The New Zealand Native Orchid Journal

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No. 132

Winika cunninghamii: Flowers from separate plants intermingled on an old kowhai by the lower oxidation pond at Waikaremoana. Mike Lusk

The Hatch Medal 2014

Call for nominations

This medal was struck in 2009 in memory of E.D. "Dan" Hatch and his orchid work. It is awarded annually to a person who has made an outstanding contribution to New Zealand orchidology, as outlined in the Group's aims.
This person can be nominated by any member of the Group and if there is more than one nomination, be determined by the Executive.

The first recipient of the Medal was Ian St George in recognition of his tireless work on the Journal and Historical Series, as well as the many years as chair of the Group.

In 2010 the Medal went to Bruce Irwin in recognition of the many decades he has spent illustrating New Zealand's native orchids as well as other plants and the knowledge arising from his observations that he has freely shared.

The 2011 Medal was awarded to Dr Brian Molloy, New Zealand's premier orchidologist, who has described more new species than anyone before him.

The 2012 Medal went to Eric Scanlen for his outstanding orchid photography and writing and for his work for the Group.

Michael Pratt was the 2013 recipient for his excellent work developing and maintaining the Native Orchids website which is our shop window for the world.

Who will be the 2014 recipient?

Nominations close 1 September 2014

Contact David McConachie, Chair NZNOG, 42 Titiro Moana Rd, Korokoro, Lower Hutt, 5012: pleione@orcon.net.nz

Guest editorial: Mark Moorhouse

A REVIEW of *Pterostylis australis* Hook. fil. Fl. NZ 1, 1853, p. 248.

Languishing at home in recovery mode from a shoulder operation gave me time to re-read all the old NZNOG journals which I have from #1 newsletter on and also spend time on internet research. Sometimes we forget just how much useful work has been already done on our species and much of it published in the pages of our journal. Because it is disjunct being spread across many different issues it doesn't hurt, from time to time to revisit our state of knowledge of each species and assemble that into one article. *Pterostylis australis*, one of my own local species has always presented me with some enigmas so I chose it to write a review.

From the outset it became evident that we are all in agreement on one point, that is, that what we currently lump together under the umbrella of *Pterostylis australis* needs some work done on it to sort it out. Concepts of this species vary widely within the group of orchid enthusiasts we call NZNOG and also among respected botanists during the last two centuries. That same thought, of a poorly understood species, was voiced by Dr Lucy Moore when she wrote our last botanist's orchid bible, *Flora of New Zealand* Vol 2. some 43 years ago, and no-one has fully taken up the cudgels to fulfil that need to clarify our understanding, though many have written articles and published images which have increased our knowledge of the plant. Jasmine Janes and her associates considered the whole *Pterostylis* genus to be in "taxonomic confusion".[1]

Dr Moore stated that in her opinion there was perhaps a need to retain *P. australis*. What she alluded to here was that her inclination to lump *P. australis* with *P. banksii* was restrained by the "often very large Fiordland plant," which she held could be the key to a valid separate species under Hooker's epithet.

What had inspired her to such a line of "lumping" reasoning? The presence of a number of plants throughout the Northern half of the South Island and extending into the North Is, which had flowers that were similar to Hooker's *P. australis*, but which showed a huge variation of foliage forms, galea shapes, and general sizes and also demonstrated close affinities to *P. banksii*. The classic botanist's escape clause, "a very variable species" was brought into play, and the result was that almost all *australis*-like plants have been filed into the same bin ever since publication of *Flora* Vol 2. This had a profound effect on those who followed Moore, and held due respect for her opinions.

It is worth noting that several more recent authors of books on New Zealand orchids could not agree in their descriptions of *P. australis* either, some basing their descriptions on Hooker's *Flora*, some on L.B. Moore's *Flora of NZ* II and others on personal concepts and studies, combined with "accepted authorities" like Hooker, Cheeseman, Hatch, Jones, etc. [Chart 1] Conflicts include leaf descriptions. Long synsepalum apices or short? Unevenly constricted labellum or not? Labellum colour. Stigma shape, and a number of other minor details.

For this reason, any treatise on the subject needs to start again and define clearly the exact description of the species as named in 1853 by returning to the original specimen sheet and the original written description by J.D. Hooker who propounded the species based on specimens sent from southern New Zealand. Fresh specimens examined at the type locality have helped clarify details lost in pressing and over-

Pterostylis australis	**Hooker's Flora of NZ**	**E. D. Hatch Transactions Vol 77**	**Flora 2 L B Moore**	**Field G. NZ Orchids St George, Irwin, Hatch**	**Cooper, Field Guide to NZ Native Orchids**	**Native Orchids of NZ Molloy & Johns**
Leaves	Narrow linear oblong. Sheathing the stem. Reticulated by veins Clearly acuminate Leaves shorter & broader than banksii Not keeled	1-6 narrow to broad-linear, acuminate, up to 10 cm long x 2cm broad Floral bract is foliaceous	4-5 mostly elliptic at bottom, changing to almost grasslike.0 – 2 overtopping galea. 4-15 X 1-1.6 cm. Lowest subsessile of with winged petiole 2.5-3.5-[4.5] cm tall.	Resembling banksii and areolata but shorter and broader leaves esp. at base	4 -5 leaves usually shorter & broader than banksii with no keel	Longer than areolata, more grass like, broad blade rosette merging into shorter narrower leaves on flowering stems
Perianth, Dorsal	20-25 mm long Erect at base then suddenly curved downwards	Up to 3 cm high. Rather narrow. Dorsal shartly caudate, longer than petals. Tip horizontal or sub-erect	Smoothly arcuate but sometimes erect then horizontal, acuminate to shortly caudate	Much shorter dorsal sepal than banksii	2-4 cm tall	Hood has a short straight point
Lateral Sepals [Synsepalum]	Subulate, erect tips Awlshaped tapering to fine tips. Upper sepals with long acuminate points	Shortly caudate Hardly exceeding galea	Diverge at narrow angle. Tips long, acuminate to caudate. Sometimes considerably overtopping galea or bent backwards strongly	Lateral sepals long & spreading widely	Long tips to lateral sepals	Flower has long tails that stand well above the hood
Labellum	Linear for a distance then narrowed, clawed, as in banksii but appendix shorter Appendage only shortly curved, apex with brush-like tuft	Linear-oblong, pale red Tip unevenly constricted	Lanceolate-oblong. Little arched, broad to the middle then narrowing	Tip arched. Tip drawn arching sharply deflexed to pinched in & emarginate	Broad labellum narrows to a blunt tip which has pinched in margins and is deflexed	[Picture shows] Broad labellum slightly deflexed at tip, Black.
Petals	The highest point of each petal is decurved for a distance beyond the mid-point and acuminate	Shorter than dorsal	Shorter than dorsal acute or acuminate	Petals drawn acuminate	---	---
Column	---	Typical [erect or inclined, free or partly adnate to column] Stigma elliptical Column wings with Acuminate upper lobes Lower lobes rounded, Narrow-oblong	As tall as labellum. Stigma a long oval and as broad as column, sts. Overlapped by wings from above	Stigma drawn as wide as column and elongated	---	---

looked by Hooker, who was, at the time faced with describing a large, constant flow of species pouring in from the antipodes.

Dr B.P.J. Molloy had begun this work by 1991, and on 5 October that year, after discovering *P. australis* on a specimen sheet at Kew [Fig.1 in "The Type locality", this issue] which until then had no designated lectotype specimen of *P. australis*; he then nominated specimen (a) as one and also nominated a lectoparatype specimen (b). It appears originally the sheet was considered only to contain specimens of *P. banksii* but with the introduction of *P. australis* the two wide-leafed specimens were singled out.

Others too have also published short articles, [2] and longer ones—eg, Jones & Clements [3] and Janes [1] the latter both being published works which allude to the phylogenetic affinities of *P. australis,* establishing a modern base from which to build.

"The Type locality" in this issue covers historical details, Hooker's works, etc and returns us to one of the original collection sites of *P. australis*.

References

1. Australian systematic Botany 23 p. 248 Janes, Steane, Vaillancourt & Duretto.

2. Notably NZNOG Journal 70.

3. Australian Orchid research Vol 4 pp 3-168 David Jones & Mark Clements.

The New Zealand Native Orchid Group

New Zealand Native Orchid Group's main aim is informing people about native orchids, so we permit others to copy material published here, provided the source and author are acknowledged. The *Journal* is published quarterly from February, and deadline for copy is the first of the month beforehand. We like copy to be typed or sent by email.

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WE MAY NOT SHARE
AUTHORS' OPINIONS .

The type locality: Ian St George

Pterostylis australis from Deas Cove, Thompson Sound

Description

JD Hooker described *Pterostylis australis* in Flora Novae-Zelandiae in 1853 [1],

> 2. Pterostylis *australis*, Hook. fil.; caule foliato, foliis anguste lineari-oblongis planis acuminatis, scapo ultra folia elongato, flore erecto, sepalis lateralibus subulatis erectis, supremo petalisque ultra medium decurvis longe acuminatis, labello lineari longe unguiculato, appendicula breviuscula curva apice penicillata.
>
> Hab. Middle and Southern Islands. Port William and Thomson's Sound, *Lyall*.
>
> Nearly as large as *P. Banksii*, but the leaves are shorter, broader, not keeled, reticulated. *Stem* sheathed by the leaves. *Perianth* ¾–1 inch long, erect at the base, then suddenly curved downwards. *Lateral sepals* with subulate erect tips. *Upper sepals* and *petals* with long acuminate points. *Lip* as in *P. Banksii*, but the appendix is shorter.

Type

The specimens had been sent by Dr David Lyall, who had gathered them at Thompson Sound in Fiordland and Port William on the north coast of Stewart Island. The type sheet (**Fig.1** overleaf) has two specimens, those on the right, one in flower and one in fruit. The flowering plant is designated the lectotype.

Lyall was surgeon-naturalist on the paddle steamer Acheron, which was charting New Zealand waters for the Admiralty. Lyall has left no journals and the master, Captain Stokes's logs are hard to follow—but a clerk, George Albert Hansard, did write a journal of the voyage, and Shiela Natusch's typescript of his account is in the Alexander Turnbull Library [2]. It is a vigorous and lively account, full of fascinating anecdotes.

The type sheet is annotated, "South extreme of Middle Island New Zealand. Dr. Lyall", suggesting Slope Point in the Catlins as the type locality, (one would expect even the doctor on a survey ship to know that is the southernmost part of the South Island), but Hansard does not mention any landfall there, and Hooker's description mentions only Port William and Thompson Sound. The *Acheron* called at Port William on 16 April 1850 and lay at anchor in Dea's Cove, Thompson Sound (**Fig.2**) from 29 February 1851—arriving at Bligh Sound on 6 March, thence on to Milford and Jackson's Bay. The specimens must, then, have been collected from Port William in midapril (the fruiting plant?) and Thompson Sound in late February (the flowering plant?).

The flightless parrot?

It seems a pity that fitter accommodation be not provided for those engaged in making scientific collections—so as to furnish animals which have cost so much labor in their collection the best chance for reaching England. Thus for want of a proper cage a very handsome Kakapo in excellent health and condition was imprisoned in the dispensary. So long as daylight continued the animal remained stupid in a corner, but upon the approach of night became quite frisky, as all night birds invariably do. Having clambered upon the shelves among the jars and bottles, he bolted, or as the youngsters said skoffed, some dozen pills, & with his inner man thus satisfied, flew through the skuttle & was drowned.

—GA Hansard

Fig.1: *Pterostylis australis*: the type sheet at Kew

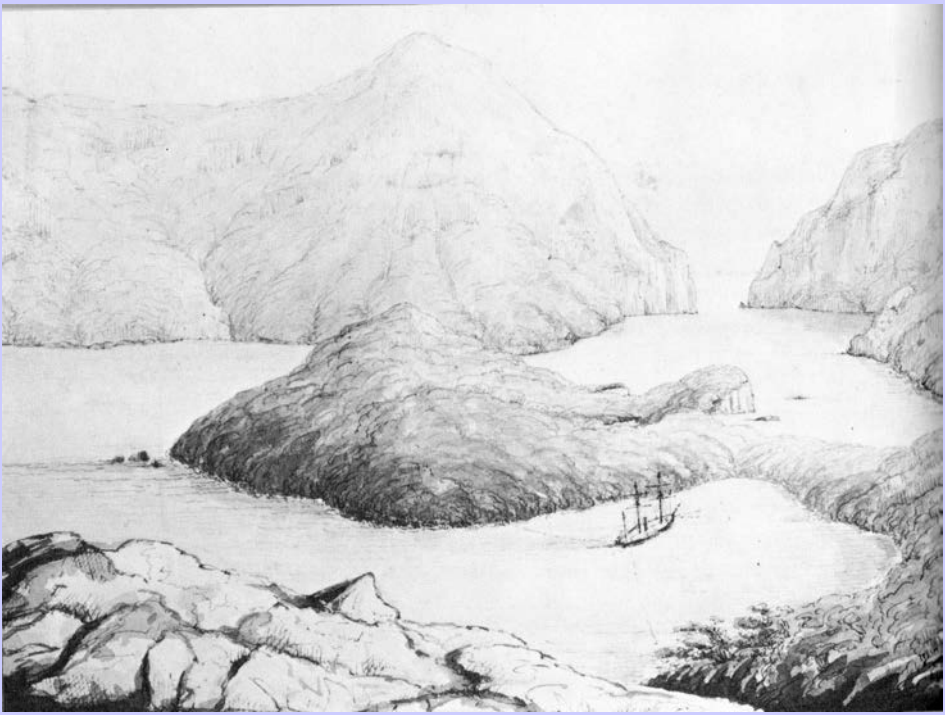

Fig.2: *Acheron* moored in Deas Cove, Thompson Sound. FJ Evans.
This is the type locality for *Pterostylis australis*.

Thursday Feb. 29th—sailed this morning through Breaksea Harbour, the northern entrance to Dusky Bay …. went on to Doubtful Harbour, otherwise called Thompson's Sound…. Precautions were taken to moor the Acheron with two hawsers fastened to trees on either side, there being only just room for the ship to swing.

… It is something strange that the whalers, who have constituted themselves Godfathers to the dark recesses of these islands, should never have hit upon "Venom Point", "Sandfly Bay" or "Bloodsuckers' Sound" as very appropriate designations…. —*GA Hansard*

What <u>is</u> *Pterostylis australis*?

Since Hooker's 1853 description botanists have found *Pterostylis australis* something of a mystery. Hooker called it *P. banksii* var. *β* in his 1864 *Handbook* [3].

Cheeseman described a small-flowered plant ("Flower small, ¾–1¼ in. long, including the points of the sepals" suggests the *P. montana* complex) with broad leaves, from Nelson south and the Chathams (*P. silvicultrix?*) [4].

Hatch reported it from North, South, Stewart and Chatham islands, and his father drew it [5, **Fig.3**].

Gibson, Hatch & Irwin reported it on Mt Taranaki [6], and since then many of us have fitted large, broad-leaved pterostylises with shortish tails, that don't quite match our concept of *P. banksii*, into *P. australis*.

But are we right? As so often happens when I read Flora II [7], Lucy Moore's measured

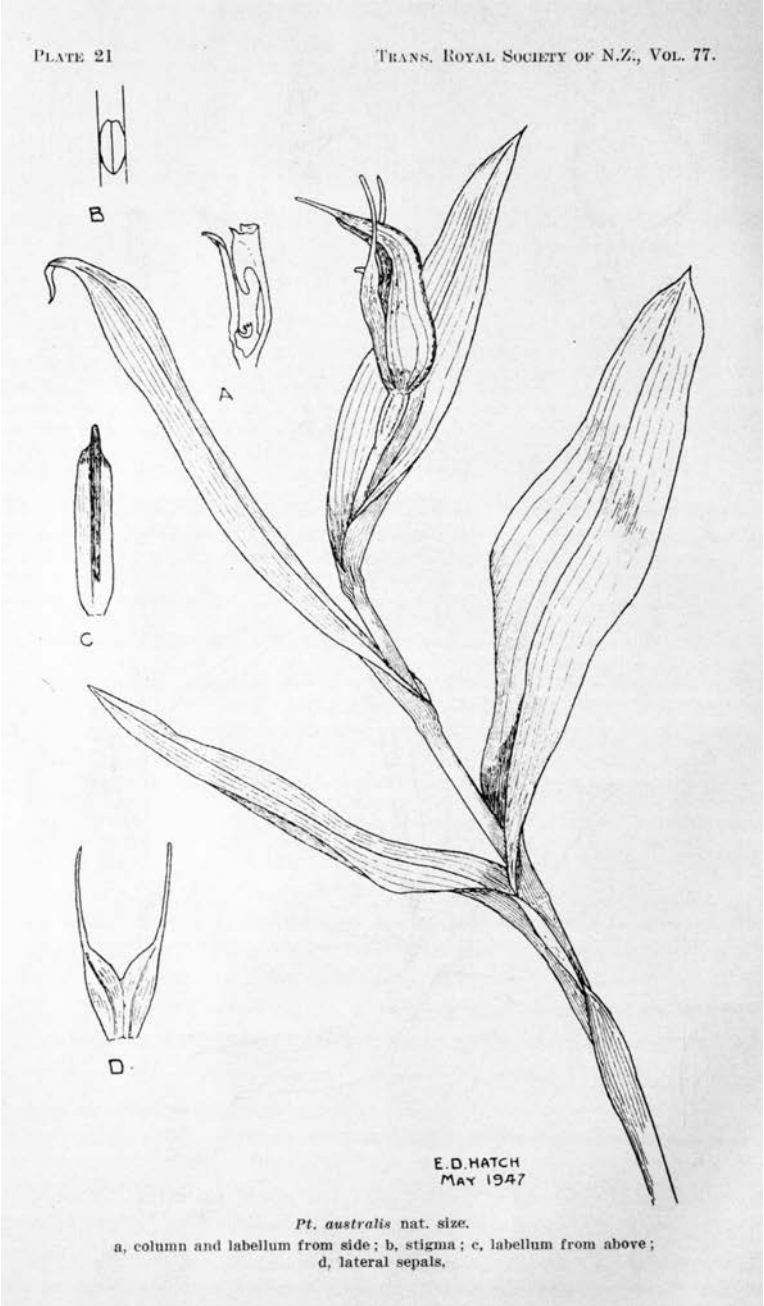

Fig.3: *Pterostylis australis*, drawing by ED Hatch snr, Trans 77: plate 21.

wisdom strikes me: even though she had lumped Colenso's new species (including *P. patens*) into *P. banksii,* she would write, "Further investigation is still required but meantime it seems useful to retain the concept of *P. australis* for the very abundant and often very large Fiordland plant which is matched in suitable habitats further north, and which usually stands well apart morphologically from *P. banksii.*"

South Wairarapa plants I have considered to be *P. australis* flower in November/December and are well over by Christmas. Lyall had found his plant flowering in Fiordland in late summer. It seemed unlikely that latitude would make such a difference if these are the same taxon. Indeed on Stewart Island in 2012 we found plants somewhere between the Wairarapa taxon and the plant tagged P. "Bluff" in full flower in November (**Fig.4**).

Members of the NZNOG Yahoo Group were discussing these matters, when Alasdair Nicholl reminded us of photographs he had taken (and we had published) of a broad-leaved pterostylis in fruit, in Fiordland, at Preservation Inlet, in midfebruary (**Fig.5**).

Fig.4: Pterostylis (fl), Stewart Island, November 2012

Fig.5: Pterostylis (fr), Preservation Inlet, February 2013 (Alasdair Nicholl)

In Fiordland now

Felipe Bauza, the Spanish mapmaker who visited Doubtful Sound in 1792, wrote of "a plague of mosquitoes whose bites made us bleed freely". Our task was to brave the sandflies in this type locality, "Bloodsuckers' Sound", aka Dea's Cove, Thompson Sound, in February, and search for *Pterostylis australis* in flower.

We arrived at Dea's Cove from the Tasman Sea (**Fig.6**) on the Deep Cove Charters vessel *Seafinn* (see http://www.doubtful-sound.com/overnight-cruise-doubtful-sound), stepped ashore on 8 February, were immediately greeted by swarms of avaricious sandflies, and walked along the pebbly beach to the freshwater stream that should have been Lyall's first destination ashore. There, indeed, was a colony of *Pterostylis*, but well in seed. What was striking, however, was the great variation in the size of the leaves—certainly there were

Fig.6: Thompson Sound: the arrows indicate Deas Cove, the line indicates our trip.
Inset: Thompson Sound from Astelia Spur (Secretary Is) © Danilo Hegg / www.southernalpsphotography.com

Fig.7: the approach to Dea's Cove. **Fig.8:** ashore.

Fig.9: The Acheron riding out a storm in Foveaux Strait. FJ Evans.

plants with the long, broad leaves we have always associated with this species (110 x 24mm), but alongside were much smaller plants with smaller leaves (40 x 11mm).

Two issues arise.

First, *why did Lyall find it flowering in February?* when we found it in mature seed? Possibly he found it at higher altitude (see Mike Lusk's report in this issue regarding the effect of altitude on flowering time), but equally the climate is warmer now than it was mid19th century, and the flowering earlier as a consequence. (Colenso, for instance, described the milk freezing in his pantry in Napier in 1846, the water freezing in his bedroom, and the Ruamahanga freezing over near Masterton. That would be unheard of now).

Second, *why did Lyall collect large, broad-leaved plants?* with the consequence that we have assumed *P. australis* is always like that? Lyall's two plants on the type sheet are indeed large and broad-leaved, but there are plenty of smaller plants at the type locality. I think Lyall chose the biggest plants he could find, atypical though they were, to send to Hooker at Kew. In doing so he created in those who followed, a false mindset that the leaves are always wide.

Pterostylis australis is variable in size: most of the narrower-leaved plants with the typical *P. australis* flower (e.g. those in Fig.4 from Stewart Island, those from the Haurangis in the southern Wairarapa, etc, etc) match plants from the type locality.

References

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3. Hooker JD 1864. Handbook of the NZ Flora. p268.
4. Cheeseman TC 1905. Manual of the NZ Flora. p679–680.
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6. Gibson OE, Hatch ED, Irwin JB 1953. Orchids of the Egmont Ranges. W*ell. Bot. Soc. Bull.* 26: p6.
7. Moore LB 1970. with illustrations by J.B.Irwin. In Moore LB and E Edgar. *Flora of New Zealand* volume II. Wellington, Government Printer. p.142–143.

Fig.8
Pterostylis australis at its type locality, Dea's Cove, Thompson Sound, 10 February 2014.

Original papers

The Kauri Grove Track (Mount William Scenic Reserve) Native Orchids. By Cara-Lisa Schloots

Over the course of 2012 I did a research project on native orchids on the Kauri Grove Track at Mount William Scenic Reserve. I visited once or twice a month to take photographs, measurements and to note flowering and development times. This led to the discovery of at least 18 distinct species of native orchid including 2 unidentified species and one tagnamed species along this very short 1.5km track.

The Mount William Scenic Reserve is situated just south of the Bombay Hills in Ecological Region (ER) 9, Auckland, or more specifically, Ecological District (ED) 9.03. There are two walking tracks, the Mount William Track which is a 4.5km track to the summit and down the other side to Puketutu Road. The Kauri Grove Track is the area I researched. It has a huge variety of environments, including the damp lower regions where Taraire (*Beilschmiedia tarairi*) dominates to the middle regions where Taraire, Rimu (*Dacrydium cupressinum*) and Tawa (*Beilschmiedia tawa*) are common. This changes to light forest consisting of Hard Beech (*Nothofagus truncata*) which merges into young Toatoa (*Phyllocladus glaucus*) and finally, at the top of the track, the Kauri (*Agathis australis*) grove. This provides a range of environments for a range of orchids.

My first find at Mount William was *Earina mucronata,* and *Earina aestivalis*, both being present at the reserve, closely followed by *Acianthus sinclairii.* Next was *Diplodium brumale*, dragging my father behind me in the quickly darkening evening. Annoyingly, I've never managed to find this colony of *Diplodium brumale* for some strange reason, I even remember taking shots of the site so I could find it again, but for both of the following years I've never had any luck. As compensation, I have managed to find two other substantial colonies of *Diplodium brumale* along the track, both with at least 20 plants. It was in late 2011 that I found the majority of species, you cannot possibly imagine my delighted exclamation when I spotted my first *Chiloglottis cornuta* and then just to top it off a twin flowered alba *Singularybas oblongus.* I was warned, the alba *Singularybas oblongus* may just be a random mutation, and may never

Diplodium brumale

Singularybas oblongus alba.

appear again, however, I think after 3 years of reappearing (that I have witnessed) it is safe to say it has established itself, and despite not being twin flowered anymore there are now two plants.

And the surprises just kept coming, just this year I found another species along the track, a tiny colony of about 5 plants that I must have walked past about 20 times without ever seeing, *Diplodium alobulum*. And just to top it all off there is a generous helping of *Caladenia* sp. throughout the Kauri Grove (I've been away every year just when it flowers), along with thousands, possibly millions of *Cyrtostylis oblonga,* and *Pterostylis graminea, Microtis* sp., *Diplodium trullifolium, Nematoceras* "trisept" and *Singularybas oblongus* in the upper section of the track and no shortage in the lower section with plenty of *Pterostylis banksii* and *Nematoceras macranthum*. In way of epiphytes there is *Ichthyostomum pygmaeum* everywhere and a few *Drymoanthus adversus* around the place too.

Last year, however, I found a small clump of *Earina autumnalis* lying on the ground, in the middle of the Kauri Grove, right on the trackside. I've never managed to spot any along the track, and trust me, I have looked very thoroughly. I really don't know what to make of this; did anyone go to Mount William last year and just happen to let a clump slip out of their backpack?

Exploring the diversity of *Gastrodia* species in New Zealand

By Jasmine Gibbins, Summer Research Scholar, Te Papa–Victoria University of Wellington.

Gastrodia is a genus of mycoheterotropic orchids that lack chlorophyll and are associated with a wood-decomposing fungus. The common habitat of *Gastrodia* is dense, dark, moist forests with substantial leaf litter. As they don't require sunlight for nourishment, they have colonised areas that are too shaded for the growth of green plants (autotrophs). There are approximately 35 species of *Gastrodia* globally, with a distribution through Asia, Malaysia, India and Japan with southern extensions through Australia and New Zealand. Some species of *Gastrodia* have been recently qualified as "vulnerable" under the International Union for Conservation of Nature and Natural Resources (IUCN), which is reportedly due to the increasing harvest of wild *Gastrodia* for medicinal purposes.

There are currently three recognised species of *Gastrodia* in New Zealand: *G. cunninghamii*, *G. minor* and *G. sesamoides*. The phylogenetic relationships within the species of *Gastrodia* in New Zealand and overseas are poorly understood; one difficulty in working with these orchids is that species are sometimes difficult to identify due to the great similarity of their overall floral morphology. It has been my goal over this summer, as part of a Summer Research Scholarship at Te Papa and Victoria University of Wellington, to reassess the taxonomic classification of New Zealand *Gastrodia* and to determine if the entities known as *Gastrodia* "long column" and *Gastrodia* "long column black" should be recognised as different species. I studied the extent of morphological variation within *Gastrodia* species using herbarium specimens collected across the entire country (over 250 specimens) and assessed the genetic affinities of the different forms using multiple DNA markers. On the basis of both morphological and DNA analyses, we found no support to recognise the *Gastrodia* "long column black" as a distinct entity. However, the presence of a long column is a very distinctive feature and it still puzzles us. Morphologically *Gastrodia* "long column black" is very similar to *G. cunninghamii* and genetically it groups with our samples of *G. cunninghamii*. On the other hand, *Gastrodia* "long column" has shown significant genetic differences in the DNA markers and morphology and this provides great support to accept this entity as a new species. The New Zealand species of *Gastrodia* therefore need to be extended to consider *Gastrodia* "long column" as a new species and its description is currently being prepared.

I would like to thank the contribution of the NZNOG towards this study and the many people who sent me plant material for DNA analyses. Special thanks to Mark Moorhouse, Georgina Upson and Mike Lusk for the many trips made to collect and search for some of the less common species. Funding for this study was also provided by the Department of Conservation (Grant CMU-4518) and the Capital City Orchid Society.

A new species of Gastrodia waiting for a name. ► Photo Carlos Lehnebach. © Carlos Lehnebach

Fungus gnats in Nematoceras from the Nelson Region

By Georgina Upson

Several years of close observation of *Nematoceras* "whiskers" colonies revealed, within colonies, at various localities and altitudes small numbers of plants displaying the same range of morphology as seen in *N.* "whiskers" but with a range of colour patterns said to differentiate *Nematoceras* "kaimai", "tinline" and "pollok" from "whiskers". An article in N.Z.N.O.J. 120 expressing the view that they were all a single entity was greeted with a response that they must be either separate species or hybrids. In order to establish the likelihood of hybridization it became necessary to study the pollinators of not only *N.* "whiskers" but all other species that it could conceivably hybridize with. Thus began a foray into entomology.

Nematoceras "whiskers" seem to strongly favour cross pollination. The stigma forms an upfacing cup near the base of the short, fat, near horizontal column with the rostellum rising up to form an effective barrier between the stigmatic surface and pollinia beyond. In the lower central portion of this sits the viscidium attached to the pollinia that lie loosely in the anther. In the early stages of flowering this circular disc is highly viscid while the stigma remains passive. This allows the disc and pollinia to become attached to a gnat thorax without the gnat becoming stuck to the stigma allowing safe removal. All pollinia cells are removed simultaneously when this occurs. Later, if the pollinia have not been removed, this disc dries becoming passive. Mid flowering the stigmatic surface becomes highly viscid to receive pollen or some unfortunate gnat. Despite having long lived flowers, they have a very low seed set which would suggest that self pollination is unlikely. It seems probable that all *Nematoceras* species have a similar method of pollination.

Fungus gnats are not the only creatures to be encountered in *Nematoceras* flowers. Springtails, mites, beetles and caterpillars are sometimes present but appear to play no pollination role. Gnat eggs are frequently found in the "egg pockets" of the *Nematoceras trilobum* agg. and *Nematoceras macrathum*, occasionally on the labellum "apron". They have once been observed on the apron of *Nematoceras longipetalum*. In order to lay eggs in this pocket the gnat must lie deeply within the flower. Gnat larvae, white grubs with a black head, are occasionally encountered within flowers.

The presence of a gnat within a flower by no means indicates pollination. Some do not have the strength to remove themselves with pollinia attached while others become adhered to the stigma without carrying any pollinia on the thorax; both scenarios block access for pollen to the stigma. Only gnats found within flowers have been recorded avoiding the possibility of a gnat merely using a *Nematoceras* as a landing stage or display area. This ensures that they are at least potential pollinators. Both gnats with or without pollinia attached were recorded. In most cases, the primary pollinator gnats of any one species have been observed both with and without pollinia attached.

Fungus gnats are said to have a lifespan of approximately three weeks with around ten days as an adult. The adult apparently does not feed which, if correct, would seem to eliminate any food source as an attractant. Allomones that are produced by one species to attract another, possibly play some part as gnats seem highly attracted to some *Nematoceras* species yet not so strongly to others. Colour, or possibly ultra violet light, may also influence some gnats. They are most highly active during the morning or later in the after-

noon. From sampling this year it appears that most species involved with *Nematoceras* reach peak numbers in mid to late spring lowering over the hotter drier months. Those of the Genus *Epicypta* peak a little later and are in strong numbers mid summer. A number of gnat species may be present at any one site.

The pollinators for *Nematoceras* species lie in Mycetophilidae. All except one notable exception are of the Genus *Mycetophila*, the other an *Epicypta.* This is stated a trifle tentatively as while displaying the wing venation stated for *Epicypta* it is very similar in its features to a grouping within *Mycetophila.*

For some *Nematoceras* species it is necessary to examine dozens of flowers to find a single gnat and it is a time consuming exercise. Time constraints coupled with poor flowering or limited plants of some species explains in part the small number of results to date. For *Nematoceras iridescens, acuminatum*, "*papillosum*", *hypogaeum*, and "trotters" there are results from only a single site/area while others have been obtained over a wider spread of the district. It appears that random visits from gnats that would not normally visit do occur from time to time. With a very low number of gnats recorded for some orchids this may skew results. The list below therefore should only be regarded as preliminary but may give a good indication of primary pollinators and the relative potential for hybridizing .

The author feels reasonably confident that the gnat species are correctly identified after much study and collecting but does not rule out blissful ignorance. The plants seem more problematic, in particular *Nematoceras longipetalum* which has shown some curious results and the *Nematoceras trilobum* agg.

Nematoceras acuminatum
Mycetophila marginepunctata x5
Mycetophila fagi x3

Nematoceras iridescens
Mycetophila colorata x2

Nematoceras orbiculatum
Mycetophila vulgaris x17
Mycetophila crassitarsis x14
Mycetophila fagi x2
Mycetophila elongata x1

Nematoceras longipetalum
Site 1;
A, Mycetophila vulgaris x4
B, Mycetophila fagi x9
Site 2;
A, mycetophila vulgaris x14
Mycetophila furtiva x1 (tentative)
B, Mycetophila fagi x32
Mycetophila vulgaris x1
Site 3;
Mycetophila fagi x1
Mycetophila colorata x1
Site 4;
Mycetophila vulgaris x4
Mycetophila fagi x1

Nematoceras "whiskers"
Epicypta immaculata x 9
Mycetophila colorata x1
Mycetophila vulgaris x1

Nematoceras macranthum
Mycetophila marginepunctata x3

Nematoceras "papillosum"
Mycetophila fagi x2

Nematoceras trilobum agg.
N. "triwhite" (green)
Mycetophila virgata x4
Mycetophila vulgaris x1 (plus pair on flower)

N. "avalanche"
Mycetophila vulgaris x7
Mycetophila elongata x2

N. trilobum
Mycetophila phyllura x10

N. "trotters"
Mycetophila vulgaris x1

N. hypogaeum
Mycetophila marshalli x3

Fungus gnats, continued...

Notes

Nematoceras longipetalum seems to be pollinated by *Mycetophila vulgaris* or *Mycetophila fagi* but not both despite both gnat species being present in each area. There do appear to be rather subtle differences between these two but much more study is needed from further sites in different regions. They have been labelled A or B where both have been found in one area but not adjacent to one another.

The *Nematoceras trilobum* agg. has so many taxa many of which are not fully understood nor are they described. I have used the illustration N.Z.N.O. Journal 124 p19 courtesy of Carlos Lehnebach and Te Papa Tongarewa as a guide; "triwhite" for green taxa; "avalanche" for flowers with broad dorsal, pale bib and frequently striped labellum ("avalanche" gnats have been collected only from lowland areas); *hypogaeum* with very small flowers; "Trotters" for plants that otherwise might be described as "darkie", paler but of similar morphology; and *trilobum* for somewhat variable plants dark red usually with a narrower dorsal sepal, greenish bib, often ragged at the labellum apex and flowering later than avalanche. Features vary somewhat among *trilobum* s.s., *hypogaeum* and "round leaf" although they do not have round leaves.

No gnats have been obtained as yet from other than normally coloured, green, *N.* "whiskers".

References

Tonnoir and Edwards, Fungus gnats of New Zealand: Transactions R.S.N.Z 1927 p747-878.

G. Upson. *Nematoceras rivulare* s.l. taxa in the Nelson region: a field view N.Z.N.O.J 120 p.11–18.

Notes, &c...

THE 2014 AGM & FIELD DAYS

will be held on Labour weekend, as originally announced.

We will start with a get together on Friday evening, 24 October, with perhaps a slide show of what we can reasonably expect to see over the weekend.

There will be a field trip on Saturday, followed by a catered dinner and the AGM at the Doubtless Bay Christian Centre.

There will be a further field trip on Sunday and those that wish to can head home later in the day.

An optional field trip will be available on the Monday for those who wish to stay on.

Cheap accommodation will be available at the Coopers Beach Christian Camp on a first in basis, although this should be sufficient for most, if not all, of those who require it. Note that the Christian Camp is only a few hundred metres from the AGM venue.

A registration form will be available in the next issue of the NZNO Journal.

Kevin Matthews emailed (5 December), "This wee native bee *Hylaeus* sp. on the *Thelymitra pulchella* eats pollen and carries it in its stomach back to its hole. Our native bees are not social. Other native bees carry pollen on their legs like the *Leioproctus* sp. in the pic on the *Gastrodia* aff *sesamoides* which is also scented (well at least up here).

The *Hylaeus* will cross pollinate with ease as it flies from one open *Thelymitra* to another with pollen sticking to the mouth parts as seen in the photos. On the recent visit to the Ahipara Gumfields on the 23.11.13 this *Hylaeus* bee flew from the *T. pulchella* to the scented *T.* aff. *pauciflora* a metre distant to feed and again back to the *T. pulchella* flower. There is no doubt at all this bee is a successful *Thelymitra* pollinator and cross pollinator; this will explain some of the most unusual Thelymitras up at the Gumfields—as in this image…

I also photographed the *Hylaeus* bee feeding and observed it flying between *T. pulchella* flowers in 2010… (and see over)….

Mark Moorhouse's *Microtis*

Mark Moorhouse emailed the NZNOG Yahoo Group forum, "Can anyone confirm the identity of this *Microtis*? It seems to have all the features of *M. oligantha* but far too many flowers…. there were small *Microtis* present but their buds had not even broken through the leaf, so if that was the norm, there's very little likelihood of a cross as the three or four heads of this plant were midflower. The photo does show all the flowers (average about 10–12 per plant) and was taken 19 Nov, which is also early for *M. oligantha* flowering range. We did not spot any other 'normal' *M. oligantha* in the area." ►

Eric Scanlen replied, "Your *Microtis* is too early for *M. oligantha* but the flower looks right if only there weren't so many. Where did you find it? what was the habitat? and was there a colony or just a singleton? All important traits before one can get a good handle on whether it is a new one or a mutant."

Mike Lusk chipped in, "There were lots of them in flower on the Maungaharuru Ra and I wonder if they are the same as Mark's. The max number of flowers was about 30." (next page)...

Mike Lusk's photograph of *Microtis* aff. *oligantha*, Maungaharuru Ra. Eighteen flowers, their internal structure consistent with *M. oligantha*.

Sarah Richardson photographed this "small crowd of orchids on a ridge amongst blocky debris and short tussock" near the Rahu Saddle off the Lewis Pass in early December. *Its dorsal and lateral sepals are unusually long for Pterostylis venosa, though the cuplike formation of the leaves does seem to be an exposed-habitat adaptation for a number of orchids in the south.*

Note the furry appearance of the labellum, as Lucy Moore described it. I have been looking for that feature for years, but this is the first time I have seen it—Ed.

Carlos Lehnebach wrote a blog about the summer research project Jasmine was involved in. See http://blog.tepapa.govt.nz/2014/02/28/we-know-what-you-did-this-summer/

Cheryl Dawson was "at Mt Ruapehu over the weekend (early January) and caught this ant on *Prasophyllum colensoi*." ►

Mark Moorhouse emailed the Group, "A week ago my daughter Kendyll emailed me from Charleston, south of Westport with some pix of a rather unusual *Caladenia.* Outwardly it looks like 'red stem' but it has no red barring at all, but does have red stalks on the disc calli unlike *C. nothofageti* which can have red stems but not any red on the labellum. Has anyone else got any putative crosses involving *C. nothofageti*? I couldn't spot any in the journals. Today she emailed, 'As to the redstem aff. *notho* there is a small colony of these plants in one place - have counted ten plants so far, all with the same characteristics. Will have to watch how they spread. Might have witnessed the beginning of what will become a new taxon.'" ▼

Of rolls, curls & rotations

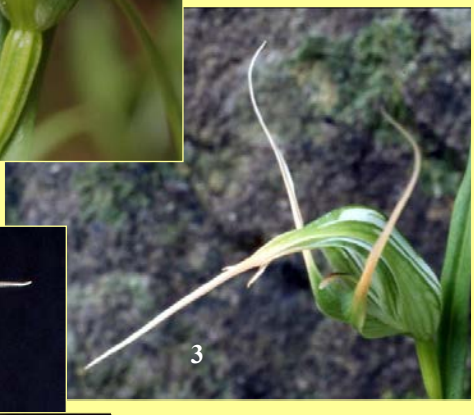
The lateral sepals of *Pterostylis montana* are ribbonlike. They don't roll, but they can curl **(Figs 1, 2).**

The only trouble with that statement is, we use the words roll and curl differently. Could we standardise?

I propose that when the lateral sepals are flat and ribbonlike and are capable of curling forward, we call that "curled".

And when they are rolled up like a tube or a cigarette paper and are thus incapable of curling, we should say they are "rolled"—the usual state of, for instance, *P. banksii* **(3).**

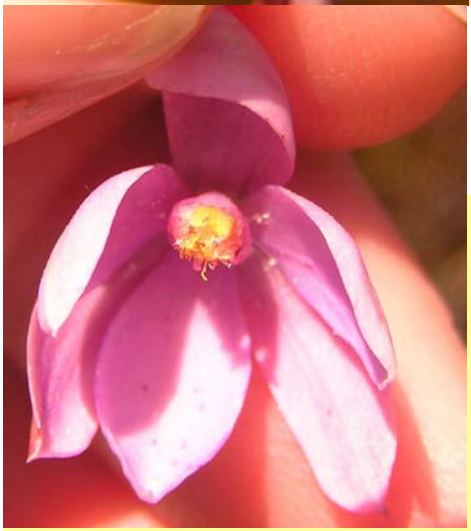
Of course *P. banksii* lateral sepals sometimes don't roll and can therefore curl **(4, 5)**… and *P. montana* sepals can "rotate" outward so you just see the edges from the front **(6).** ***—Ed.***



Figures

1. *P. montana,* Hawke's Bay, Wolfgang Rysy.
2. *P. montana,* Silverpeaks, Otago, IStG.
3. *P. banksii,* Berwick, Otago, IStG.
4. *P. banksii,* Kaueranga, IStG.
5. *P. banksii,* Matawhero, Olaf John.
6. *P. montana,* Haurangi, IStG.

Mark Moorhouse emailed again, "Kendyll sent more photos of two more rather gaudy Thelymitras from down her way. Trouble is I'm not 100% sure of ID. I think the bluer one is probably *Th. dentata* but the pink one has me buffaloed. It appears to have a slight botrytis attack but that seems to have had little effect on flower structure. The others she sent were pretty much straight *T. pulchella* so it's present in the area. Your opinions appreciated" ...



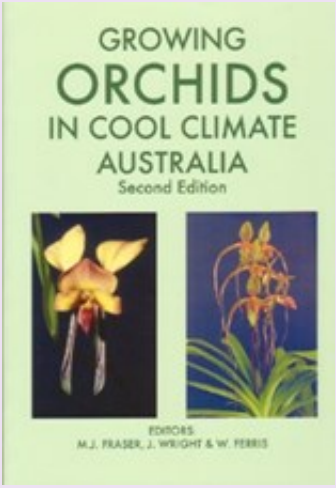
...opinions varied, of course, but the best guess about this pink, stripeless and spotless, somewhat fungus-infected flower, with its tall fimbriate column, was that it is a *Thelymitra formosa* X *T. pulchella* hybrid.

Gordon Sylvester sent this image of *Pterostylis australis* from the Grebe Valley ►

Growing Orchids in Cool Climate Australia: with Special Reference to Canberra, 2nd Edition

This is a update of an earlier book and includes much new material. Written by members of the Society, this book covers topics such as What are Orchids, Structures for growing orchids, potting media, pests and diseases, Orchid nomenclature, Orchid Classification and of course how to grow many types of orchids in cool climate regions of Australia (and therefore New Zealand). An invaluable reference for novice growers and those with a passion for this delightful plant family.

Published in October 2013, 128 pages with about 190 photos.



The book is available from the society at a cost of $A20 plus $A4.50 postage and handling for delivery anywhere in New Zealand. Payment may be made by cheque or postal note, payable to the *Orchid Society of Canberra Inc* and must accompany order, or email your request with name and address to *orcsoc@yahoo.com* and direct deposit to the Society account:

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Orchid Society of Canberra
PO Box 221
DEAKIN WEST ACT 2600

Alasdair Nicholl sent photographs of two different forms of *Orthoceras* in a single colony on the Waitawheta track between Paeroa and Waihi. Others have seen a similar range of forms growing together elsewhere (see for instance Mike Lusk's comments on p.30).

Margaret Menzies wrote (received 27 January 2014)…

On 6 January 2014 Glyn and I went to Omoana (Taranaki) to search for *Molloybas cryptanthus* seedheads: we did not find any flowers in 2012 so we hunted high—no go; not even a *Corybas cheesemanii* seedhead.

We found *Prasophyllum colensoi* in flower, also 2 *Orthoceras*, 1 small, going to be a little while, another large one, soon. We also found a lot of *Singularybas* with seedheads; they have had a boomer year.

◄ Glyn found a plant with a twin seedhead—looks a real character. Lots of *Microtis* in flower, *Mm. parviflora* and *unifolia,* also *Pterostylis* species in seed.

We then headed down to the track to one of our first sites and still no go for *M. cryptanthus* so we ratted around in amongst flaxes, ferns etc and spotted several *Caladenia* species and *Thelymitra* species in seed. Glyn found 2 *C. cheesemanii* in seed 12 inches tall. Then I saw a *M. cryptanthus* seedhead poking out of a flaxbush and found 3 all about 14 inches tall.

We were getting a bit pooped so decided it was time to head home.

Above left: *Prasophyllum* "B" (= *P.* "debile").

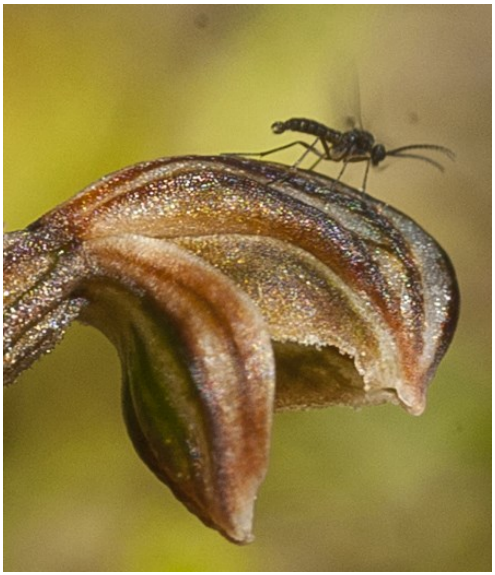
Above: *Singularybas* with twin seed capsules.

Left: *Earina aestivalis*.

Mike Lusk emailed (7 February), "I was on the tops in the Southern Kaweka Range on Feb 4th and expected to find the *Caladenia* sp which has been called *C.* 'Kaweka late', but which is indistinguishable from *C. chlorostyla*, which flowers in Nov/Dec in most parts of Hawke's Bay. So I did, at an altitude between 1200 and 1300m. In roughly the same altitude range *Thelymitra hatchii* and an orchid like *Microtis unifolia* were flowering in the herbfields. A *Gastrodia*, probably *G. cunninghamii*, was in bud, *Pterostylis patens* was just past flowering and *Thelymitra longifolia* (with slim erect leaves) was in bud, all in the mountain beech. All were well past their 'usual' local flowering time.

"Pondering on all this as I trudged along I realised that I had not really appreciated the effect of altitude on all of the above spp. More thought made me pretty sure that the *Caladenia* is in fact just *C. chlorostyla* behaving just as it should at that altitude. So if you want to extend your local orchid season, go higher."

Bill Hall sent this photograph (detail) of an insect visiting *Hymenochilus tristis* at a site near St Arnaud at the last AGM.



Gordon Sylvester emailed, "Karen Nicoll showed another example of the adaptability of orchids. Karen had sighted *Ichthyostomum pygmaeum* at Cape Foulwind ED 48.02 on or about the 8 Feb 2014. The plant was situated on the landward side of a large rock affording some shelter from salt spray. I am aware of a similar situation on Wellington's South Coast.

"Having read of a report of this species growing at sealevel, no bush, and lithophytic as well, I spent some 15 years on and off trying to locate the colony. It was found by accident late one Sunday afternoon in 1991.

"What was interesting was the graze line. Sheep were frequently grazed on this strip of the foreshore and the plants started slightly above head height sloping up to more dense growth out of reach of tongues/teeth of the largest sheep.

"Good spotting Karen."

Mike Lusk emailed, "I visited the Kuripapango Lakes (aka Twin Lakes) in the foothills of the Eastern Kawekas on 16 Feb.14, and found some flowering *Orthoceras* plants growing within about 20m of each other on a clay track side. I took particular interest in the length of the flower bracts in relation to each of the respective dorsal sepals and I think there are striking comparisons both on each plant (according to the size of the ovary) and from plant to plant. *CFG 3* notes that the length of the flower bract with respect to the dorsal sepal is variable and there seems also to be some disagreement as to the shape of the labellum. The flower colours too are remarkably variable. I wonder if we are in fact seeing just one sp. which shows considerable variation, rather than *O. strictum* with a long floral bract and *O. novae-zeelandiae* with a short one. This suggestion is raised in *CFG 3* too and it is perhaps notable that there is only *O. novae-zeelandiae* listed on the NZ Plant Conservation Network website."

1

2

3

*P*at Enright emailed with photographs **(1, 2, 3)** of "Gastrodia 'long column' in full flower at Mores Scenic reserve near Riverton 25th Feb 2014."

Similar plants **(4)** *were flowering at the roadside through Kowhai Reserve, Kinloch, Lake Wakatipu a fortnight earlier—Ed.*

4

At the St Arnaud AGM Mark Moorhouse had the nouse to suggest a group website where members could discuss orchid finds in real time: if a question arose about an orchid it could be answered in the same season, rather than awaiting the necessarily ponderous business of quarterly journal publication. No sooner said than done, and within a month the group had 22 members and 60 photographs had been posted. Something new appeared every week, and often quite vigorous debate has taken place. Our "Notes" section will attempt to highlight some of the issues. Mark is to be congratulated on, and thanked for, the concept.

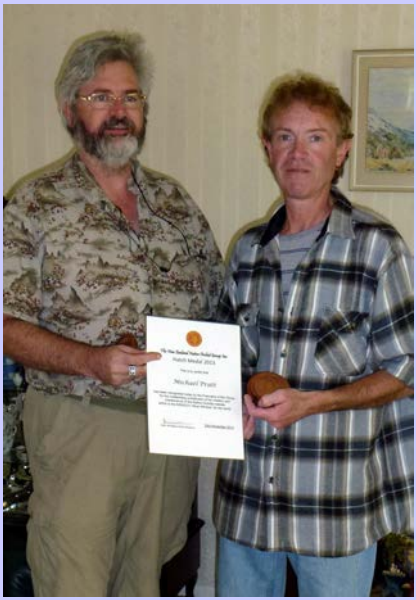
The Hatch Medal 2013

David McConachie wrote,

On Friday 17th January, my wife Susan and I headed to New Plymouth for the weekend. I had arranged to meet Michael Pratt at his mother's home in Wanganui as I "had an important matter to discuss with him."

What Michael was unaware of was the fact that he had been selected as the 2013 recipient of the Hatch Medal.

When his nomination was considered by the committee many positive comments were made, as exemplified by the following from Cara-Lisa Schoots



David McConachie presents the 2013 Hatch Medal to Michael Pratt

"I remember when I first became interested in native orchids and began researching them. My earliest research consisted predominantly of internet research and book reading. I happened upon the native orchid website by Michael Pratt and explored pretty much every aspect of it. I can honestly say that it is one of the best websites I have ever visited. This website is also how I came to know about the existence of the New Zealand Native Orchid Group (NZNOG) and without it I would not be a member, let alone a committee member. I have used it extensively over the last few years. I know how much the website has helped me and so it must also help others considerably."

The citation for Michael's award read that "[he] has been recognised today by the Executive of the Group, for the outstanding contribution of his creation and maintenance of the Native Orchids website which is the NZNOG's 'Shop Window' for the world."

Michael started the website in the days before Flickr and other photo-sharing sites to display his own native orchid photos and has since been developed into the site it is today. Michael is still coming up with ideas to improve and extend the site and I look forward to seeing the results.

It was very pleasing that Michael's mother was there to see him receiving the medal and both Susan and I had an enjoyable time discussing with Michael his plans for the future of the website.

Gordon Sylvester may hold the record for the earliest flowering *Acianthus sinclairii*—

For some time I have been on a bandwagon regarding checking an area previously visited. This was highlighted yesterday 23 March 2014.

We decided to return to Mananui Walkway so as to check up on a very large *Earina autumnalis* the fronds were some 5-600mm long. The site was approximately 60m from the beach front. Many years ago I had a similar plant under observation at Days Bay Wellington which exceeded more than a metre in length. I never saw that plant in flower as it was vandalised by persons unknown.

The Mananui Track is a short walk through a remnant coastal bush reserve on the boundary of a farm. It is situated between S.H. 6 and the sea shore, and is about 600m long. To date I have observed some 16 species growing in this environment.

After locating and photographing the plant and its attendant flowers, we were wandering back to the vehicle, casually looking but not expecting to see anything. Suddenly my eye was attracted to a distinctive leaf shape. A closer look revealed flower buds above the leaf. Getting to observe closer several flowers were seen to be open. Out came the camera on went the macro lens. The colony composed of some 20 plants on a small mound beside the track with leaves ranging from 10 x 12 mm long to 20 x 22 mm long. All plants had multiple buds evident. They were growing in dappled shade. The camera selected flash to enhance the available light.

Wow. *Acianthus sinclairii.*

I had previously seen this species North of Barrytown (ED 48.05) on 9 September 2006 as a spent plant. This record now extends the range of the species here on the West Coast by some 83km—into ED 50.01.

Records have previously recorded this species as flowering from May to October (Field Guides etc) so is this an unusual occurrence due to warm weather over the last 12-15 months causing the plant to adapt it reproductive strategy or are there other factors involved. I have never heard of or have any other sightings this far south on the West Coast.

Australian notes: David McConachie

Another Instalment of "Did You Notice?"

Alan Stephenson
(*From* ANOS Illawarra January 2014 pp5-6)

The first thing I noticed last year was something which began the year and is still producing new data and will continue to do so. It was of course the weather and while we don't have to grin, it is a pleasure or a burden depending on the point of view of the individual.

At the time of writing this there were over 130 weather records set during the year and these varied from the wettest this and driest that, to the hottest day in any given month since records began, or the longest spell between rainfall events in memory. All of this culminated in a most diverse and difficult year faced by orchid growers.

To a degree plants in pots or on mounts at home are less of a problem than those in a natural situation, or are they? Orchids in situ either flower or don't flower depending on what weather events they are forced to deal with. Some orchids will produce a good growth only to have it fail due to a period without rain of 35 days, while at home it's just a matter of turning on the hose or watering system.

The unusually warm winter, accompanied by a June rainfall of over three times the monthly average produced great expectations for a record in situ flowering season and in many cases this occurred. However as we all came to recognise with Dendrobiums and particularly *D. speciosum*, the majority of plants did flower very well, possibly the best for many years but come show time, while there were plants on the bench, most were not in show condition. I ask all growers to calculate the percentage of this genus which produced flowers in good condition in mid-September. Would it be 5%?

Another point to consider here would be to calculate the lasting qualities of the mass of plants which flowered, as in some instances I know some failed to last a week, whereas with the normal few cooler days in late August or early September, the lasting qualities would extend to a minimum two weeks and frequently three weeks.

It was not only epiphytes which suffered this fate, as I noted countless in situ terrestrial species which flowered early but were less than good photographic subjects 10 days later. It is obvious the record mid-year rain provided good sustenance but nothing lasts forever and this feature showed in more than one way.

I noticed the *Petalochilus* species (*P. pictus*) (and other species and genera) which flower mid-year did so as normal but the later spring species such as *P. fuscatus* and *P. carneus* were of a smaller size than normal. I was constantly required to closely examine these to determine their true identity as some plants of *P. carneus* were reduced to 20 mm or less, which is almost *P. fuscatus* size. Another notable feature regarding *P. carneus* was the number of plants which produced two flowers. I am aware this species can produce up to five flowers, although the best I have seen is a plant with three flowers but these were full size 25 mm flowers, not the minimalist specimens seen in 2013.

Another noteable occurrence in 2013 was the sighting of a species I first noticed in 2005 and it was then the first sighting of this species in the Shoalhaven. The species is *Petalochilus mentiens*, which was named from Tasmania only in 1993. This species is now 12 km closer to Nowra than was previously known, if this is

significant although the altitude is still important. The original site is 635 m and the new site is 430 m, still what I would term as existing at altitude. Another species which is yet to be named is also on this site which is the continuation of a power line easement. It also is 365 m at the original site and is a further six km west of the original find. This *Prasophyllum* was first found in 2003 and collected by Canberra about three years later. It has also been located near Robertson but to this date it has not been formally named. Individuals of this species varied from 12 cm tall with a few flowers to others over 60 cm with over 20 flowers.

One other feature of this section of the power line easement was that this was the location of the fire reported last season as the Deans Gap fire; the fire however was not at Deans Gap but along Wandean Road, a distance by road of 15 km to the south west. The location of these rather intense fires was repeated in every radio and television broadcast for a week before the fires were contained and I am pleased the people who provided location details do not write road maps. One result of the fire was the increased flowering of *Prasophyllum elatum* which is said to present a black stem following fire, however this was only true in part as most plants showed a black stem but many others had green stems as per normal. I wonder just how true many of these references actually are, although the proliferation of plants was definitely greater.

Another aspect of the fire was the discovery of possibly three species of *Corunastylis*. This group is well known for their lasting qualities after flowering but the question must be asked, did they emerge immediately following the fire, as a couple of plants were quite fresh and I had difficulty determining if they were yet to open as they had not yet formed capsules.

Just to prove the odd things that were happening during the year, I saw on September 17th a plant of *Cryptostylis subulata* with an open flower, something which is at least a month early.

Fires do strange things to orchids and other plants and despite the frequency of bush fire throughout white settlement there is still much to learn from these events. With this in mind I feel ANOS members should make note of any considered irregularities to enable us to understand them better and it will need to be our amateur Botanical studies as money for such non profit-making sciences is non-existent and unlikely to be available for the foreseeable future given the governments we have elected.

Same Old Same Old

Alan Stephenson
(*From* ANOS Illawarra March 2014 p5-7)

For the last day of February 2014 my rain gauge measured 15 mm and this was the heaviest fall of rain I have had since November 11th 2013, when it registered 24 mm with 25 mm the previous day. Since that time all falls have been miniscule with lots of 5 mm or less and more of 1 mm or less, all of which are almost ineffective.

The year of 2013 however was overall a very good year, totalling 1132.50 mm, lifting my 22 year average from 868 mm to 881 mm. Not exactly riveting data but as the bulk of rain ended in June 2013 (300 mm) any outdoors adventurer/photographer would have noticed most orchids were a little different, assuming they flowered at all. Most terrestrials which emerged to flower in the months after August displayed certain features as this was the obvious point where sub-soil moisture disappeared leaving plants with little or no sustenance to survive a hotter than usual summer. The features were, smaller plants with fewer flowers of a smaller than normal size.

Contrary to this was the situation with *Dendrobium speciosum*. This species displayed an extraordinary number of plants in flower and were notable by their floriferousness. Other epiphytes also produced

well but this could be attributed to their preferred habitat, along or overhanging creeks and rivers.

The annual monitoring of *Prasophyllum affine* produced a small handful of new plants and the same number of older and marked plants in control plots but the flowering average of 400 plants was less than one percent.

A stop on the way home from a Melbourne trip last October made me realise not only how important good rain can be but also when that rain actually falls. I stopped to look at an orchid site near Batemans Bay and found a few plants of *Corunastylis vernalis* in a location not recorded at the time although that site is close to one of the two known sites. In mid-September, 68 mm fell and surely six weeks later the 30 plants of *C. vernalis* emerged. Regular but small dribbles fell in November and the plants lasted into early December when I again visited the site with an OEH Officer (Patsy Ross) to formally record the plants. In addition to these plants a bonus plant was noted. It was a lone individual of *Cryptostylis hunteriana* and also nearby was an early flowering individual of *Corunastylis laminata.* As *C. vernalis* and *C. hunteriana* are listed species, both were added to the NSW Wildlife Atlas for formal recognition.

Early this year on 11th January I led a National parks Discovery Tour and the day before had a look at several sites around Huskisson to ensure the group had some orchids to see and photograph. On this day I saw several plants of *Genoplesium baueri* in bud but to my surprise the next day most flowers on these plants were open. What must be noted is the different weather patterns which are influenced by Jervis Bay as only in 2011 I recall Vincentia recorded 144 mm of rain in three hours while 25 km north in Nowra not one drop fell. A lesson should be learned from this.

So far in 2014 rainfall has been minimal and so the orchids have reflected the prevailing conditions. As most would know *Corunastylis* species perform to their best 4-6 weeks after significant rain. In the absence of a scientific determination of a precise amount to trigger growth and flowering, I have over the years assumed this to be 15 mm – 20 mm in a 24 hour period. Unfortunately such an event only occurred in recent days so I expect nothing significant to result from this until the end of March.

I have been out looking for *Corunastylis stephensonii* in order to conduct a survey of known sites to gain precise numbers so a submission can be written to have the species listed under the NSW TSC Act. However, so far I have failed to locate a single plant and I feel this year may be lost as this species is normally found in flower from mid-January until the end of March. Other species in this broader group have managed to promote only a few widespread plants and most of these have been *C. woollsii,* the most common species in the genus.

The plant I have been looking for is *Genoplesium baueri* as a motor racing facility is proposed for a large area bordering HMAS Albatross and as *G. baueri* is within the required distance a survey must be undertaken on the site. What plants of this species I think I have seen so far this year in that area have just emerged and a positive identification would be a rash statement although *C. woollsii* and *C. pumila* are in flower and bud but as unlisted species these do not count. In another two weeks this may change but preparation for a survey will need to be rapid as I expect the season to be quite limited without further rain as what has fallen so far will not sustain any lasting growth.

Photos with this article show plants in bud and flower and *C. simulans* is at the same site as visited by ANOS Illawarra last year but it also at 650 m has a different weather pattern than sea level species.

The above information influenced the title of this article “Same Old Same Old” but also be aware of weather patterns in areas you intend to explore and also be aware of this influence upon the flowering regimes of orchids.

The Column: Eric Scanlen

Singularybas "aestivalis" near home

On 9 Nov 2013, Michael Schneider, professional photographer, accompanied his daughter on a school trip, to the Puketotara Hut on the Matemateaonga Track, 1.6 km from the Whanganui River. This was not a photographic mission, so Michael carried only a point-and-shoot camera. So of course he happened upon *Singularibas* "aestivalis" in full flower and only 5m from the hut. How did he know that it was *S.* "aestivalis"? Well, he sent the pix to the Column who identified them from his own Te Paki slides and from the manuscript description by Henry Blencowe Matthews [1] inscribed here in the box. ►►►

HBM found the taxon originally by the banks of the Waimarino Stream, near Erua, whilst he was staying at Waimarino, now renamed National Park. But his description didn't get published, when he didn't get on with T.F. Cheeseman then went blind with cataracts, among other less traumatic events.

Margaret Menzies spotted *S.* "aestivalis" in seed in the Shenstone Block, Te Paki, on 22 Oct 1996 [J62:4,15 as large leaved *Corybas oblongus*]. But it was there in flower on 22 Sept 1997, three weeks earlier than *S. oblongus*, in the Te Paki Kauri Block. The Shenstone *S.* "aestivalis" fulfilled of HBM's description well, despite the site being over 600km north of Erua.

Now Michael has found *S.* "aestivalis" in the same Whanganui catchment as Erua and only some 38 km distant.

The silvery frosting showed on top of one of the leaves in Michael's specimen **Fig. 1**.

"Corysanthes aestivalis sp. nov.

"Slender 2-4 cm high. Leaf sessile, cordate, ovate or orbicular, often with repand margins: green above, usually pink-lavender beneath, silvery frosted, not so apparent on top where veins show clearly. Flower solitary, pedicellate, the ovary rather long, costate and subtended by a moderately large ovate-lanceolate bract with a much inferior one opposite. Dorsal sepal 9-13 mm long, cucullate, obovate-oblong when spread out, narrow towards the base, wider at its attachment, erect to the curve over the column, then costate with drooping sides, concave, the arched hood well above and projected over the labellum, lamina light greyish green, frosted, and flecked; traversed by 5 dark purple lines.

"Lateral sepals 1.5-2.5 cm long, spreading, attenuate-filiform, shortly channelled above the base, dark red, with a half turn towards the tips, the margins finely serrulate. Petals very similar to the sepals but shorter. Labellum about 9mm long, tubular, nearly horizontal, dark blood colour with a wide fimbriate border of various colours to the expanded front, the sides meeting under the dorsal sepal with an auricle open downwards on each side of the basal attachment; there is a spathulate gland in front of the column the adjoining lamina for half way up the orifice more or less papillose. Column 5 mm high (partly visible through the orifice) white with a maroon top and base line; with a large glandular process in front giving a stout basal appearance, inclined backward, the arched neck bringing the mammillate disc perpendicular, the small side lobes giving a triangular shape. Rostellum prominent. Stigma glandular and depressed. Anther obtuse. Pollinia yellow. A handsome little plant differing from C. oblonga in many respects and worthy of specific rank.

"River banks Waimarino. H.B. Mathews, H. Carse. December, January."

Fig. 1.

His specimen **Fig. 2** shows veins on top of the leaf as described; a variable trait? The veins show purple in the Shenstone specimen **Fig 3** from 18 Sept 1999.

The large floral bract behind the ovary also shows in Figs. 2 & 3 and the much inferior one opposite shows in Fig. 3. This secondary bract is the incipient second flower bud. In specimen Figs. 1 & 3, the costate (ribbed) and cucullate (hooded) dorsal sepal shows with its 5 lines, not dark purple as were HBM's, but red to maroon. The Shenstone taxon in **Fig. 4** also illustrates the drooping sides in a freshly opened flower. The lateral tepals are dark red and two of Michael's have the half turn towards the tip. The round mouthed labella in Michael's and Margaret's specimens are the required blood colour silvery fimbriate borders with red tinges but hardly multi-coloured. They display HBM's papillae (soft, dark calli) inside, in Figs. 1 & 4. But beware, half or more of *S. oblongus* also have these papillae inside their labella, possibly showing some exchange of genes between the taxa. The writer's underlining refers to traits in HBM's description.

Note the differences between the extended mid-ribs of the labella; Michael's has a long spike and Margaret's has a short Vee callus. Interesting but not enough to be a species differentiator.

Reference

Scanlen, E.A. Matthews & Son on orchids. NZNOG *Historic Series* No. 14, 2005.

Fig. 2▲

Fig. 3▼

◀Fig.4

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