusion in the *Australian Notes* section of the NZNOG Journal.

ANOS Inc. is 50 years old this year and one of the things that it has been doing is publishing *The Orchadian*. Over the past 20 years the journal has included a number of articles with direct impact on us, with David Jones, Mark Clements and Brian Molloy changing generic names and naming new species found here.

Recently, Phil Ritchie (an ANOS Inc Councilor from Victoria) and I have had discussions concerning improving links between ANOS Inc and the NZ Native Orchid Group.

Below is an article from Phil Ritchie about ANOS Inc.

ANOS Inc.—composition, role and functions of the national body

ANOS Inc was formed in 1963 and, while initially a NSW organization, is now increasingly national in its make-up. This year marks its 50th anniversary. Recently, the constitution was revised and gained members' approval at this year's Annual General Meeting held during the 7th ANOS Conference & Show in August. Currently, there are 14 people in the management group; 8 office bearers and 6 councillors. At next year's AGM (2014) under the new constitution, the number of councillors will drop back to 3 reducing the total number to 11. At the moment, people are from the following areas: WA, NSW, Queensland, Victoria and New Zealand.

The objectives of ANOS Inc are to promote Australian and Australasian species orchids and hybrids, to promote conservation and to promote the science of these orchids and cultural knowledge through publication, conferences and shows, administering a range of special awards and maintaining a system of judging.

However, the question I'm often asked is – But what does ANOS Inc actually do? At the moment, there are a number of activities as follows:

Publishing *The Orchadian* which is a national Australasian orchid enthusiasts' publication. While not a scientific journal, it does publish scientific articles which will all be peer reviewed from this point on. It also publishes a wide range of other contributions such as show reports, articles on conservation, culture and particular species or hybrids. All contributions are welcomed and, subject to the normal checks for factual correctness, are normally published as soon as space permits. Everyone is encouraged to submit contributions whether short, long or in-between. E-mail and digital photography have made this process a lot easier than it was in the past. Contributions should be e-mailed to the editor Greg Steenbeeke at orchadian@dodo.com.au. Four issues are published each year.

Maintaining a checklist of Australasian orchid hybrids. An updated version of this publication will appear soon.

Maintaining a system of judging standards appropriate for Australasian orchids and a system for training and accrediting new judges.

To maintain a number of special awards in conjunction with the Orchid Society of NSW (Ira Butler, Bill Murdoch, Hermon Slade and RD Fitzgerald).

To undertake conservation activities. Currently this has a NSW focus, but we would aim to broaden this focus over the coming years.



To undertake special projects as resource permits – one such currently in progress is the compilation of information on the best examples of the *Dendrobium speciosum* complex. It's important that the information people have is documented so that it will all still be there in the years to come.

A number of ideas for further activities have been documented, but at the moment resources aren't there to pursue them. However, we hope that will change over time.

When you subscribe to *The Orchadian* you become a member of ANOS Inc. The subscription rate is \$A60 for New Zealanders with a reduced rate for two years if you are a new subscriber. E-mail the editor, Greg Steenbeeke, for details (refer above). The benefits of ANOS Inc membership are networking opportunities and being able to make a broader contribution to Australasian orchids. Contributions to *The Orchadian* are a key part of this aside from becoming involved in any of the activities mentioned above. Further details are also available on the ANOS Inc website: www.anos.org.au

Should anyone have any further queries then I would be more than happy to help. Equally, please e-mail to me any suggestions or comments you may want to make.

Phil Ritchie 6 The Avenue, Balaclava, VIC 3183 Australia, e-mail: ritchiej@bigpond.com, phone 61 3 9525-9606.

The Western Australian Adopt an Orchid project (ADORP)

by Andrew Brown, George Tiong and Jim Cootes

With an estimated 7000 plant species the south-west corner of Western Australia is globally recognised as one of the planet's major biodiversity hotspots. This recognition of global significance is based on high levels of natural diversity together with high levels of threat to that diversity. It is one of only five Mediterranean-type ecosystems to be listed as globally significant and is one of the few hotspots found in a developed country. The importance of its biodiversity is also recognised by the Government of Australia with five of the 15 national biodiversity hotspots located within the region.

The climate is characterised by winter rains and dry summers. The vegetation is predominantly eucalyptus woodland, mallee heath and shrubland with nearly 70 per cent of the plants endemic to the region. Native plants, including orchids, have evolved over time to adapt to the nutrient-poor, sandy and lateritic soils.

Unfortunately, this corner of Australia has been subject to extensive change which threatens the survival of many unique plant species. Since European settlement in 1829, large areas of land have been cleared for agriculture and urban development. Today, throughout the Wheatbelt Region, over 80% of the natural vegetation has been cleared for agriculture, while many parts of the coastal vegetation between Geraldton and Albany have been cleared to cater for urban expansion and agriculture. The remaining bushland is fragmented and often degraded, being surrounded by grazed areas and cleared pasture, rendering it vulnerable to further human influences. In many areas, stock and feral animals have destroyed habitat by trampling, over-grazing and the introduction of exotic weeds. Clearing of the vegetation in the Wheatbelt has led to rising groundwater levels, resulting in increased soil salinity, destroying the low-lying habitats which are favoured by some plant species.

Terrestrial orchids are particularly susceptible. One of the biggest threats in higher rainfall areas has been the spread of the root-rot fungus *Phytophthora cinnamomi*, commonly known as dieback, which has the potential to kill up to 40 per cent of native plant species. On top of all these problems, global climate change causes uncertain weather conditions and increasing periods of drought which threaten to overturn the delicate balance for survival for many plants.

In the face of these threats it is not surprising that many orchid species considered common up until a few years ago are now much rarer. An example is the grand spider orchid (*Caladenia huegelii*), one of the state's largest and most attractive orchids which was probably once abundant in the mixed *Banksia* and jarrah woodland of the Swan Coastal Plain between Perth and Bunbury but is now restricted to a few mostly small bush remnants, isolated by residential areas and farmland. Other orchid species may have always been naturally rare due to specialised habitat but, following clearing, are now close to extinction. It is possible that some of these may have already disappeared without ever having been discovered.

THREATENED AND PRIORITY FLORA

Under Western Australian legislation, the *Wildlife Conservation Act 1950* provides for the protection of plant and animal species which are under threat of extinction, are rare or are in need of special protection. The term Declared Rare Flora (DRF) is applied to threatened flora and the State Minister for the Environment can declare a species as "Rare Flora" if it fulfils the criteria. Such a plant may not be removed or collected from anywhere (including private land) without the permission of the Minister. As of 6 November 2012, 413 plant taxa, including 39 orchids, are listed as threatened flora. The threats faced by a species are reviewed and prioritised by a scientific panel according to the International Union for Conservation of Nature (IUCN) Red List criteria. Once listed and ranked as either Critically Endangered, Endangered or Vulnerable, resources and expertise are directed to the conservation of the species. The State Department of Parks and Wildlife (DPaW) develops a species-specific plan, called an Interim Recovery Plan (IRP) which identifies the threats faced and recovery actions required. IRPs run for an initial period of five years at the end of which the objective is to either downgrade the threatened status of the species (that is, the plan has been successful) or revise and re-implement the plan for a further five years (further recovery work is required).

While DPaW resources are understandably geared towards conservation of threatened flora, there are still many species which are known from only a few collections or sites, but have not been fully surveyed to assess their conservation status. Such plants may be rare or threatened, but cannot be declared as rare flora until proper assessments have been undertaken. These species are listed by DPaW as Priority Flora. The Western Australian Herbarium's Florabase currently lists 2946 plant taxa, including 56 orchids, as Priority Flora. Priority flora are ranked in five categories.

Priority one taxa are poorly known species, known from one or a few collections or sight records, on lands not managed for conservation and under immediate threat of habitat destruction or degradation.

Priority two taxa are those known from one or a few collections, some of which are on lands not under imminent threat.

Priority three taxa are those known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat.

Priority four taxa are adequately known and include (a) rare taxa which have been adequately surveyed, or for which sufficient knowledge is available, and are considered not currently

threatened or in need of special protection, but could be if circumstances change; (b) near threatened taxa which have been adequately surveyed and that do not qualify for Conservation Dependent status, but that are close to qualifying for Vulnerable; or (c) taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Priority five taxa include conservation dependent taxa that are not threatened but are subject to a specific conservation program, the cessation of which would result in the taxa becoming threatened within five years.

THE ADORP PROJECT

The task of protecting such a large number of threatened and priority flora is huge. In view of the limited resources available to the DPaW, which is necessarily focussed on implementing recovery programs for threatened plants, it is unsurprising that less time and effort is available for the 56 priority orchid species. Nevertheless, the need for help in assessing the conservation status of these priority orchids has been recognised and the DPaW duly undertook to collaborate with volunteers of the Western Australian Native Orchid Study and Conservation Group (WANOSCG) to obtain better and up-to-date population, threat and survey information. In 2011, the *Adopt an Orchid Project* (ADORP) began, with groups of volunteers adopting a species or group of species to undertake monitoring and surveys. The project covers priority one to priority three taxa, that is, those species with very little information or that are possibly most at risk.

Nominated DPaW and WANOSCG co-ordinators, in cooperation with DPaW regional staff, oversee the project by managing small groups of volunteers (no more than 6 individuals per group) who have the task of collecting information for their adopted orchid species. Prior to registration, group members agree to adhere to ADORP and DPaW protocols and guidelines, agree to provide report forms on a quarterly basis, and to contact the DPaW District Flora Officer who will help plan the trip(s) and discuss hygiene matters and precautions when entering sensitive (dieback) areas. Following registration, each group or individual is provided with an information pack which contains: a general introduction to the project, Threatened and Priority Report Forms and the field manual, contact details for the DPaW District Officer, information on identifying the orchid(s), including photographs, descriptions, life cycle information (flowering time, fruiting), known locations of the species, type(s) of habitat to survey, and threats to the plants to be identified. At each site, the group fills out a Threatened and Priority Report Form with precise co-ordinates of the location, information on the number of flowering, vegetative and fruiting plants, associated plant species (if known), habitat details, and threats observed. Digital images are taken of the site and each orchid plant (to aid confirmation of identification) and any threats that are observed. All sites are surveyed and reported, regardless of success or failure in locating the orchid. The reports, images and additional information are sent to the WANOSCG co-ordinator, who then forwards them to the DPaW co-ordinator for distribution to the DPaW staff and entry in the Threatened and Priority Flora database. The DPaW staff review the information and implement recovery actions where possible.

When the project began in 2011, there were 21 participants in 10 ADORP groups covering 11 species. At last count, there are 58 participants in 22 groups covering 29 species, stretching from Kalbarri in the north of the region to Esperance in the south-east. In the two years that the project has been running, over a hundred priority orchid populations have been monitored and a number of new populations have been located.

Examples of two orchids covered by the project are Crystal Brook star orchid (*Thelymitra magnifica*) and Lake Muir blood spider orchid (*Caladenia erythrochila*). To give you a feel for the type of information typically gathered by ADORP volunteers, an update on their current status is as follows:

CRYSTAL BROOK STAR ORCHID (*THELYMITRA MAGNIFICA*)

Crystal Brook star orchid is a striking species which produces 10 to 35cm tall flower spikes, each carrying two to 10 red/brown flowers 3 to 6cm wide that are often marked with yellow. The species flowers between late September and mid-October over a small area along the western edge of the Darling Scarp east of Perth. Named by Jeff Jeanes in 2006 from specimens he collected at Crystal Brook in October 2000 the name *magnifica* alludes to the orchids' noble, eminent, stately, splendid appearance. The species bears a high degree of similarity to star orchid (*Thelymitra stellata*) which is distinguished by its slightly later flowering period (late October near Perth), slightly smaller, less open flowers, less pronounced apical projection to its column and its preference for lateritic, rather than granitic soils.

Sun orchids are divided into several complexes of related species with Crystal Brook star orchid one of seven species in the *Thelymitra fuscolutea* complex.

Members of this group are characterised by their yellow to red brown flowers (with or without blotches) and their broad flattened leaves which are often found in clumps.



Crystal Brook star orchid usually occurs in the vicinity of white gums (*Eucalyptus wandoo*), often in dense heath next to Balga (*Xanthorrhoea preissii*) and two-leaved hakea (*Hakea trifurcata*). The orchid often grows below granite outcrops or on sloping granitic soils.

2011 and 2012 ADORP survey

In 2011 nine sites were monitored by volunteers Jay and Bob Steer with five sites, when combined, yielding 76 flower spikes on 53 plants. Only one plant set seed in 2011. Twelve sites were surveyed in 2012, the same nine sites as in 2011 plus three additional sites. In 2012, flowering plants were only found in four of the sites surveyed in 2011 (62 flower spikes on 49 plants). In one site there was a dramatic fall in the number of flowering plants from 30 to five while the number of flowering plants at another site increased from 10 to 17. A new subpopulation of Crystal Brook star orchid was found, increasing the number of flowering plants known at that site from three to 19. Like 2011 just one plant set seed in 2012.

Threats to the survival of Crystal Brook star orchid

Recruitment of new plants in known Crystal Brook star orchid sites is unknown. However, based on the very limited data collected in the dry years of 2011 and 2012, recruitment is likely to be low since there appears to be little seed set. Failure to set seed could be due to loss of pollinators and/or changed climatic conditions.

All sites of Crystal Brook star orchid are under threat due to their close proximity to the Perth Metropolitan area. People and orchids often have conflicting needs. Much of the former Crystal Brook star orchid habitat in the Darling Range has been lost to quarries and residential development, and a variety of current human activities which threaten existing orchid sites.

For example, clearing and unplanned fires (particularly arson) close to known Crystal Brook star orchid sites have increased the likelihood of weed infestation. Fuel reduction burns during winter and early spring at a time that is safest to nearby residential areas coincides with the growing, flowering and seed set of Crystal Brook star orchid and are likely to be detrimental to the orchids survival. Inappropriate recreational uses of bush reserves, including trampling and erosion caused by off road vehicles (bicycles, motorbikes and cars), also impacts on orchid habitat. Grazing by rabbits and kangaroos is also a problem.

This raft of negative environmental factors together with the trend towards a dryer climate, suggest that this magnificent orchid may struggle to survive if its remaining habitat is not closely managed.

LAKE MUIR BLOOD SPIDER ORCHID (*CALADENIA ERYTHROCHILA*)

Lake Muir blood spider orchid is a rare species with up to two small, blood-red flowers 50 to 60mm across. Flowers are distinguished by their long, wispy petals and sepals and small, blood-red, often white marked labellum. The orchid was first recognized as new by the late Harry Winfield and formally named in 2001 by Stephen Hopper and Andrew Brown from specimens collected north of Lake Muir by Bill Jackson in October 1995.

As indicated by its common name this species is mostly found near Lake Muir between Manjimup and Mt Barker. Habitat near Lake Muir is jarrah (*Eucalyptus marginata*) woodland on low lateritic hills.

2012 ADORP survey

In 2012 the three previously known sites of Lake Muir blood spider orchid were visited by volunteers Phillip and Pamela Hill, with 98 plants comprising 67 in flower, 30 with leaves only and one in bud found at one site and eight plants comprising seven in flower and one leaf only found at a second site. The original known site of Lake Muir blood spider orchid revealed no plants during the survey.

A further two sites visited by Phillip and Pamela included a tentatively recorded site for the species 53 kilometres from the previously known populations near Lake Muir. This site was initially dismissed as it was thought to have been an incorrect identification, given the habitat was quite different to that of known populations. The initial visit to the site in 2012 did nothing to dispel that assumption as no plants were found. However, this view may be revised following a confirmed plant being found by other searchers in habitat that was not that dissimilar. This second new site is located approximately 70km from the area of the previously known Lake Muir populations. The timing of their visit precluded Phillip and Pamela from seeing the target orchid in flower on this occasion but did allow them to compare that habitat in relation to what is considered as “normal” for the orchid.

During the surveys only nine plants were found to have developed seed capsules, this equating to 8.41% of the 106 plants located or 12.15% of the 74 flowering plants seen. All nine plants in seed were found at the one site.

One of the problems with finding the orchid is the small window of opportunity to see it in full flower which may be due to the very poor rainfall experienced in the region in the previous two years. It has been noted by Phillip and Pamela and the local DPaW officer that flowers are only



present in a visible healthy state for a few days before rapidly deteriorating. The period 26 September to 1 October 2012 was an example of this with the orchid in good flower on the 26th September, about 70% in fair flower on the 29th September but most severely wilted by the 1st October.

Threats to the survival of Lake Muir blood spider orchid

Threats to Lake Muir blood spider orchid include unseasonal fire, grazing from native animals and trampling of habitat by over eager enthusiasts searching for the orchid.

Having now undertaken an initial study of Lake Muir blood spider orchid Phillip and Pamela feel more confident of potentially finding more plants in 2013 given sufficient rainfall.

SUMMARY

The ADORP project is proving to be a very important source of data on otherwise poorly known orchid species which enables the DPaW to better understand their conservation status and undertake any corrective or recovery actions as appropriate. For the participants, the experience has been fun and rewarding, by seeing rare orchids in the wild and working as a team with other dedicated orchid enthusiasts and conservationists. This collaborative program is immensely valuable, enabling the public to make significant contributions to conservation efforts in partnership with government, which ultimately benefits the entire community.

ACKNOWLEDGEMENTS

We would like to acknowledge and thank Kim Hanson, the WANOSCG co-ordinator and an instigator of ADORP who has put tireless hours into the project, and all the ADORP volunteers who have put their valuable time and energy into this worthwhile cause.

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The Column Eric Scanlen

Caladenia minor family

The identity of *C. minor* s.s. was established fairly conclusively by the Column in “*Caladenia minor* identity”, J129. But there were 10-13 others with the toothed midlobe when the Column scrolled through his own slides and images received from Tricia Aspin, Gael Donaghy, Allan Ducker, Mike Lusk, Kevin Matthews, Mark Moorhouse, Pam Shearer, Kelly Rennell, Ian St George and Georgina Upson. Many thanks to these indomitable orchid hunters.

Caladenia minor look-alikes, all having their midlobe margins wholly toothed—glandular to J.D. Hooker—are here laid out to display the Column’s complete list clearly along with salient identifiers, both for interested NOG members and for his own reference. Most taxa are either single or double flowered although there are exceptions as detailed. *Stegostyla atradenia* almost made it into the family because of its extensive marginal calli but the naked tip to the midlobe, as drawn by Bruce Irwin, effectively excluded it. Three taxa appended, await more specimens before being accepted but the first ten here are reasonably well established:—

C. minor, Fig. A, by Allan Ducker; red ovary with three green strips (similar to *C. bartlettii*), both stem and floral bract are red also the dorsal sepal is spread with sessile red glands. Other tepals have bands of sessile red glands along the outer midribs. Mark Clements designated this specimen [1] from Hooker’s type sheet, although a South Island, robust *C. “green stem”* remains a remote possibility when comparing live specimens with Mark’s designation. Plants are generally well separated. Habitat elevation is from sea level to 620m near its maximum, on Brunner Peninsula, St Arnaud. Peak flowering time at Waikumete, ER9, was 6 Nov 2012.

C. “green stem”, Fig. A, by Allan Ducker, here tagged belatedly, after close study by Allan at Waikumete, clarified differences other than the well-known stem colour. *C. minor* generally has similar but larger flowers. *C. “green stem”* forms small colonies and goes to higher altitudes—



sea level to 1,240m on Waitonga Falls Track, Ruapehu—and more southerly sites to Lake Hauroko and maybe further south. It has all-green, ovary, stem and floral bract, sessile red glands to the tepals, much as in *C. minor* but usually less dense. It had been lumped with *C. minor* (CFG3) until now but is more slender and peak flowering time is 7 to 10 days later in sites where both occur, 16 Nov 2012 at Waikumete but flowering times can overlap. Flowers stay open for only 3 to 5 days for both. Hybrids are rare indicating either distinct pollinators or perhaps due to genetic differences.



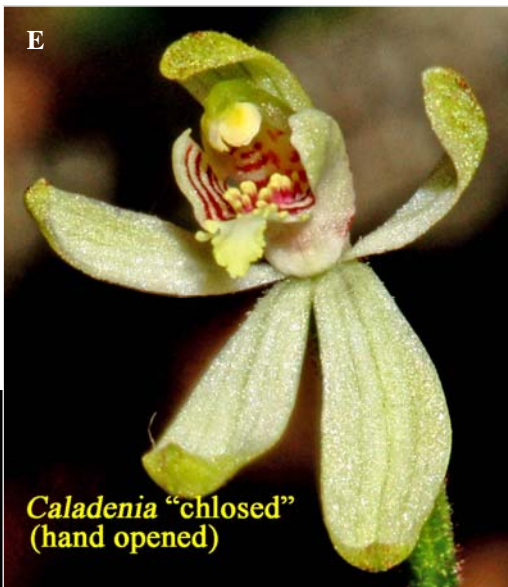
C. nothofagei Fig. B, may originally have been an alba form of *C. minor* but, if so, it has established a distinct southerly distribution. No sessile glands, red or otherwise, to the tepals nor any red bars to the labellum although faint pink bars appear at Lake Hauroko, ER72. The column top is green and all calli have yellow tips. Stem, floral bract and ovary are all green. Flowering time coincided with *C. minor* at Brunner Peninsula, ER49, on 22 Dec. 2002.

C. chlorostyla, Fig. C, green ovary, stem, floral bract, column and tepal backs but occasionally with a few sessile red glands on the bud. Red barred labellum and inner column. Peak flowering at Waikumete was 21 Nov 2012 being 15 days later than *C. minor* at this site. The Column has not yet found *C. chlorostyla* in flower with either *C. minor* or *C. "green stem"* on any of many field trips, due no doubt to its later flowering.



C. "Kaweka", Fig. D, similar to *C. chlorostyla*, by Mike Lusk from the Kuripapango area in the Kawekas, has a bright red labellum disc. It flowers in late February, three months after *C. chlorostyla* s.s.

C. “chlosed”, (a contraction of chlorostyla closed) **Fig. E**, of Kevin Matthews’ from the Herekino Range, ER5, on 1 Nov 2009. It does not open naturally, however, when prised open carefully, as in Kevin’s pic, it has those hooked tepals which normally keep it closed, but otherwise it is close to *C. chlorostyla* internally. It may be cross pollinated by tiny insects like aphids and/or *Thrips* which can enter closed flowers. See Kevin’s **Fig. F**, where a winged aphid is tending her two nymphs. Did they hatch from eggs laid within the bud?

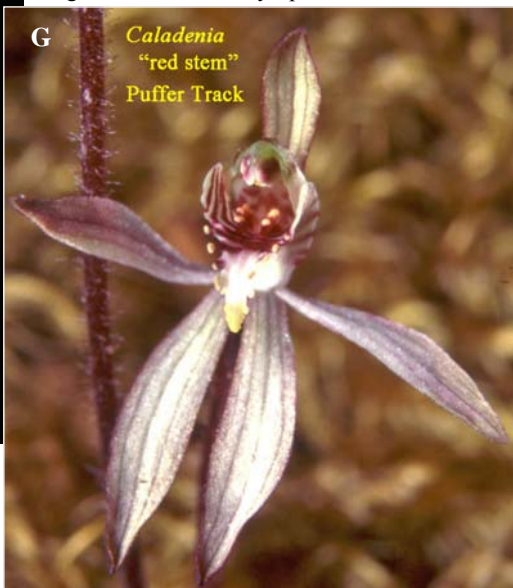


Caladenia “chlosed” aphid & nymphs



(J128:3 as *C. aff. chlorostyla*). Tepals are acuminate and tepal backs are heavily red glanded giving an all red bud.

C. “red stem”, **Fig. G**, of Gordon Sylvester’s (J39:12) has all dark-red, stem, ovary and floral bract. It has 2 to 4 flowers at the Puffer Track but single flowers at Bealey Spur and Arthur’s Pass



C. “green stem X *minor*”(?) Fig. H, from Pam Shearer, Albany Scenic Reserve on 18 Nov 2011 and from Kevin Matthews, at Hackney Matthews’ place, Kaitaia, in early Nov 2006. It has a green stem and floral bract with red-striped, green ovary, the reverse coloration of *C. minor*. Kevin had specimens with one leaf plus 1 to 3 flowers and specimens with two leaves plus 3 to 4 flowers. This may be a rare taxon or recurring hybrid but requires urgent follow-up. The twin leaved form could be a mutation but it will be interesting to see if it breeds true. Labellum side-lobes are further apart than in *C. minor* otherwise flowers are difficult to tell apart.



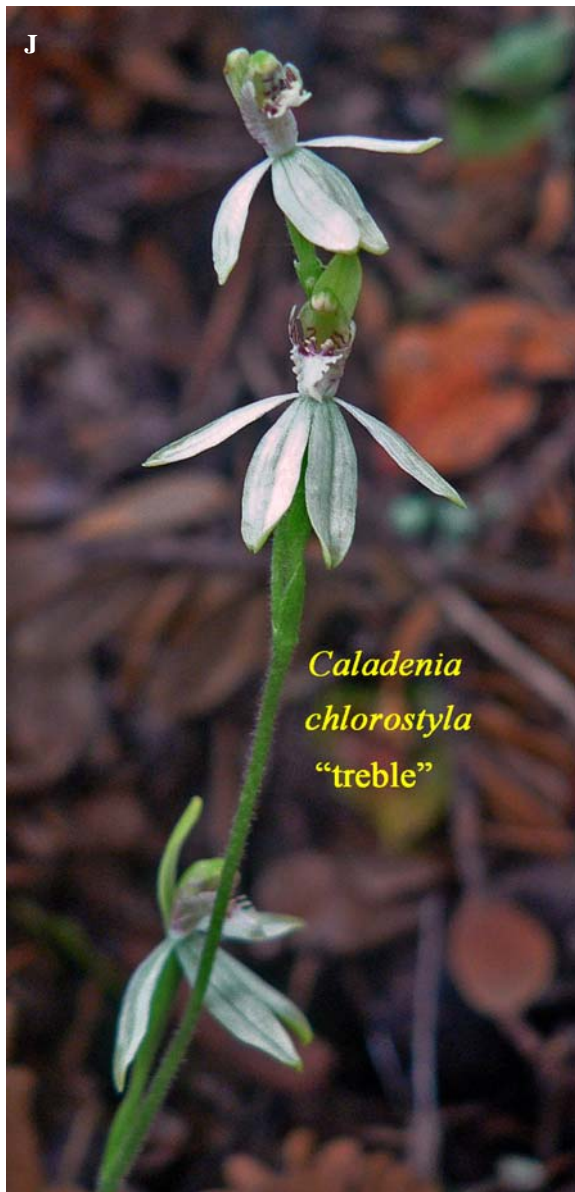
H

Stegostyla “minor” Fig. I of Mark Moorhouse’s from Georgina Upson, was first reported by Mark in N/L 6:3 of June 1983. Flower size is intermediate between the larger *Stegostyla* and smaller *Caladenia*. The non *Caladenia* trait of two rows of pale calli atop the midlobe put it firmly into the *Stegostyla* genus. Some variation within the taxon occurs in stem colour and spread of sessile red gland on the tepals. Mark first reported it from Big Bush State Forest (before the taxon was obliterated there), then Baton Valley, Nelson (J95:15,31) and Georgina Upson got it at Mt Jones (J115:16) in a breeding colony.



I

C. chlorostyla “treble”, Fig. J, of Tricia Aspin’s is common around the Awhitu Peninsula, ER9. One to three flowered but a fourth flower has arisen from the third flower’s floral bract, several times at Kemp Road (see J99:22). Flowering is mid-to-late November.



Colour and flowering time as identifying traits

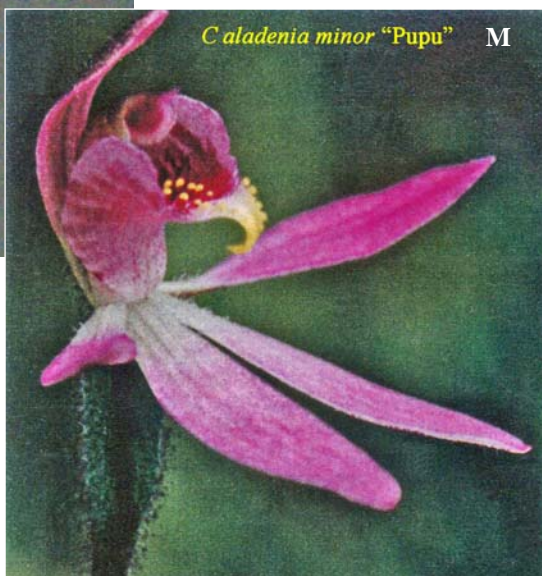
Traditionally, colour was neglected as a morphological ID trait because herbarium specimens went either brown when pressed or white in spirits. Flowering time and other important traits such as pollinator, perfume etc. which were not present in preserved specimen, were also downplayed as unhelpful in identification. Subsequently, these non-apparent traits in preserved specimens, often became neglected in botanical tradition which can persist illogically into 2013. However, colour photography, onwards from the 1950s, now allows identification from persistent colour patterns. Flowering times etc. of genetic origin are also a significant guide to ID. But beware, colour traits have to be consistent and don’t include nursery hybrids such as seen in exotic orchids or pansies etc. Stem, ovary and floral bract colour are used extensively herein without apology, being the most easily recognisable trait in several cases. Other traits have been seriously researched as detailed in the foregoing. Certainly chromosome and DNA analyses would be useful further identifiers if the country could afford such expense on the intriguing but commercially questionable NZ orchids.

In addition and awaiting any further examples—

C. minor “late” Fig. K, of Kevin Matthews from Uncle Hackney’s Kaitaia place, two to three months late for the far north, on 14 Jan 2008. It has very thin green strips up the red ovary similar to South Island specimens of *C. minor*.



C. minor “pink” Fig. L, of Georgina Upson’s from Baton Valley, seems to justify J.D. Hooker’s “pink” description but his original *C. minor* came from the north including all the *Caladenias* there, many of which are pink to red.



C. minor “Pupu” Fig. M, by Gael Donaghy (J75:11,36) may be a hybrid. It has the ovary and toothed midlobe of *C. minor* but the obtuse lateral petals and colour of *C. bartlettii*. Graeme Jane and Gael have sought this one several times along the Pupu Walkway, ER47, over the last 13 years (pers. comm.) without seeing other like specimens.

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The type locality: Ian St George.

3 *Pterostylis irsoniana* Hatch, Mt Taranaki.

Original papers

7 Marlborough Sounds orchids. Graham Randle.

A letter to the editor

9 David McConachie.

Notes &c.

10 NZ orchid books wanted. Cheryl Dawson finds a white *Nematoceras* in the Ruahine. Information for authors.

11 Tricia Aspin photographs some French orchids.

12 Accessing NZ orchid specimens at Kew online.

Aussie notes: David McConachie

13 The Australasian Native Orchid Society. Phil Ritchie.

15 The Western Australian Adopt an Orchid project (ADORP).

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22 *Caladenia minor* family.

