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Will our mokopuna see these?



Corybas carsei, *Calochilus herbaceus*, *Thelymitra matthewsii*, *Sullivania minor*,
Thelymitra sanscilia—NZ orchids threatened with extinction: see Editorial.

Editorial: Ian St George

Conservation status of New Zealand indigenous orchids 2012

The authoritative *Conservation status of New Zealand indigenous vascular plants, 2012* by Peter de Lange, Jeremy Rolfe, Paul Champion, Shannel Courtney, Peter Heenan, John Barkla, Ewen Cameron, David Norton and Rodney Hitchmough assigns various levels of threat to NZ plants, among them the Orchidaceae.

The authors have revised the names of many plants, including several orchids, since the 2009 edition. Most “of these changes are the result of taxonomic revisions, amendments (including corrections to authors’ spelling and voucher numbers), or formal description of previously taxonomically indeterminate and ‘tag-named’ entities”. Thus they are suggesting,

Adelopetalum, *Ichthyostomum* revert to *Bulbophyllum*

Anzybas, *Nematoceras*, *Singularybas* revert to *Corybas*

Corunastylis reverts to *Genoplesium*

Cyrtostylis, *Townsonia* revert to *Acianthus*.

Diplodium, *Hymenochilus*, *Linguella*, *Plumatichilos* revert to *Pterostylis*

Myrmecchila, *Simpliglottis* revert to *Chiloglottis*

Petalochilus, *Stegostyla* revert to *Caladenia*

Sullivania reverts to *Paracaleana*

Winika reverts to *Dendrobium*.

Calochilus aff. *herbaceus* becomes *Calochilus herbaceus*

Thelymitra aff. *ixioides* becomes *Thelymitra ixioides*

We won’t be making those changes just yet. In any case, of greater importance than the suggested name changes is the level of threat assessed for many of our orchids.

Extinct: no formally named NZ orchid is known to be extinct yet.

Data deficient: *Corybas dienemus*, *C. rivularis*, *Nematoceras papillosum*, *Thelymitra colensoi*.

Threatened: *Calochilus herbaceus*, *Corybas carsei*, *Paracaleana minor*, *Thelymitra matthewsii*, *T. sanscilia*.

Nationally endangered: *Pterostylis micromega*.

Nationally vulnerable: *Pterostylis irwinii*, *P. puberula*, *P. tasmanica*, *Spiranthes novae-zelandiae*.

At risk: *Prasopphyllum hectori*, *Pterostylis paludosa*, *P. tanypoda*, *P. tristis*.

Naturally uncommon: *Acianthus viridis*, *Bulbophyllum tuberculatum*, *Caladenia alata*,

C. atradenia, *C. bartlettii*, *C. variegata*, *Calochilus paludosus*, *C. robertsonii*, *Corybas rotundifolius*, *Danhatchia australis*, *Drymoanthus flavus*, *Genoplesium nudum*, *G. pumilum*, *Molloybas cryptanthus*, *Pterostylis auriculata*, *P. cernua*, *P. foliata*, *P. humilis*, *P. porrecta*, *P. silvicultrix*, *Thelymitra formosa*, *T. ixioides*.

Nonresident Native:

Vagrant: *Chiloglottis formicifera*, *C. trapeziformis*, *C. valida*, *Pterostylis nutans*.

Coloniser: *Cryptostylis subulata*, *Pterostylis alveata*, *Taeniophyllum norfolkianum*, *Thelymitra malvina*.

Not threatened: *Acianthus oblongus*, *A. reniformis*, *A. sinclairii*, *Adenochilus gracilis*, *Aporostylis bifolia*, *Bulbophyllum pygmaeum*, *Caladenia chlorostyla*, *C. minor*, *C. lyallii*, *C. nothofagei*, *Chiloglottis cornuta*, *Corybas acuminatus*, *C. cheesemani*, *C. iridescens*, *C. longipetalus*, *C. macranthus*, *C. oblongus*, *C. orbiculatus*, *C. papa*, *C. trilobus*, *Dendrobium cunninghamii*, *Drymoanthus adversus*, *Earina aestivalis*, *E. autumnalis*, *E. mucronata*, *Gastrodia cunninghamii*, *G. minor*, *G. sesamoides*, *Microtis oligantha*, *M. parviflora*, *M. unifolia*, *Nematoceras hypogaeum*, *Orthoceras novae-zeelandiae*, *Prasophyllum colensoi*, *Pterostylis agathicola*, *P. alobula*, *P. areolata*, *P. australis*, *P. banksii*, *P. brumalis*, *P. cardiostigma*, *P. graminea*, *P. irsoniana*, *P. montana*, *P. oliveri*, *P. patens*, *P. trullifolia*, *P. venosa*, *Thelymitra aemula*, *T. carnea*, *T. cyanea*, *T. hatchii*, *T. intermedia*, *T. longifolia*, *T. nervosa*, *T. pauciflora*, *T. pulchella*, *T. tholiformis*, *Wairea stenopetala*.

The “Not threatened” plants are said to be “resident native taxa that have large stable populations” and we might be a little more concerned about the rarity of *Caladenia nothofagei*, *Pterostylis brumalis*, *P. venosa*. Interesting that *Caladenia chlorostyla* and *C. minor* are regarded as different. Note that *Corysanthes hypogaeum* Col. was rediscovered after *Corybas* had become *Nematoceras*, so retains that generic name (i.e., “*Corybas hypogaea*” has never been published). There is a large stable population of *Pterostylis auriculata* at Tahakopa and another on Ulva island. *Calochilus herbaceus* is plentiful in parts of the far north. So we can find details to disagree with.

Perhaps the greatest deficiency is the exclusion of plants that have not been formally described, yet are well-known entities, in many cases tagnamed for years. *Corybas trilobus*, *C. macranthus*, *C. oblongus*, *Prasophyllum colensoi* (to name but four) are clearly complexes of several taxa. Some of these taxa are indeed under threat (one, a form of *Corybas oblongus*, has already disappeared from its only known site). If the rationale for publishing these lists is to enhance awareness of rarity and thereby to improve the chances of survival, then this is a significant omission.

But these are picky points.

This is a valuable and important work, and the Department of Conservation and its authors are to be congratulated on this new edition.*

* de Lange, P.J.; Rolfe, J.R.; Champion, P.D.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Norton, D.A.; Hitchmough, R.A. 2013: Conservation status of New Zealand indigenous vascular plants, 2012. New Zealand Threat Classification Series 3. Department of Conservation, Wellington. 70 p.



The type locality: *Ian St George*

Shingle Peak and Pterostylis areolata

Donald Petrie described *Pterostylis areolata* in 1918,

Pterostylis areolata sp. nov.

Gracilis glabra ± 15 cm. alta. Folia pauca, caulina, sessilia, culmum amplectentia; inferiora scariosa squamiformia; superiora (plerumque 3) valde tenuia, in siccitate pellucida, lanceolata v. oblongo-lanceolata, acuta v. subacuta, plurinervia manifeste areolata, 3.5–4 cm. longa 1 cm. lata; culmo folium summum longe excedente. Flores solitarii 3.5 cm. longi ± 1.5 cm. lati. Galea pro parte majore erecta, pro parte tertia recurva; sepalum superius in apicem brevem acutum haud filiformem desinens, petalis acutis paulo longius; labii inferioris divisurae anguste obcuneatae, in apices subulato-filiformes summam galeam haud excedentes desinentes; labium subcrassum lanceolato – oblongum subacutum; columna gracilis elongata galeae partem erectam aequans.

Slender, glabrous, ± 15 cm. (6 in.) high. Leaves 4 or 5 (in the specimens seen), rather distant, sessile and sheathing the stem; the lower reduced to scarious sheathing scales; the upper very thin, pellucid when dried, 3.5–4 cm. (± in.) long, 1 cm. (± 3/8 in.) broad, lanceolate or oblong-lanceolate, acute or subacute, entire, narrowed towards the base, with conspicuous veins running nearly straight along their whole length and connected by delicate more or less oblique veinlets into an open network; the uppermost leaf placed about half-way up the stem and reaching about half-way up to the flower. Flowers solitary, 3.5 cm. (± 1 1/2 in.) long, ± 1–5 cm. (3/8 in.) broad, green more or less streaked with reddish-brown; galea erect for two-thirds its length, then sharply bent forwards; upper sepal ending in a short more or less acute non-filiform tip, a little longer than the

acute petals; lower lip narrow-cuneate for nearly half its length, forking widely into narrow obcuneate subulate-filiform-tipped lobes that do not exceed the top of the galea; lip brownish when dried, rather thick and firm, lanceolate-oblong, subacute with exserted tip; column slender, as long as the erect part of the galea, the lower lobe of its wings large long obtuse.

Hab.—Base of Shingle Peak, Awatere Valley, Marlborough; 3,000 ft.; in shade: L. Cockayne! Bealey, Waimakariri Valley, Canterbury: T. Kirk!

This appears to be a well-marked species. The late Mr. Kirk referred his specimens, which are in fruit and are rather stouter than Dr. Cockayne's, to *P. micromega* Hook, f., but they are destitute of radical leaves, while the cauline leaves are much larger and broader than those of *P. micromega*, and do not extend above the middle of the stem. As I have seen, only dried specimens, the details of the structure of the column may be imperfectly sketched here.[1]

Petrie was appointed Inspector of Schools for Otago in 1873 and became a member of the Otago Institute in 1874, when his interest in botany developed. Like Colenso and Henry Hill, he used his travels to schools to gather specimens. He made collecting trips with Leonard Cockayne in 1893. Cockayne spoke of his thoroughness as a collector: during one of their trips “he looked neither to right nor left, but steadily gazed at the carpet of plants hour by hour, pausing only to collect those which were new to him or which he wished to examine”. Cockayne wrote his obituary for the *Transactions*. [2]



Pt. areolata nat. size.
 a. the holotype in the Dominion Museum ; b. seeding stage ; c. juvenile.
 (b and c, supporting type material).

Fig.1: *Pterostylis areolata*: the drawing accompanying ED Hatch's 1949 "The New Zealand forms of *Pterostylis* R.Br." Trans RSNZ 77: 234–246.

Fig. 1 is ED Hatch senior's drawing of the type specimen: you can see the pressed plant, with the handwritten inscription, "*Pterostylis pellucida areolata*: sp. nov." at <http://collections.tepapa.govt.nz/objectdetails.aspx?irn=719782&term=pterostylis+areolata>.

The original collection

Petrie's friend Leonard Cockayne collected *Pterostylis areolata* from the "base of Shingle Peak, Awatere Valley, Marlborough" at 3000 feet and in shade.

Cockayne's diaries do not give detailed itineraries, so it is hard to say exactly when and where he collected it, but he wrote in a paper published in 1912 that other species "from Marlborough and western Nelson were collected by Mr. C. E. Foweraker and myself, our collection from the Awatere Valley and its surrounding mountains numbering 303, but only a few are published here." [3]

In that paper he wrote (of *Ranunculus cheesemani*), "It is everywhere in slowly running water in the Acheron valley," which suggests he and Charles Foweraker may have found the orchid while approaching Shingle Peak along that route.

There is a Cockayne notebook in the Te Papa collections entitled *Marlboro list of species; Plants of Awatere River Basin*, in which, under "Orchidaceae" Cockayne has entered "Pt. ~~barbata~~ *foliata*". [4] I wonder if it was that *Pterostylis* which he gave to Petrie to describe later?

I had been told the type specimen could be *P. foliata* and that *P. areolata* has not been found in the area since Cockayne's discovery.

Under Shingle Peak now

The opportunity, presented by the Group's meeting at nearby St Arnaud in November 2013, was too good to miss, and Graeme Jane, already botanising in the South Island, was able to join me in exploring new territory. We accordingly walked up the Kennett River from the Muller Station part of the Awatere Valley road on 21 November 2013.

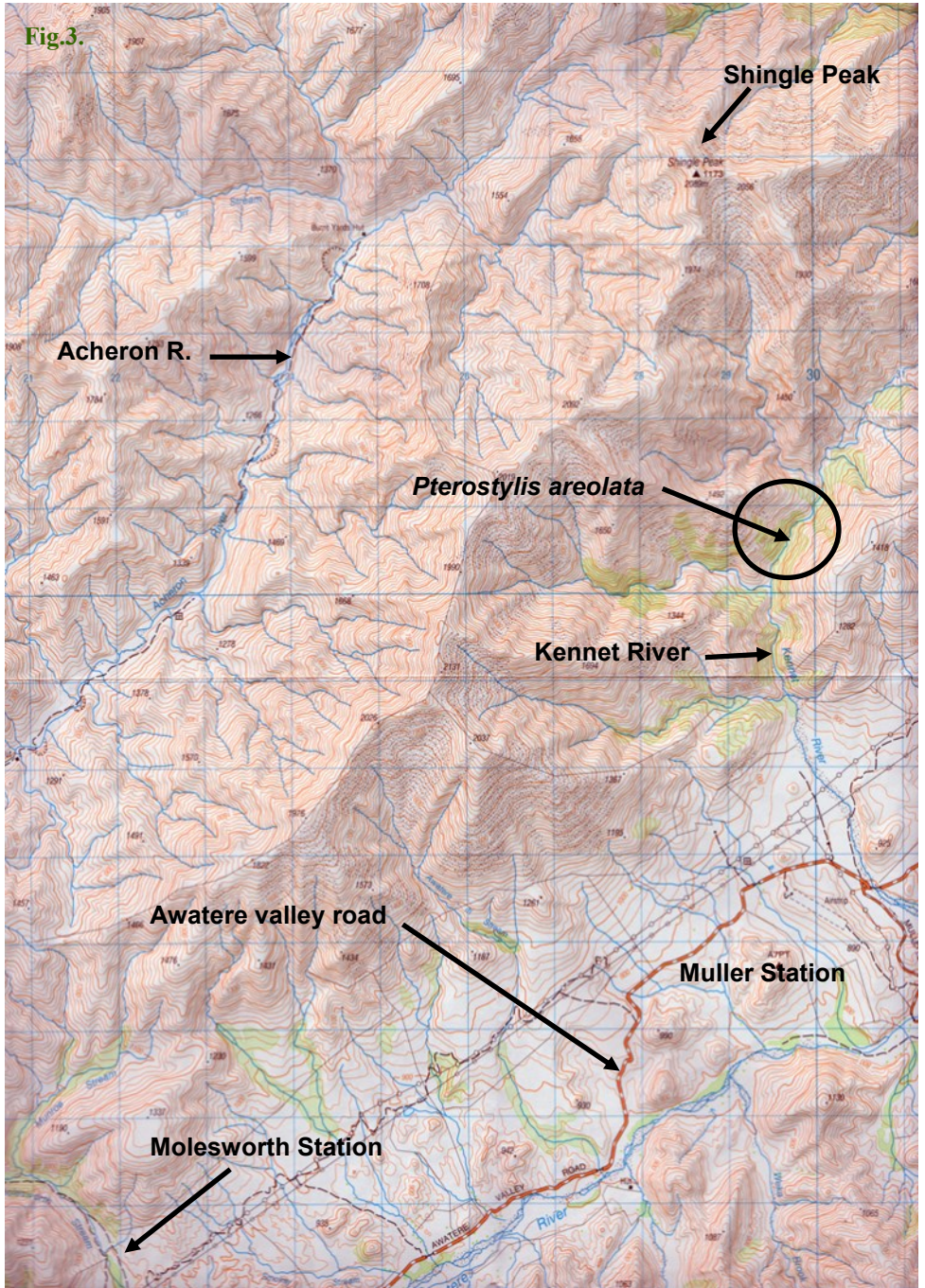


Fig.2: The Kennett river, Shingle Peak in cloud, near where *Pterostylis areolata* was found.

It is a boulder-strewn, matagouri-obstructed, winding mountain stream, repeated floods having taken the topsoil, which is thin, dry and apparently entirely devoid of orchids. We walked for an hour, without seeing so much as a *Microtis*, until we reached an area with scrubby beech trees clinging to the steep scree slopes. Disappointed, we turned for home.

Then Graeme spotted a damp area under beech, where there was rather more soil, and suddenly called "Pterostylis!" then "areolata!" And there it was: a group of perhaps 20 plants, perfectly in pellucid flower, at (or at least near) Cockayne's type locality, 101 years later. Graeme claimed with characteristic modesty that it was "Just good luck," but it wasn't. He found it because he knew the kind of habitat *Pterostylis* enjoys, and he searched there. Habitat, habitat, habitat.

Fig.3.



References

1. Petrie D 1918. Descriptions of new native flowering-plants. Transactions RSNZ 50: 207–211.
2. <http://www.teara.govt.nz/en/biographies/2p14/petrie-donald>
3. Cockayne L 1912. Some hitherto-unrecorded plant-habitats. Transactions RSNZ 45: 251–263.



◀ Fig.4: *Pterostylis areolata* in shade below Shingle Peak, Kennet River, near its type locality, Awatere valley.

The New Zealand Native Orchid Group

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**WE MAY NOT SHARE
AUTHORS' OPINIONS .**

Original papers

Diplodinium brumale: the winter flowering kauri orchid

By Emma Bodley

New Zealand greenhood orchids are thought to deceive male fungus gnats into pollinating their flowers. However pollinator observations are rare and therefore make it difficult to investigate this hypothesis. As part of my Master's research at the University of Auckland, I aimed to investigate the mating system and pollination of the winter flowering kauri greenhood, *Diplodinium brumale* (Fig.1). When looking for field sites of *D. brumale* in late March to early April 2013, it became quickly apparent that the dry summer we had in Auckland affected the flowering of this species. Juvenile rosettes were difficult to find until late April, early May. This delay in rainfall meant that flowering was much later than anticipated. However, I found that a period of heavy rainfall following a dry period did trigger flowering of *D. brumale* from looking at the obvious rainfall patterns during 2013 and historical rainfall and phenology records. Higher rainfall during the flowering season also promoted higher plant growth rates. At one site in Swanson, west Auckland, approximately 600 plants were growing in very close proximity to kauri (*Agathis australis*) and the second site located North of Auckland near Leigh marine reserve, had 200 plants growing at the base of kauri. Flowering of individual plants commenced and concluded within a week of each other. Only after all flowers were closed, did fruit and seed set occur. This species had a very low fruit set and even lower seed set, despite its self-compatibility. The high number of seeds per capsule could counteract this low reproductive output. *D. brumale* is likely to suffer from pollen and pollinator limitations, creating a low reproductive output at both sites. These orchids are nectarless, and along with their trap mechanism, are thought to use deceit to entice pollinators. However, from weekly observations of these orchids from April to October, no pollinator interactions with the plants were observed. I

trapped insects around the orchid populations and most insects were Mycetophilidae (fungus gnats). Male fungus gnats are predicted to be the pollinators of greenhood orchids; however the lack of pollinator behaviour could not confirm this hypothesis. No trapped insects had pollinia attached to them therefore the pollinator identity remains unconfirmed. Pollinators were not found inside the flowers suggesting that they are not used for shelter, however small spiders were found sheltering within the flowers. They are not likely to be contributing to pollination as they were always found on the opposite side of the labellum to the pollinia. Pollinators are likely to be in low abundances in these areas, contributing further to pollination limitations.



Fig.1: *Diplodinium brumale* in full flower. Photo Emma Bodley.

Australian notes: David McConachie

1. A tale of two cities – London & Burnside

by Robert & Rosalie Lawrence,

from the Journal of the Native Orchid Society of South Australia Inc. October 2013 Vol. 37 No.9

Orchids and the concrete jungle that makes up a city don't seem together, particularly the terrestrial orchids. Yet in the heart of one of the world's most well known capital cities such an orchid was found. On the 19th July 2013, the Telegraph reported that botanists from the Natural History Museum had found in the middle of London a white helleborine orchid (*Cephalanthera damasonium*) which had not been seen in that region since 1900. It was found in the Queen's backyard, Buckingham Palace. Despite the building, demolishing, rebuilding, bombing and rebuilding that has been going on for the last 400 years, here is an orchid which has survived to surprise the botanist. (For details see <http://www.nhm.ac.uk/about-us/news/2013/july/long-lost-orchid-found-in-buckingham-palace-garden122711.html>)

It is always heartening to hear good news about orchids but here in Adelaide we have our own encouraging story. Settlement in Adelaide is not as long as in London by a long short but in our own short time we have managed to clear and cover some very good land with concrete and bitumen. The result has been that much of our native flora has been lost with many of our orchid species being the first to disappear.

In recent years effort has been made to bring back the bush with revegetation projects. This work has not tended to involve the orchids, the work of Heather Whiting and her team of volunteers at Vale Park being an exception. Consequently, any orchids found on such sites tend to be the more robust species principally *Pterostylis pedunculata*, *Microtis* sp. and in some cases *Linguella* sp.

Finding anything else will always be special; but that is what has happened at a site where a Shell petrol station stood for decades on the corner of Portrush and Greenhill Roads. After the demolition of the service station the site was an area of bare clay for about a decade. Then in 2003, work began on restoring native vegetation incorporating a mini wetland in an area of 2,000 square metres that was given the name Linden "Bush Garden". Indigenous flora was sourced from the local region and the site has been kept meticulously weed-free by dedicated workers.

Originally 60 local species were planted with several other species arriving by themselves. Among the latter group are five species of orchids. These include a *Microtis* species and *Pterostylis pedunculata*, but the other three are more surprising – *Arachnorchis tentaculata*, a presumably small blue-flowered *Thelymitra* species and a *Caladenia* (syn *Petalochilus*) species. How they came to be there is a mystery. The long term viability of them will depend upon the continued maintenance of this unique site.

The City of Burnside should be congratulated both for its foresight and initiative as well as its ongoing support of this project.

2. NOSSA outing to Flinders

by Leo Davis, from the Journal of the Native Orchid Society of South Australia Inc. October 2013 Vol. 37 No.9

A very enthusiastic as well as resilient and stoic

gathering of 22 folk gathered to explore the same two splendid sites that we visited, a week earlier, last year. Folks came from as far as Mt Gambier and some had driven from Victor Harbor and the SE that morning. Many had detoured from extended tours and orchid searches they were already on, from Wilpena Pound to Yorke Peninsula to Eyre Peninsula.

We started at the private property of Bernie Hasse, which straddles Mambray Creek, where it reaches the main highway. Last year he told us it had been some years since the creek had flowed. It flowed for some weeks this year and Bernie said it was still flowing below the rocky bed. We were shown at least three species of *Oligochaetochilus*.... Whoops! I think the current “correct” generic designation is now *Pterostylis*, but I’ll stick to *Oligochaetochilus*, till the end of this report. Bernie started showing us *Oligochaetochilus bisetus* growing in bushland, emerging from a thicket of indigenous and/or weed grasses. On the banks of Mambray Creek he showed us *O. boormanii* and, on the banks but also, amazingly, among the stones in the actual creek bed the as yet undescribed *O. sp.* “Upper Spencer Gulf”. I could not keep up with the expert discussion between Ken Bayley, Malcolm Houston, Thelma Bridle, Kevin Schneemilch, and others, as they nodded or mumbled agreement about features (“Do you see the crown on top of the labellum?) that I could not see, but which I am sure were there to be seen by the trained eye. Ken Bayley was sure we saw four and maybe five species.

Perhaps it was because we were a week later this year, or because there had been a hot spell lately, but the spider orchids, *Arachnorchis toxochila*, had finished flowering and the *Prasophyllum occidentale* had just a couple of tired flowers open at the very top of a couple of spikes.

We had lunch on the veranda of Bernie’s house overlooking his native garden which was at its spring time best. I thought of the Floriade Festival, currently running in Canberra. Bernie’s garden, the culmination of 12 years thoughtful labour, contains not only exclusively

Australian species but only local species. Almost all have been grown from hand collected seed that he has germinated. We were in the presence of a master gardener.

After lunch a slightly reduced party of 17 headed to Nelshaby Gully, in Mount Remarkable National Park, a few km north of Port Pirie. Errol Shepherd led us on a great walk and Frank Gordon filled us in on the history of the reserve, which included a Frenchman who was an early conservationist and ornithologist, ahead of his time, who established the area as a bird sanctuary and picnic spot for the town of Port Pirie. Frank showed us a project that has brought together plants of the critically endangered spiny daisy, *Acanthocladium dockeri*, long thought to be extinct, from the five known isolated locations. It turns out there is a 6th site, located, by Bob Bates, yes, our treasure, back in August 2011, on a roadside east of Melrose. We should not be surprised that his keen eye spotted it. The six known spiny daisy populations are scattered from near Hart in the south to the most northerly population near Telowie. Coincidentally Bob’s find was reported in the local Port Augusta newspaper on the Monday after our trip.

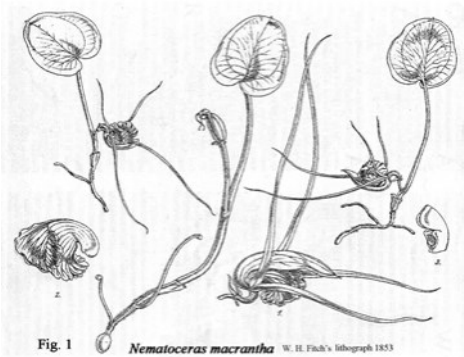
Errol was apologetic about the poor showing of orchids (hardly his fault) and we all enjoyed those he showed us or we found, including *Arachnorchis toxochila*, *A. species* ‘southern Flinders’ and one flowering specimen of what Bob Bates identified last year as “small brown bayonet spider so common on Eyre Peninsula.” It was encouraging to see numbers of seed pods of the first named spiders. Somebody may have found the *Arachnorchis species* ‘Desert’, that Bob Bates did last year, but I was not aware of it.

I guess that we saw at least three of *Oligochaetochilus* ssp, certainly *Oligochaetochilus bisetus*, but I fell behind the experts, way up ahead, who’d have identified them. I heard Thelma Bridle’s suggestion that one tall specimen was most likely *O. excelsus*.

The Column: *Eric Scanlen*

Nematoceras macranthum manhunt progress

The incomparable J. D. Hooker described *Nematoceras macrantha*, [1] coining the genus *Nematoceras* (thread horn) but with the Latin gender amiss, using “*macrantha*” instead of *macranthum*, or so we are told. He had specimens from Port William, at Stewart Island, by David Lyall and also by William Colenso, but from the Bay of Islands or Cape Turnagain. Mark Clements designated Colenso’s Cape Turnagain specimen [J120:4] as the type specimen. Hooker included W. H. Fitch’s lithograph, **Fig. 1**, (J120:2, Fig. 1 in colour),



with his description, where flower **1** with no leaf, looks like a pale dorsal sepal form of the maroon one that Ian St George photographed at Shag Point, Palmerston, in 1990, **Fig. 2** (here tagged *N. “macmaroon”*) with flower wholly above the leaf. Fitch’s Fig. 1 may be from Colenso’s northern specimens but his Fig. 3 with the recurved dorsal sepal could be *N. papillosum* Col. However, none of the many forms in today’s images show the “undulate recurved edges” that Hooker described and that Fitch drew. Possibly the undulations were a feature caused by pressing the specimens? Where Fitch



got the colour from is unclear, not from preserved specimens, but J. D. Hooker may have described them to him from specimens he could well have seen during his three months in the Bay of Islands at the end of 1841.

The northern flowers have erect lateral-sepals, all that normally shows above a colony’s platform of leaves, in its preferred montane habitat of damp ground under canopy. Flower-leaf attitude also got lost in the pressed specimens. The northern form is well depicted in **Fig. 3** herein, where Mike Lusk has taken a side view from the edge of a colony on 17 Oct 2010, at Boundary Steam Mainland Island (BSMI), Hawke’s Bay, in its normal, damp, montane habitat. This form does occasionally get exposed, by scrub clearing etc., when the petiole grows shorter, leaving the flower level with or above the leaf.



Hooker's description omits the gnat's egg pocket, noticed and described by Bruce Irwin [2]. The pocket is less well defined than those in both *N. trilobum* agg. with visible lower drain hole and in *Singulariybas* where the pocket is more of a tube. In *N. macranthum*, the egg

pockets, as seen by the Column to date, are formed above the sharp, inner-flexure of the labellum midrib, by a thickening of the labellum walls. Possibly an ancient form, since adapted to a greater extent by the other two? The Column has sectioned only a few forms of *N. macranthum* agg. then only recognised the egg pocket, years later, in the 3-D slides, as a slight shadow above the inner flexure, and only after studying Bruce's drawing and notes, Fig. 4. Do all the forms of *N. macranthum* have gnat's eggs pockets? Fig. 5, shows the egg pocket in *N.*

"mackihi", just above the inner flexure of the midrib, as well as the unfortunate fungus gnat which tried to lay its eggs in the pocket but perished, stuck to the stigma, before the razor blade dismembered it. A complete plant of *N.* "mackihi" (Fig. 6) of this form of *N. macranthum*, grew in a colony on a dry hump under canopy, by the junction of Kihī Track and Kaimango Rd., off Kawhia Rd. Flowers were normally level with the leaf in this distinct form. Note that the succinct tags here, are for keen orchidologists to recognise these taxa in different sites, but only as a form, not necessarily as any distinct species.

Fig. 4

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Nematoceras macranthum

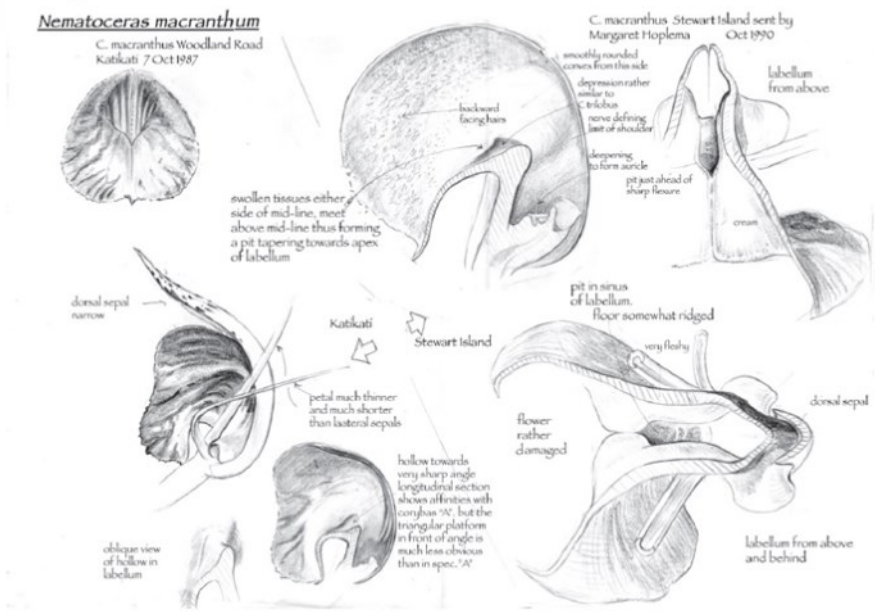




Fig. 5 *N. "mackihi"*



Fig. 6 *N. "mackihi"*



Fig. 7 *N. papillosum* s.s.

The also incomparable William Colenso, found and described, from Hawke's Bay, *Corysanthes papillosa* [3] now *Nematoceras papillosum*, with a short peduncled flower springing from either top, bottom or middle of a long petiole. He described its wide labellum as having a whitish bib with purplish spots. The narrow dorsal sepal is recurved, extending some 2½ lines (±6mm) beyond the labellum. Mike Lusk's Fig. 7 from Devils Elbow on SH2, Hawke's Bay, is typical from near the type locality. Ian St George's pix [J120: Figs 3&4] clearly illustrate the form with flower at the base of the petiole. Differing petiole length is likely to be related to light exposure. *N. papillosum* is a distinct species of course, but closer to *N. macranthum* s.s. than several other forms.

Ross Bishop and Bruce Irwin collected a widespread form of *N. papillosum* Fig. 8, at Retaruke, ER 23/24, 160m elevation, on 5

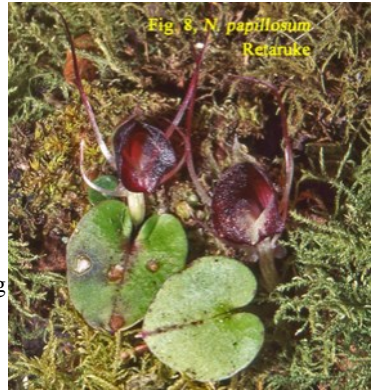


Fig. 8 *N. papillosum* Retaruke



Fig. 9 *N. papillosum*, Nelson

Nov 1997 then delivered it to the field party at Ohakune. Bruce's description of the dreadful state of the winding road along the Retaruke River, still rings in the Column's ears but habitat for the orchids didn't register, if it were announced. Note one flower above the blighted leaf and the other with longer petiole.

Mark Moorhouse pointed out a similar likely *N. papillosum* to the Column at Miner River Track, ER47, in Nelson on 28 Nov 2002 (Fig. 9), although the whitish bib also lacks the spots, the dorsal sepal is only mildly recurved and the site is ±300km south of Colenso's type locality. Nelson has other similar forms, i.e. from Hawke's Lookout, Takaka Hill (J123:43,48, Fig 35) and from Canaan Rd. (J123:43,47, Fig. 34). The last had short peduncles in all cases but, a short petiole on a dry bank in the sun and a long petiole in the damp, under canopy as per Colenso's description.



Fig. 10, *Nematoceras macranthum*
Ernest Isles

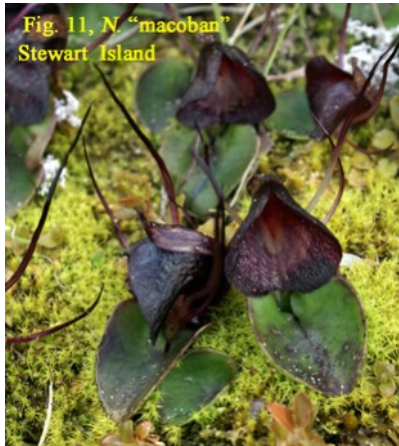


Fig. 11, *N* "macoban"
Stewart Island



Fig. 12, *N. macranthum* Stewart Island

Back on Stewart Island, Rebecca Thompson found the **Fig. 10**, form on the Ernest Islands, hard on the west coast, similar to the northern form but with a still shorter peduncle. Here at latitude 46° 57' habitat is near sea level. Ian St George found *N. "macoban"*, another distinctive form, **Fig. 11**, growing in full light, roadside, between Oban and Horseshoe Bay, on 27 Nov 2012. Note the purplish leaf, below the very dark flower with wide labellum and strongly recurved dorsal sepal. Ian spotted **Fig. 12** near Port William, akin to Rebecca's but no sign here yet of David Lyall's type specimen.

At Upper Trotter's Gorge, ER65, Ian found **Fig. 13**, in shade under a limestone bank, with flower bigger than the leaf and further above the leaf than any other *N. macranthum*; reminiscent of *N. "viridis"* alias "whiskers". There were also extensive colonies there in the drip-zone, in bright light, under limestone bluffs, with flowers above the leaf.

Ian also scored *N. "maconetai"* (**Fig. 14**) by the Onetai Rd., Omaha, ER10. Cara-Lisa Schloots found the same form on the side of the ER12 Onewhero-Wairamarama Rd., on 22 Oct 2012. Amongst this large colony she photographed *N. "macred"*, **Fig. 15**, a red, tubular form with a dorsal sepal like a dagger. Peter Schloots took Cara-Lisa and the Column out there on 3 Nov 2012, but too late for *N. "macred"* as it happened, although in time for the massed dark form, as in **Fig. 14**, plus a number of reddish hybrids **Fig. 16**, around the site of the *N. "macred"* colony. These had your Column lying flat in the thankfully dry water-table, photographing them. Note the recurved dorsal sepal on this hybrid of *N. macred*" and *N. "maconetai"*. A delayed field trip to this site on 3 Nov 2013 by Pam, Cara-Lisa and the Column was again too late for *N. "macred"*.

The great majority of *N. "maconetai"* had finished too and the **Fig. 16** hybrids had been vanquished by concreting of the water-table.

The highest altitude form of *N. macranthum*, may be **Fig. 17**, from the Waitonga Falls Track on Ruapehu, at 1,250m elevation, on 3 Jan 1997, on the high side of the track. It was the only one flowering in that colony and Bruce Irwin, who didn't take a specimen, displayed some anxiety at the Column photographing such a freakish looking *N. macranthum*. Was it a

freak or were the whole colony the same? Anyone passing that way about New Year's Day, please have a look.

Mike Lusk sent **Fig 18** and its sectioned view **Fig. 19**, from Mangarakau Stream, ER29 where he was pushed for time on 30 Oct 2012, by his field party. What's new? It has the near circular labellum opening and twin flexures on the labellum midrib but no trace of an egg pocket. The gable-roof style dorsal sepal stands straight at $\pm 45^\circ$. Confirmation needed for this taxon before coming to any conclusions about it.

Progress to date has revealed a number of distinct forms in the *Nematoceras macranthum*/*papillosum* aggregate. What else have you got in your orchid patches? Do please study them closely and let the Editor see any colonies that either confirm the forms here presented or show up as



Fig. 13. *N. macranthum*
Trotters Gorge



Fig. 14. *N. "maconetai"*
Omahu



Fig. 15, *Nematoceras "maced"*
Onewhero-Wairamrama Rd.



Fig. 16, *N. "maced" x "maconetai"*



Fig. 17. *N. macranthum*
Waitonga Falls Track



Fig. 18, *N. macranthum*
Mangarakau Stream



Fig. 19, *N. macranthum*

Mangarakau Stream

distinctly new taxa in this neglected aggregate.

References overleaf ►

References

1. Hooker, JD, *Nematoceras macrantha* (Hook. f.) Flora Novae Zelandiae Part 1. 1893, p250
also St George IM, The Hookers on the New Zealand Orchids, NZNOG Historic Series 1989, No.7, p29.
2. Tyler, B. et St George IM, Bruce Irwin's Drawings of New Zealand Orchids, 2007, book or DVD, p257
3. Colenso, W, *Corysanthes papillosa*, Trans. NZ Inst, 1884, 16: p337.
also St. George, IM, Colenso on Orchids, NZNOG Historic Series, No. 1, 1989, p24.

Notes &c.

Mike Lusk emailed (5 November), “We've just been staying near the Whangarei Heads and on the Coromandel so I had a good chance to check out their orchids. Nothing too exciting but I did catch an ant stealing a pollinium from an onion orchid. I missed the shot of both ants with their heads deep in their respective flowers.”

Ant pollination of orchids is an interesting subject. Below I have summarised what *Genera Orchidacearum* (Vol. 2) has to say of *Microtis parviflora*. [1]

“Only two detailed studies of insect pollination have been conducted, both on *Microtis parviflora*, a widespread and variable species (Jones 1975 [2]; Peakall and Bearn 1989 [3]). These studies found *M. parviflora* is primarily pollinated by several species of small wingless worker ants. The dominant pollinators in both studies were species of *Iridomyrmex*—an unidentified species near Melbourne and *I. gracilis* near Sydney.”

Ants actively foraged on flowers up to three days old, whereas older flowers were examined briefly, or ignored. They foraged only on newly opened flowers beginning at about 07.30 but with most activity between 08.30 and 11.30.

Visiting ants would climb onto the labellum and probe briefly along it until they reached a pool of nectar in a depression between the bilobed basal labellum callus and the foot of the column. Here they would feed for up to six minutes. Movements of the head during feeding brought the viscidium on the overhanging rostellum into contact with the frons just above the mandibles. Some ants carried up to four pollinia. Over 90% of



flowers were successfully pollinated.

Ant pollination is rare, perhaps because they secrete antibiotics which protect the ants but destroy the pollen.

Iridomyrmex gracilis lacks destructive secretions, and the clumped pollen of orchids, forming pollinia, means that not all the pollen comes into contact with the ant's body. In the case of *Microtis parviflora*, furthermore, the pollinia are held away by a stipe.

Bob Bates has observed small ichneumonid and braconid wasps pollinating *Microtis unifolia*, near Adelaide and I have seen the same in New Zealand.

“Hybrids are not often reported in *Microtis*,” [4] perhaps because of specific pollinator/species relationships.

1. Pridgeon AM, Cribb PJ, Chase MW (2001). *Genera Orchidacearum: Volume 2. Orchidoideae (Part 1)*. Oxford University Press.

2. Jones DL (1977). The pollination of *Microtis parviflora* R.Br. *Annals of Botany* 39: 585–9.

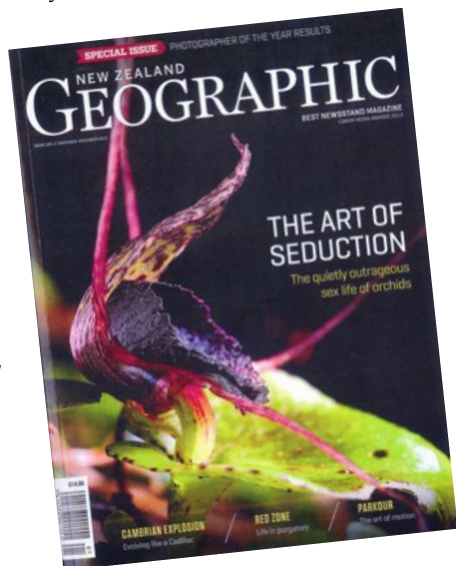
3. Peakall R, Handel SN (1993). Pollination of the orchid *Microtis parviflora* R.Br. by flightless worker ants. *Functional Ecology* 3: 515–22.

4. Bates R (1981). Observations of pollen vectors on a putative hybrid swarm of *Microtis* R.Br. *The Orchadian* 7: 14.

It was good to see Carlos Lehnebach featuring prominently in a recent *New Zealand Geographic*—good photographs and well worth reading.



C*Corybas puniceus* [Tsan-Piao Lin and Wei-Min Lin 2009. *Newly Discovered Native Orchids of Taiwan (III)*. *Taiwania*, 54(4): 323-333, 323]. If you are interested in seeing more exotic members of the *Corybas* alliance, go to Google images and enter “corybas”.



Alastair Nicholl emailed (5 November) with, “a photo of the Native Orchid Group Display at the Orchid Expo in New Plymouth last weekend. I set it up on Wednesday. I could not attend on the opening day on Friday but was back on Saturday and Sunday. I appreciated the help from Ernie Corbett to keep an eye on things when I was not around. It was good to catch up with a few of the Group’s members that made themselves known. As this was also the opening weekend of the Taranaki Garden Festival we made contact with a wide range of people from around the NI that were not associated with the Orchid Show and there was some interesting discussions and may be some new members.” ▼



The Picture Library at Te Papa holds glass negatives of a large number of orchids photographed nearly a century ago by HB Matthews. These have recently been printed, and the prints can now be viewed online. Go to <http://www.tepapa.govt.nz/images/> and enter the number from my annotated list below—Ed.

B.002909; *Pterostylis gracilis*; 1917–1928; Matthews, Henry (*Pterostylis trullifolia* = *Diplodium trullifolium* – or ?? *P. brumalis* = *D. brumale*)

B.002916; *Pterostylis* Specimens; 1923; Matthews, Henry (*Pterostylis brumalis* = *Diplodium brumale*)

B.002917; *Pterostylis* Specimens; 1923; Matthews, Henry (*Pterostylis brumalis* = *Diplodium brumale*)

B.002958; *Caladenia* Specimens; 20.11.1922; Matthews, Henry (*Caladenia chlorostyla* = *Petalochilus chlorostylus*)

B.002959; *Caladenia* Specimens; 1917–1928; Matthews, Henry (*Caladenia chlorostyla* = *Petalochilus chlorostylus*)

B.002960; *Caladenia* Specimens; 17.10.1928; Matthews, Henry (*Caladenia atradenia* = *Stegostyla atradenia*)

B.002961; *Caladenia* Specimens; 26.12.1922; Matthews, Henry (? *Caladenia variegata* = *Petalochilus variegatus*)

- B.002962; *Caladenia Specimens*; 17.10.1926; Matthews, Henry (*Caladenia atradenia* = *Stegostyla atradenia*)
- B.002993; *Corysanthes triloba*; 30.05.1922; Matthews, Henry (*Corybas trilobus* = *Nematoceras trilobum*, upside down)
- B.002994; *Corysanthes triloba*; 26.11.1922; Matthews, Henry (*Corybas trilobus* = *Nematoceras trilobum*)
- B.028635; *Thelymitra aristata*; 1917–1924; Matthews, Henry (*Thelymitra longifolia*)
- B.028636; *Thelymitra cheesemani*; 19.11.1922; Matthews, Henry (*Thelymitra pauciflora* complex ?*T. malvina*)
- B.028637; *Thelymitra scaphifolia*; 1917–1924; Matthews, Henry (*Thelymitra longifolia* complex)
- B.028640; *Thelymitra pachyphylla*; 28.12.1921; Matthews, Henry (*Thelymitra pulchella*)
- B.028642; *Thelymitra acuta*; 1917–1924; Matthews, Henry (*Thelymitra formosa*)
- B.028645; *Thelymitra acuta* (new species); 1917–1924; Matthews, Henry (*Thelymitra formosa*)
- B.028656; *Pterostylis matthewsii*; 16.07.1921; Matthews, Henry (*Pterostylis nutans*)
- B.028657; *Pterostylis matthewsii*; 16.07.1921; Matthews, Henry (*Pterostylis nutans*)
- B.028662; *Prasophyllum rufusa*; 05.01.1923; Matthews, Henry (R: *Genoplesium nudum* = *Prasophyllum nudum*; L: *Spiranthes novaezelandiae*)
- B.028669; *Pterostylis matthewsii*; 22.08.1922; Matthews, Henry (*Pterostylis nutans*)
- B.028671; *Corysanthes cheesemani*; 06.08.1923; Matthews, Henry (not "*chesemani*") (*Corybas cheesemani*)
- B.028675; *Prasophyllum setulosum*; 20.04.1922; Matthews, Henry (*Genoplesium nudum* = *Prasophyllum nudum*)
- B.028681; *Pterostylis grammis*; 1917–1924; Matthews, Henry (*Pterostylis trullifolia* = *Diplodidum trullifolium*)
- B.028690; Unidentified Orchid specimen; 1917–1924; Matthews, Henry (*Thelymitra matthewsii*)
- B.028702; *Caladenia scigua*; 1917–1924; Matthews, Henry ("exigua" not "*scigua*") (*Caladenia alata* = *Petalochilus alatus* photographed with yellow filter)
- B.028703; *Thelymitra acuta*; 1917–1924; Matthews, Henry (*Thelymitra formosa*)
- B.028718; *Caladenia anigua*; 28.08.1921; Matthews, Henry ("exigua" not "*anigua*") (*Caladenia alata* = *Petalochilus alatus* – yellow filter)
- B.028719; *Caladenia minor*; 11.12.1921; Matthews, Henry ("*Caleana*" not "*Caladenia*") (*Caleana minor*)
- B.028720; *Caladenia minor*; 04.11.1921; Matthews, Henry ("*Caleana*" not "*Caladenia*") (*Caleana minor*)
- B.028727; *Corysanthes triloba*; 29.11.1922; Matthews, Henry (*Corybas trilobus* = *Nematoceras trilobum*)
- B.028733; *Prasophyllum setulosum*; 10.11.1923; Matthews, Henry (*Genoplesium nudum* = *Prasophyllum nudum*)
- B.028734; *Prasophyllum setulosum*; 20.04.1922; Matthews, Henry (*Genoplesium nudum* = *Prasophyllum nudum*)
- B.028736; *Prasophyllum setular* and *Prasophyllum pumilum*; 04.03.1922; Matthews, Henry (*Genoplesium pumilum* and *G. nudum*)
- B.028740; *Corysanthes specimen* (new species); 31.12.1921; Matthews, Henry (*Corybas oblongus* = *Singularibas oblongus*)
- B.028741; *Corysanthes australis*; 31.12.1923; Matthews, Henry ("*aestivalis*" not "*australis*") (*Corybas oblongus* = *Singularibas oblongus*)
- B.028742; *Corysanthes australis*; 31.12.1923; Matthews, Henry ("*aestivalis*" not "*australis*") (*Corybas oblongus* = *Singularibas oblongus*)
- B.028768; *Earina australis*; 1917–1924; Matthews, Henry ("*aestivalis*" not "*australis*") (*Earina aestivalis*)
- B.028771; *Caladenia specimens*; 1917–1924; Matthews, Henry (blurred shot) (*Caladenia* ? *variegata* = *Petalochilus variegatus*)
- B.028772; *Caladenia specimens*; 26.10.1922; Matthews, Henry (no image available)
- B.028797; *Thelymitra acuta* (new species); 04.01.1922; Matthews, Henry (no image available)

Mark Moorhouse (10 November 2013),
“Here, as promised, is a report on the Brown River Reserve, Rai Valley, *Pterostylis* population.

“Firstly, we learned a lesson about 'armchair botany' (judging species by photograph only) but as it happens it was not such a bad thing, because it inspired Georgina and me to visit the Reserve for the first time on 8 November resulting in another interesting find.

“We failed to find Kevin Grant's *Pterostylis auriculata*, but did find two or three very wide leaved *Pt. banksii* in flower in addition to some rather normal specimens. *Pt. graminea* can be found there too. The reserve is mature podocarp forest with a smattering of mature beech. Some areas are regenerating still and one or two fallen mature trees have created windows of opportunity for orchids.

“The exciting find was what could purport to be a new form of *Pterostylis*, and certainly a species unreported to my knowledge in Nelson/ Marlborough. It was photographs of these that I mistook for *Pt. auriculata*, and with some justification. Four to six leaved plants stand as high as 30+ cm with some leaves exceeding 18cm in length gracefully curving out from the stem in even arches. Atop the stem is a montana-sized flower (3cm tall) but outwardly a perfect replica of a *Pt. banksii* in miniature; however, closer examination reveals the labellum which most closely resembles *Pt. montana* with some definite elements of *Pt. graminea*. Examination of about 20 flowers we found still open and a further 10 that had just closed revealed a linear-oblong labellum of pale creamy-green, darkening toward the tip with a distinctive raised central ridge in black (reminiscent of *graminea*), the twist to it all was that it could be found with a twisted tip (about 10 plants to the left, 2 plants with no twist at all, and several more with twist to the right.) This brings to question just how good the twisted tip of labellum is as an identity factor for any species.

“*Field guide's Pt. aff. montana* from Bay of Plenty most closely represents any published un-named likeness but is far too short in the leaves. In the Brown Reserve plants all but the lowermost would

overtop the galea if pulled in against the stem, making it almost certainly a candidate to be *Pt. agathicola*, which may bust the capitalised 'ONLY IN KAURI FOREST' claim with yet another South Island find of a species which is purportedly found only north of the Bombay Hills.”

“Some flowers also displayed extremely long acuminate rolled lateral sepals.”





▲ *Pterostylis* aff. *agathicola*, Brown River Reserve, Rai Valley—Mark Moorhouse



◀
Lloyd Esler emailed (24 November), “Gastrodias are abundant in the pine forest on Sandy Point, Invercargill. I get kids to eat them on pine forest fieldtrips. *G. minor* and a bigger one. About a fortnight off flowering. I am claiming the world record: 22 came up together in my garden under *Pinus pinea* in December 2009—photo attached.”

A little colony of *Pterostylis* was growing in the Five Mile Creek gorge at Queens-town in late November. The photograph over-leaf would lead you to say it is *P. australis*, but it is only the size of *P. montana*—with an untwisted green labellum and flat stigma. ▶



▲ Neville Henderson photographed the green form of Winika in the Taranaki

◀ An unknown *Pterostylis* in the Five Mile Creek, Queenstown.

Peter de Lange emailed, “Yesterday I was out exploring the result of the January 2013 fire that had burned through dunefield and associated scrub and secondary regrowth forest north of the Claris Airport on Great Barrier Island. In one site my colleague and I stumbled upon masses of *Thelymitra pauciflora* s.l. growing amongst dense drifts of *Lotus suaveolens* and *Vulpia bromoides*. As usual for what we see around Auckland we found two forms with respect to stature, growing together, a robust plant typical of what we tend to call *T. pauciflora* up here and a small plant growing threaded through it, and which I guess on the basis of proximity and stature one could be tempted to suggest was another variant within the New Zealand *T. pauciflora* complex. However I think not—florally in all respects (bar one discussed below) both variants matched each other, corresponding closely to the form of *T. pauciflora* s.l. illustrated in Rolfe & de Lange (2010) on page 34, images G-J from plants photographed at Mahurangi West, north of Auckland.

“What caught my eye though was not the stature but the colour of post anther lobe. Irrespective of stature about 50% of the plants observed had the post anther lobe distinctly pigmented dark orange; the rest were the more usual yellow. On the basis of post anther lobe colour the orange-pigmented form more or less equated to the variant Rolfe & de Lange (2010) illustrated on page 39, as “Sandhills” based on images furnished by Kevin Matthews, and what has been equated by some to *T. brevifolia* (called in Rolfe & de Lange 2010—*T. cf. brevifolia*).

“Reference

“Rolfe, J.R.; de Lange, P.J. 2010: Illustrated guide to New Zealand sun orchids, *Thelymitra* (Orchidaceae). J.R. Rolfe, Wellington. 57pp.



The orange-topped column of a *Thelymitra* photographed in Northland some years ago by the editor. Is this just a colour form of *T. pauciflora*? ►

Side by side: Mike Lusk photographed two colour forms of *Simpliglottis (Chiloglottis) cornuta* ▼



Mark Moorhouse emailed (3 December) about “*Nematoceras trilobum* ‘roundleaf’ Rainbow Ski-field road.

“First I would like to take this opportunity to say a big thank you to all who attended the last AGM, meeting—you made the months of preparation all the more worthwhile for our tiny band of local members.

“I am writing this partly by way of apology, partly by way of correction and partly to demonstrate the fickle nature of making brief observations of our orchids, rather than doing full-out field studies. The taxon in this case is our South Island form of *Nematoceras* ‘roundleaf’.

“On the Saturday afternoon at our recent AGM a party of a dozen or so of intrepid orchid-hunters made the two km uphill trek to rediscover the site of a previous expedition, some 2 yrs before, which had located some plants which matched closest to description of the now infamous Sth Is *N.* ‘roundleaf’.

“Historically a party, in conjunction with Nelson’s Bot. Soc. had quite some years before, found a colony of a *Nem. trilobum* taxon several kilometres higher up in the valley in flower in Dec, which ‘The Column’ amongst others declared was *N.* ‘roundleaf’, an epithet I was in no position to debate, [having not ‘met’ Nth Is ‘roundleaf’], as my only previous encounter was on the Mt Arthur Tablelands two years before with a rather different looking plant which Dr Brian Molloy had identified as his *N.* ‘round leaf’ from Arthur’s Pass[?]. Nelson ‘roundleaf’ plants genetically have shown some variation from the general *trilobum* sequences.

“To return to our AGM visit: Our party did manage to locate a few nonflowering plants of a *Nem. trilobum* which demonstrated a roundleaf trait, however none appeared to be in flower, but another *Nem. trilobum* taxon with dark flowers and trilobate leaf was. Careful study of the photos I took of these produced some results which I now feel obliged to write about to make a clarification of their status. None of my photos display the distinctive hallmarks of the South Island *Nem* ‘roundleaf’ which occur in the Mt Arthur Tablelands colonies: ie, 1. A round leaf which is barely trilobed. 2. A long dorsal sepal which extends well past the labellum wings and is subacute. 3. A general consistent dark maroon and waxy appearance. 4. A dorsal sepal that is not rugose and a labellum that virtually lacks retrorse hairs.

“My humble opinion, which a number of people detected was in a state of indecision on the day, is now set, that our expedition failed to locate any flowering plants of the target species *N.* ‘roundleaf’, but instead managed to locate a good number of fine examples of *Nem. trilobum* ‘darkie’, which apparently have also found the habitat and growing conditions of the location, ideal.

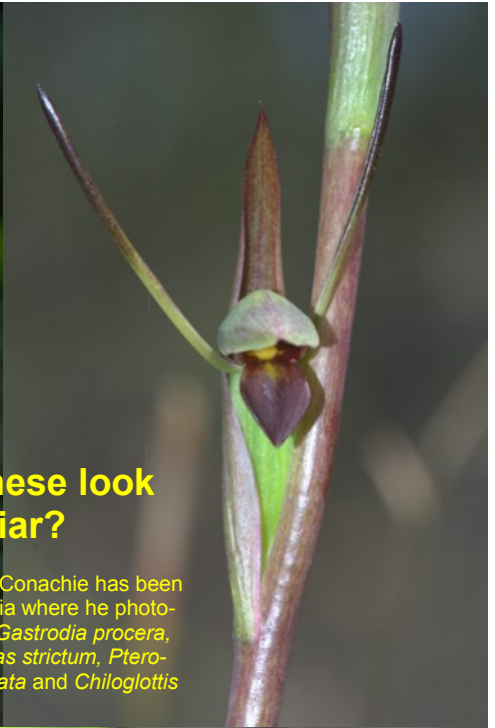
“I feel an apology due to those, who at great personal levels, made the effort to reach the site. It would be appropriate to rename the photos you took there as *Nem* ‘darkie’.. However all was not lost! I offer no apology for the beautiful day, magnificent mountain scenery and enjoyable camaraderie

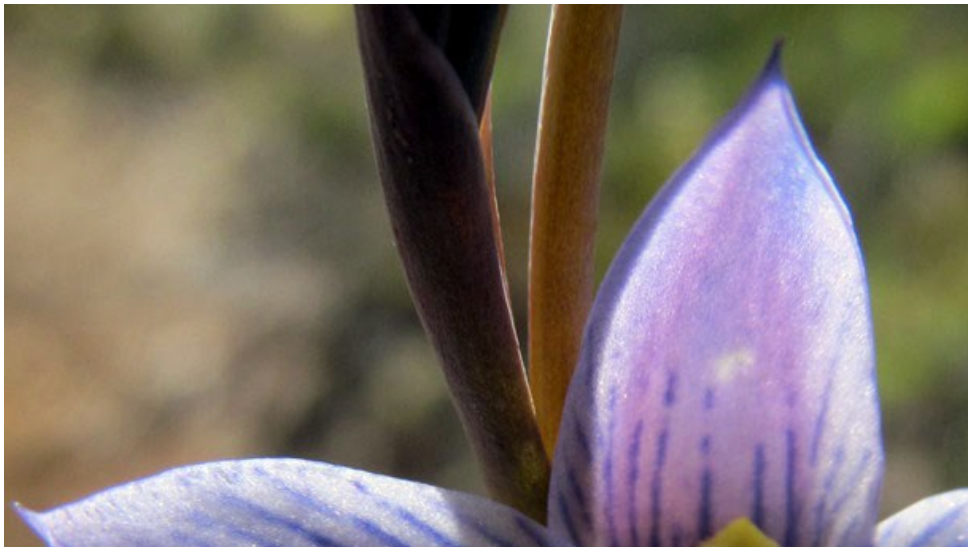
“It is a lesson in humility for me, and demonstrates well the fickle nature of assuming you will find the same thing year after year in the same site. Without doing careful study over many years, rather than making fleeting visits, little is certain in Nelson’s orchid world. It also demonstrates the value of performing analytical follow-up studies of what you have to hand, in this case triggered by a comment Mike Lusk made in passing that surely ‘round-leaf’ should have round leaves, something I concur with heartily.”



Do these look familiar?

David McConachie has been in Australia where he photographed *Gastrodia procera*, *Orthoceras strictum*, *Pterostylis falcata* and *Chiloglottis jeansii*.





Gary Little sent these photographs, taken on 15 November in Northland. It appears to be a form of the very variable amphidiploid *Thelymitra pulchella*, though the curious postanther lobe of the column may suggest a form of *T. X dentata*.

The NZ orchids

The editor's list

There has been a trend away from the revised generic names of recent years, back towards broader concepts, as Pterostylis, Caladenia, Bulbophyllum, Dendrobium, Corybas. We have not followed the trend at this stage.

Acianthus R.Br. Prodr. Fl. Nov. Holland.: 321 (1810).

Acianthus sinclairii Hook.f. Fl. Nov.-Zel. 1: 245 (1853).
Acianthus fornicatus var. *sinclairii* (Hook.f.) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 369 (1945).

Adelopetalum Fitzg. J. Bot. 29: 152 (1891).

Adelopetalum tuberculatum (Colenso) D.L.Jones, M.A.Clem. & Molloy. Orchardian 13(11): 498 (2002).
Bulbophyllum tuberculatum Colenso. Trans. & Proc. New Zealand Inst. 16: 336 (1884).
Bulbophyllum exiguum as meant by Buchanan. Trans. & Proc. New Zealand Inst. 16: 397 (1884), is not that of F.Muell. (1861).

Adenochilus Hook.f. Fl. Nov.-Zel. 1: 246, t.56 (1853)

Adenochilus gracilis Hook.f. Fl. Nov.-Zel. 1: 246, t.56 (1853).

Anzybas D.L.Jones & M.A.Clem. Orchardian 13(10): 442 (2002).

Anzybas carsei (Cheeseman) D.L.Jones & M.A.Clem. Orchardian 13(10): 443 (2002).
Corysanthes carsei Cheeseman. Trans. & Proc. New Zealand Inst. 44: 162 (1912).
Corybas carsei (Cheeseman) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945).
Corybas unguiculatus as meant by L.B.Moore. Fl. New Zealand Vol. 2: 116 (1970) is not *Corysanthes unguiculatus* of R.Br. (1810).

Anzybas rotundifolius (Cheeseman) D.L.Jones & M.A.Clem. Orchardian 13(10): 443 (2002).
Nematoceras rotundifolia Hook.f. Fl. Nov.-Zel. 1: 251 (1853).
Corysanthes rotundifolia (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).
Corybas rotundifolius (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 67 (1871).
Corysanthes matthewsii Cheeseman. Trans. & Proc. New Zealand Inst. 31: 351 (1899).
Corybas matthewsii (Cheeseman) Schltr. Repert. Spec. Nov. Regni Veg. 19: 23 (1923).
Corybas unguiculatus as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945), is not *Corysanthes unguiculatus* of R.Br. (1810).

Aporostylis Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 60 (1946)

Aporostylis bifolia (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 60 (1946).

Caladenia bifolia Hook.f. Fl. Nov.-Zel. 1: 247 (1853).
Chiloglottis traversii F.Muell. Veg. Chath. Is. 51 (1864).
Caladenia macrophylla Colenso. Trans. & Proc. New Zealand Inst. 27: 396 (1895).
Chiloglottis bifolia (Hook.f.) Schltr. Engl. Bot. Jahrb. 45: 383 (1911).

Calochilus R.Br. Prodr. Fl. Nov. Holland.: 320 (1810)

Calochilus herbaceus Lindl. Gen. & Spec. Orch. Plant.: 45 (1840).
Calochilus campestris as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 248 (1949), is not that of R.Br. (1810).

Calochilus paludosus R.Br. Prodr. Fl. Nov. Holland.: 320 (1810).

Calochilus robertsonii Benth. Fl. Austral. 6: 315 (1873).
Calochilus campestris as meant by Fitzg. Austral. Orchids 1(4): t.6 (1878), is not that of R.Br. (1810).
Calochilus campestris as meant by Cheeseman. Man. New Zealand Fl. 686 (1906), is not that of R.Br. (1810).

Corunastylis Fitzg. Austral. Orchids 2(3): t.1 (1888).

Corunastylis nuda (Hook.f.) D.L.Jones & M.A.Clem. Orchardian 13(10): 461 (2002).
Prasophyllum nudum Hook.f. Fl. Nov.-Zel. 1: 242 (1853).
Prasophyllum tunicatum Hook.f. Fl. Nov.-Zel. 1: 242 (1853).
Prasophyllum variegatum Colenso. Trans. & Proc. New Zealand Inst. 20: 208 (1888).
Genoplesium nudum (Hook.f.) D.L.Jones & M.A.Clem. Lindleyana 4(3): 144 (1989).

Corunastylis pumila (Hook.f.) D.L.Jones & M.A.Clem. Orchardian 13(10): 461 (2002).
Prasophyllum pumilum Hook.f. Fl. Nov.-Zel. 1: 242 (1853).
Genoplesium pumilum (Hook.f.) D.L.Jones & M.A.Clem. Lindleyana 4(3): 144 (1989).

Corybas Salisb. Parad. Lond. t.83 (1805).

Corybas cheesemanii (Kirk) Kuntze. Revis. Gen. Pl. 2: 657 (1891).

Corysanthes cheesemanii Kirk. Trans. & Proc. New Zealand Inst. 3: 180 (1871).
Corysanthes cheesemani Hook.f. Icones plantarum 12: 19 (1876).
Corybas aconitiflorus as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945), is not that of Salisb. (1807).

Cryptostylis R.Br. Prodr. Fl. Nov. Holland.: 317 (1810)

Cryptostylis subulata (Labill.) Rchb.f. Beitr. Syst. Pflanzenk. 15 (1871).
Malaxis subulata Labill. Nov. Holl. Pl. 2: 62, t.212 (1806).

Cyrtostylis R.Br. Prodr. Fl. Nov. Holland.: 322 (1810).

Cyrtostylis oblonga Hook.f. Fl. Nov.-Zel. 1: 246 (1853).
Acianthus reniformis var. *oblonga* (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1946).
Cyrtostylis rotundifolia Hook.f. Fl. Nov.-Zel. 1: 246 (1853).
Cyrtostylis macrophylla Hook.f. Fl. Nov.-Zel. 1: 246 (1853).
Caladenia reniformis (R.Br.) Rchb.f. Beitr. Syst. Pflanzenk. 67 (1871).
Cyrtostylis oblonga (Hook.f.) var. *rotundifolia* (Hook.f.)

- Cheeseman. Man. New Zealand Fl. 685 (1906).
Acianthus reniformis (R.Br.) Schltr. Engl. Bot. Jahrb. 34: 39 (1906).
Acianthus reniformis var. *reniformis* (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1946).
Cyrtostylis reniformis as used by many authors until now is not that of R.Br. Prodr. Fl. Nov. Holland.: 322 (1810).
- Danhatchia Garay & Christenson. Orchadian 11(10): 469, f.471 (1995)**
- Danhatchia australis** (Hatch) Garay & Christenson. Orchadian 11(10): 470 (1995).
Yoania australis Hatch. Trans. Roy. Soc. New Zealand, Bot. 2: 185 (1963).
- Diplodium D.L.Jones, Molloy & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).**
- Diplodium alobulum** (Hatch) D.L.Jones, Molloy & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).
Pterostylis trullifolia as meant by Cheeseman. Man. New Zealand Fl. (1906), is not that of Hook.f.
Pterostylis trullifolia Hook.f. var. *alobula* Hatch. Trans. Roy. Soc. NZ 77: 244, t.30, f.3E-H (1949).
Pterostylis alobula (Hatch) L.B.Moore. New Zealand J. Bot. 6: 486, f.3 (1969).
- Diplodium alveatum** (Garnet) D.L.Jones & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).
Pterostylis alveata Garnet. Victoria Naturalist 59: 91 (1939).
- Diplodium brumale** (L.B.Moore) D.L.Jones, Molloy & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).
Pterostylis trullifolia Hook.f. var. *rubella* Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 244 (1949).
Pterostylis brumalis L.B.Moore. New Zealand J. Bot. 6: 485, f.3 (1969).
- Diplodium trullifolium** (Hook.f.) D.L.Jones, Molloy & M.A.Clem. Austral. Orchid Res. 4: 72 (2002).
Pterostylis trullifolia Hook.f. Fl. Nov.-Zel. 1: 249 (1853).
Pterostylis rubella Colenso. Trans. & Proc. New Zealand Inst. 18: 271 (1886).
Pterostylis trullifolia Hook.f. var. *gracilis* Cheeseman. Trans. & Proc. New Zealand Inst. 47: 271 (1915).
- Drymoanthus Nicholls. Victorian Naturalist 59: 173 (1943)**
- Drymoanthus adversus** (Hook.f.) Dockrill. Australasian Sarcanthinae: 32, t.3 (1967).
Sarcochilus adversus Hook.f. Fl. Nov.-Zel. 1: 241 (1853).
Sarcochilus breviscapa Colenso. Trans. & Proc. New Zealand Inst. 14: 332 (1882).
- Drymoanthus flavus** St George & Molloy. New Zealand J. Bot. 32: 416, f.1 (1994).
- Earina Lindl. Bot. Reg. sub t.1699 (1834)**
- Earina aestivalis** Cheeseman. Trans. & Proc. New Zealand Inst. 51: 93 (1919).
- Earina autumnalis** (G.Forst.) Hook.f. Fl. Nov.-Zel. 1: 239 (1853).
Epidendrum autumnale G.Forst. Prodr. 60 (1786).
Earina suaveolens Lindl. Bot. Reg. 29 (1843).
Earina alba Colenso. Trans. & Proc. New Zealand Inst. 18: 267 (1886).
- Earina mucronata** Lindl. Bot. Reg. 20 sub t.1699 (1834).
Earina quadrilobata Colenso. Trans. & Proc. New Zealand Inst. 15: 325 (1883).
- Gastrodia R.Br. Prodr. Fl. Nov. Holland.: 330 (1810)**
- Gastrodia cunninghamii** Hook.f. Fl. Nov.-Zel. 1: 251 (1853).
Gastrodia leucopetala Colenso. Trans. & Proc. New Zealand Inst. 18: 268 (1886).
- Gastrodia minor** Petrie. Trans. & Proc. New Zealand Inst. 25: 273, t.20, f.5-7 (1893).
- Gastrodia "long column" agg.:** there are a number of late flowering *Gastrodia* with a long column.
- Gastrodia aff. sesamoides.** *Gastrodia sesamoides* as meant by Cheeseman. Man. New Zealand Fl. 697 (1906), is not that of R.Br. (1810).
Gastrodia "city" appears to be a variant.
- Hymenochilus D.L.Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 72 (2002).**
- Hymenochilus tanypodus** (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 74 (2002).
Pterostylis tanypada D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 273 (1997).
Pterostylis cynocephala as meant by L.B.Moore. Fl. New Zealand Vol. 2: 135 (1970) and others (1970-1997), is not that of Fitzg. (1876).
- Hymenochilus tristis** (Colenso) D.L.Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 74 (2002).
Pterostylis tristis Colenso. Trans. & Proc. New Zealand Inst. 18: 271 (1886).
Pterostylis mutica as meant by Cheeseman. Trans. & Proc. New Zealand Inst. 15: 300 (1883), is not that of R.Br. (1810).
- Ichthyostomum D.L.Jones, M.A.Clem. & Molloy. Orchadian 13(11): 499 (2002).**
- Ichthyostomum pygmaeum** (Sm.) D.L.Jones, M.A.Clem. & Molloy. Orchadian 13(11): 499 (2002).
Dendrobium pygmaeum Sm. in Rees. Cycl. (Rees) 11: n.27 (1808).
Bulbophyllum pygmaeum (Sm.) Lindl. Gen. Sp. Orchid. Pl. 58 (1830).
Bolbophyllum ichthyostomum Colenso. Trans. & Proc. New Zealand Inst. 26: 319 (1894).
- Linguella D.L.Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 74 (2002).**
- Linguella puberula** (Hook.f.) D.L.Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 75 (2002).
Pterostylis puberula Hook.f. Fl. Nov.-Zel. 1: 249 (1853).
Pterostylis nana as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 237 (1949), is not that of R.Br. (1810).
Pterostylis aff. nana.
- Microtis R.Br. Prodr. Fl. Nov. Holland.: 320 (1810).**
- Microtis arenaria** Lindl. Gen. Sp. Orchid. Pl. t.306 (1840).
Microtis biloba Nicholls. Victoria Naturalist 66: 93, f.O-L (1949).
Microtis papillosa Colenso. Trans. & Proc. New Zealand Inst. 18: 269 (1886). The type has not been found but Colenso's notched labellum suggests *M. arenaria* (which in turn has been included in *M. unifolia* by others).

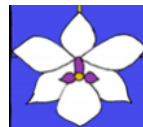
- Microtis oligantha** L.B.Moore. *New Zealand J. Bot.* 6: 473, f.1 (1969).
Microtis magnadenia as meant by Hatch. *Trans. Roy. Soc. New Zealand, Bot.* 2: 185–189 (1963), is not that of R.S.Rogers (1930).
- Microtis parviflora** R.Br. *Prodr. Fl. Nov. Holland.*: 321 (1810).
Microtis javanica Rchb.f. *Bonplandia* 5: 36 (1857).
Microtis benthamiana Rchb.f. *Beitr. Syst. Pflanzenk.* 24 (1871).
Microtis longifolia Col. *Trans. & Proc. New Zealand Inst.* 17: 247 (1885).
Microtis porrifolia (Sw.) R.Br. ex Spreng. var. *parviflora* (R.Br.) Rodway. *Tasman. Fl.* 159 (1903).
Microtis aemula Schltr. *Bot. Jahrb. Syst.* 39: 37 (1906).
Microtis bipulvinaris Nicholls. *Victoria Naturalist* 66: 92–94, f.A–F (1949).
Microtis holmesii Nicholls. *Victoria Naturalist* 66: 93, f.G–I (1949).
- Microtis unifolia** (G.Forst.) Rchb.f. *Beitr. Syst. Pflanzenk.* 62 (1871).
Ophrys unifolia G.Forst. *Fl. Ins. Austr.* 59 (1786).
Epipactis porrifolia Sw. *Kongl. Vetensk. Acad. Nya Handl.* 21: 233 (1800).
Microtis porrifolia (Sw.) R.Br. ex Spreng. *Syst. Veg. (ed. 16)* [Sprengel] 3: 713 (1826).
Microtis banksii A.Cunn. *Bot. Mag.* 62: sub 1.3377 (1835).
Microtis frutetorum Schldl. *Linnaea* 20: 568 (1847).
Microtis viridis F.Muell. *Fragm. (Mueller)* 5: 97 (1866).
Microtis longifolia Colenso. *Trans. & Proc. New Zealand Inst.* 17: 247 (1885). This is an autumn flowering form and may be distinct.
Microtis pulchella as meant by Lindl. *Gen. Sp. Orchid. Pl.* 395 (1840), is not that of R.Br. (1810).
- Microtis aff. unifolia**: a summer flowering form allied to *M. unifolia* and *M. parviflora*. *M. longifolia* Col. is autumn flowering, but structurally indistinguishable.
- Molloybas D.L.Jones & M.A.Clem. Orchadian 13(10): 448 (2002).**
- Molloybas cryptanthus** (Hatch) D.L.Jones & M.A.Clem. *Orchadian* 13(10): 448 (2002).
Corybas cryptanthus Hatch. *Trans. Roy. Soc. New Zealand* 83: 577 (1956).
Corybas saprophyticus as meant by Hatch. *Trans. & Proc. Roy. Soc. New Zealand* 79: 366, t.71 (1952), is not that of Schltr. (1923).
- Myrmechila D.L.Jones & M.A.Clem. Orchadian 15(1): 36–37 (2005).**
- Myrmechila formicifera** (Fitzg.) D.L.Jones & M.A.Clem. *Orchadian* 15(1): 37 (2005).
Chiloglottis formicifera Fitzg. *Austral. Orchids* 1(3): (1877).
- Myrmechila trapeziformis** (Fitzg.) D.L.Jones & M.A.Clem. *Orchadian* 15(1): 37 (2005).
Chiloglottis trapeziformis Fitzg. *Austral. Orchids* 1(3): (1877).
- Nematoceras Hook.f. Fl. N. Zel. 1: 249, t.57 (1853).**
- Nematoceras acuminatum** (M.A.Clem. & Hatch) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).
Corybas acuminatus M.A.Clem. & Hatch. *New Zealand J. Bot.* 23: 491, f.2 (1985).
Corysanthes acuminata (M.A.Clem. & Hatch) Szlach. *Richardiana* 3(2): 97 (2003).
Corybas rivularis as meant by Cheeseman. *Man. New Zealand Fl.* 697 (1906), and others (1906–1985), is not *Acianthus rivularis* of A.Cunn. (1837).
- Nematoceras hypogaeum** (Colenso) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).
Corysanthes hypogaea Colenso. *Trans. & Proc. New Zealand Inst.* 16: 336 (1884).
- Nematoceras iridescens** (Irwin & Molloy) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).
Corybas iridescens Irwin & Molloy. *New Zealand J. Bot.* 34: 1, f.1 (1996).
Corysanthes iridescens (Irwin & Molloy) Szlach. *Richardiana* 3(2): 98 (2003).
- Nematoceras longipetalum** (Hatch) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).
Corybas macranthus (Hook.f.) Rchb.f. var. *longipetalus* Hatch. *Trans. & Proc. Roy. Soc. New Zealand* 76: 580, t.60(1) (1947).
Corybas longipetalus (Hatch) Hatch. *NZNOG Journal* 47: 6 (1993), is not that of Schltr. (1923).
Corybas orbiculatus (Colenso) L.B.Moore. *Fl. New Zealand Vol. 2*: 118 (1970), is not *Corysanthes orbiculata* of Colenso (1891).
- Nematoceras macranthum** Hook.f. *Fl. Nov.-Zel. 1*: 250 (1853).
Corysanthes macrantha (Hook.f.) Hook.f. *Handb. N. Zeal. Fl.* 266 (1864).
Corybas macranthus (Hook.f.) Rchb.f. *Beitr. Syst. Pflanzenk.* 67 (1871).
 There are several entities in this aggregate. Probable hybrids with insect-pollinated members of the *N. trilobum* aggregate have been reported.
- Nematoceras orbiculatum** (Colenso) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).
Corysanthes orbiculata Colenso. *Trans. & Proc. New Zealand Inst.* 23: 389 (1891).
Corybas orbiculatus as meant by L.B.Moore. *Fl. New Zealand Vol. 2*: 118 (1970) and others (1970–1996), is not *Corysanthes orbiculata* of Colenso (1891) (see Molloy & Irwin. *New Zealand J. Bot.* 34 (1): 5 [1996]).
- Nematoceras papa** (Molloy & Irwin) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).
Corybas papa Molloy & Irwin. *New Zealand J. Bot.* 34(1): 5, f.1 (1996).
Corysanthes papa (Molloy & Irwin) Szlach. *Richardiana* 3 (2): 98 (2003).
- Nematoceras papillosum** (Colenso) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).
Corysanthes papillosa Colenso. *Trans. & Proc. New Zealand Inst.* 16: 337 (1884).
 This is a form of *Nematoceras macranthum*, and though its status remains speculative, the form with a pale lower labellum, long leafstem and very short flowerstem has been identified with this name.
- Nematoceras rivulare** (A.Cunn.) Hook.f. *Fl. Nov.-Zel. 1*: 251 (1853).
Acianthus rivularis A.Cunn. *Companion Bot. Mag.* 2: 376 (1837).
Corysanthes rivularis (A.Cunn.) Hook.f. *Handb. N. Zeal. Fl.* 266 (1864).
Corybas rivularis (A.Cunn.) Rchb.f. *Beitr. Syst. Pflanzenk.* 67 (1871).

- Nematoceras panduratum (Cheeseman) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).
- Corysanthes rotundifolia* var. *pandurata* Cheeseman. *Man. New Zealand Fl.* 366 (1925), is not *Nematoceras rotundifolia* of Hook.f.
- Corysanthes rotundifolia* as meant by Cheeseman. *Man. New Zealand Fl.* 695 (1906), is not *Nematoceras rotundifolia* of Hook.f. (1853).
- Corybas orbiculatus* as meant by L.B.Moore. *Fl. New Zealand Vol. 2*: 118 (1970) and others (1970–1996), is not *Corysanthes orbiculatus* of Colenso (1891).
- The *Nematoceras rivulare* complex includes unnamed taxa with the tagnames N. “Kaimai”, N. “rest area”, N. “Kaitarakihi”, N. “whiskers” (aka N. “viridis”), N. “Mangahua”, N. “sphagnum”, N. “veil”, N. “Pollok” and N. “Motutangi”.
- Nematoceras trilobum** Hook.f. *Fl. Nov.-Zel.* 1: 250 (1853). *Corysanthes triloba* (Hook.f.) Hook.f. *Handb. N. Zeal. Fl.* 265 (1864).
- Corybas trilobus* (Hook.f.) Rchb.f. *Beitr. Syst. Pflanzenk.* 67 (1871).
- About 25 taxa in the *Nematoceras trilobum* complex are of speculative taxonomic status; they include the late-flowering N. “Trotters” (almost certainly N. *trilobum* sens. strict.), the tiny May to July flowering forms with the tagname N. “pygmy”; N. “Rimutaka” (NZNOG Journal 58: 8–9 [1996]), N. “round leaf”, N. “craigielea”, N. “darkie”, N. “trisept”, N. “triwhite”, and many others. The N. *trilobum* complex has tetraploids in the South Island and Chatham I., and predominantly diploids in the North Island, but further chromosome counts are needed (see Dawson, Molloy & Beuzenberg. *New Zealand J. Bot.* 45 (4): 644 [2007]).
- Nematoceras aff. sulcatum**: a form on the Chathams, similar to N. *sulcatum* from Macquarie Is (see Molloy BPJ. *Orchids of the Chatham Islands*. DOC [2002]).
- Orthoceras R.Br. Prodr. Fl. Nov. Holland.: 316 (1810)**
- Orthoceras novae-zeelandiae** (A.Rich.) M.A.Clem., D.L.Jones & Molloy. *Austral. Orchid Res.*, 1: 100 (1989).
- Diuris novae-zeelandiae* A.Rich. *Essai Fl. Nov. Zel.* 163 t.25, f.1 (1832).
- Orthoceras solandri* Lindl. *Gen. Sp. Orchid. Pl.* 512 (1840).
- Orthoceras rubrum* Colenso. *Trans. & Proc. New Zealand Inst.* 18: 273 (1886).
- Orthoceras caput-serpentis* Colenso. *Trans. & Proc. New Zealand Inst.* 22: 490 (1890).
- Orthoceras strictum* R.Br. *forma viride* Hatch. *Trans. Roy. Soc. N.Z. Bot.* 2: 195 (1963).
- Orthoceras strictum** R.Br. *Prodr. Fl. Nov. Holland.:* 317 (1810).
- Petalochilus R.S.Rogers. J. Bot. 62: 65 (1924).**
- Petalochilus alatus** (R.Br.) D.L.Jones & M.A.Clem. *Orchadian* 13(9): 406 (2001).
- Caladenia alata* R.Br. *Prodr. Fl. Nov. Holland.:* 324 (1810).
- Caladenia minor* Hook.f. var. *exigua* Cheeseman. *Man. New Zealand Fl.* 688 (1906).
- Caladenia exigua* Cheeseman. *Trans. & Proc. New Zealand Inst.* 45: 96 (1913).
- Caladenia carnea* R.Br. var. *alata* (R.Br.) *Domin. Bibliotheca Botanica* Heft 85: 549 (1915).
- Caladenia carnea* R.Br. var. *exigua* (Cheeseman) Rupp. *Proc. Linn. Soc. New South Wales* 69: 75 (1944).
- Caladenia holmesii* Rupp. *Victoria Naturalist* 70: 179 (1954).
- Caladenia catenata* (Sm.) Druce var. *exigua* (Cheeseman) W.M.Curtis. *Stud. Fl. Tasman.*, 4A: 133 (1979).
- Petalochilus bartlettii** (Hatch) D.L.Jones & M.A.Clem. *Orchadian* 13(9): 406 (2001).
- Caladenia carnea* R.Br. var. *bartlettii* Hatch. *Trans. & Proc. Roy. Soc. New Zealand* 77: 402 (1949).
- Caladenia bartlettii* (Hatch) D.L.Jones, Molloy & M.A.Clem. *Orchadian* 12(5): 227 (1997).
- Petalochilus calyciformis** R.S.Rogers. *J. Bot.* 62: 66 (1924). Moore (1970) treated this as an aberrant floral (peloric) mutation of other species.
- Petalochilus chlorostylus** (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. *Orchadian* 13(9): 406 (2001).
- Caladenia catenata* as meant by Cooper. *Field guide to the NZ native orchids* 17 (1984), is not that of Druce (1917).
- Caladenia chlorostyla* D.L.Jones, Molloy & M.A.Clem. *Orchadian* 12(5): 223 fl (1997).
- Arethusa catenata* and *Caladenia alba* are names used for Australian plants once confused with NZ taxa.
- Petalochilus aff. chlorostylus** is a similar taxon to *Petalochilus chlorostylus*, with red hairs and later flowering. There is also a larger late flowering plant with (usually) 2–3 fls.
- Petalochilus minor** (Hook.f.) D.L.Jones & M.A.Clem. *Orchadian* 13(9): 410 (2001).
- Caladenia minor* Hook.f. *Fl. Nov.-Zel.* 1: 247, t.56b (1853).
- Caladenia carnea* var. *pygmaea* (R.S.Rogers) Rupp. *Proc. Linn. Soc. New South Wales* 69: 74 (1944).
- Caladenia carnea* R.Br. var. *minor* (Hook.f.) Hatch. *Trans. & Proc. Roy. Soc. New Zealand* 77: 401 (1949).
- Caladenia catenata* var. *minor* (Hook.f.) W.M.Curtis. *Stud. Fl. Tasman.*, 4A: 106 (1979).
- The identity of *Petalochilus minor* is not clear, but it may be a taxon within P. *aff. chlorostylus*.
- Petalochilus nothofageti** (D.L.Jones, Molloy & M.A.Clem.) Jones & M.A.Clem. *Orchadian* 13(9): 410 (2001).
- Caladenia nothofageti* D.L.Jones, Molloy & M.A.Clem. *Orchadian* 12(5): 226, f.1 (1997).
- Petalochilus saccatus** R.S.Rogers. *J. Bot.* 62: 66, t.571, 4–7 (1924).
- Caladenia saccata* (R.S.Rogers) Hopper & A.P.Br. *Austral. Syst. Bot.* 17: 171–240 (2004).
- Moore (1970) treated this as an aberrant floral (peloric) mutation of other species.
- Petalochilus variegatus** (Colenso) D.L.Jones & M.A.Clem. *Orchadian* 13(9): 410 (2001).
- Caladenia variegata* Colenso. *Trans. & Proc. New Zealand Inst.* 17: 248 (1885). Some flowers have a clear two rows of calli on the labellum, others have extra calli scattered to either side of the two rows.
- Petalochilus aff. fuscatus**: a small pink flowered entity which appears similar to the variable Australian species *Petalochilus fuscatus*. See Scanlen. *NZNOG Journal* 72: 22 [1999]. It appears to be identical with HB Matthews’s *Caladenia “nitida-rosea”* (see Scanlen E. Matthews & son on orchids. *NZNOG Historical Series* 2006; 14: 12).

- Petalochilus aff. pusillus:** a tiny pink flowered entity with broad oval sepals and petals, an incurved dorsal sepal and a triangular labellar midlobe; grows near Wellington, Taranaki and in Northland (W.M.Curtis. Stud. Fl. Tasman., 4A: 133 [1980]).
- Plumatichilos Szlach. Polish Bot. J. 46(1): 23 (2001).**
- Plumatichilos tasmanicum** (D.L.Jones) Szlach. Polish Bot. J. 46(1): 23 (2001).
Pterostylis tasmanica D.L.Jones. Muellera 8(2): 177 (1994).
Pterostylis squamata as meant by Hook.f. Fl. Nov.-Zel. 1: 249 (1853), is not that of R.Br. (1810).
Pterostylis barbata as meant by Cheeseman. Man. New Zealand Fl. 683 (1906), is not that of Lindl. (1840).
Pterostylis plumosa as meant by Cooper. Field guide to NZ native orchids 51 (1981), is not that of Cady (1969).
 Jones suggests there is a second unnamed NZ entity.
- Prasophyllum R.Br. Prodr. Fl. Nov. Holland.: 317 (1810)**
- Prasophyllum colensoi** Hook.f. Fl. Nov.-Zel. 1: 241 (1853).
Prasophyllum pauciflorum Colenso. Trans. & Proc. New Zealand Inst. 18: 273 (1886).
Prasophyllum rogersii as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 76: 290 (1946), is not that of R.S.Rogers & Rees (1921).
 Probably a number of taxa, including Irwin's P. "A" and P. "B" (NZNOG Journal 79: 9–10 [2001]).
- Prasophyllum hectorii** (Buchanan) Molloy, D.L.Jones & M.A.Clem. Orchadian 15: 41 (2005).
Gastrodia hectori Buchanan. Trans. & Proc. New Zealand Inst. 19: 214 (1886).
Prasophyllum patens as meant by Cheeseman. Man. New Zealand Fl. (1906), is not that of R.Br. (1810).
Prasophyllum suttoni as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 76: 291 (1946), is not that of Rupp (1928).
- Pterostylis R.Br. Prodr. Fl. Nov. Holland.: 326 (1810).**
- Pterostylis agathicola** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 266 (1997).
Pterostylis graminea (Hook.f.) var. *rubricaulis* H.B.Matthews ex Cheeseman. Man. New Zealand Fl. 351 (1925).
Pterostylis montana (Hatch) var. *rubricaulis* (Cheeseman) Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 240, plate 23 (1949).
- Pterostylis areolata** Petrie. Trans. & Proc. New Zealand Inst. 50: 210 (1918).
- Pterostylis auriculata** Colenso. Trans. & Proc. New Zealand Inst. 22: 489 (1890).
- Pterostylis australis** Hook.f. Fl. Nov.-Zel. 1: 248 (1853).
- Pterostylis banksii** A.Cunn. Companion Bot. Mag. 2: 376 (1837).
- Pterostylis aff. banksii:** A smaller taxon than true P. banksii, common around Wellington, and apparently found elsewhere (see NZNOG Journal 80: 14, 19 [2001]). This may, in the editor's opinion, be P. emarginata Col.
- Pterostylis cardiostigma** D.Cooper. New Zealand J. Bot. 21: 97, f.1, 2 (1983).
- Pterostylis cernua** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 267, f.2 (1997).
Pterostylis "peninsula" appears to be this.
- Pterostylis emarginata** Colenso. Trans. & Proc. New Zealand Inst. 15: 328 (1883).
 Dubious. See P. aff. banksii.
- Pterostylis foliata** Hook.f. Fl. Nov.-Zel. 1: 249 (1853).
Pterostylis vereanae R.S.Rogers. Trans. & Proc. Roy. Soc. South Australia 38: 360–361, f.18(2) (1914).
Pterostylis gracilis Nicholls. Victoria Naturalist 43: 324–326 (1927).
- Pterostylis graminea** Hook.f. Fl. Nov.-Zel. 1: 248 (1853).
 There are several taxa in the P. graminea complex, including tagname P. "sphagnum".
- Pterostylis humilis** R.S.Rogers. Trans. & Proc. Roy. Soc. South Australia 46: 151 (1922).
- Pterostylis irsoniana** Hatch. Trans. & Proc. Roy. Soc. New Zealand 78: 104, t.18 (1950).
- Pterostylis irwinii** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 269 (1997).
- Pterostylis micromega** Hook.f. Fl. Nov.-Zel. 1: 248 (1853).
Pterostylis polyphylla Colenso. Trans. & Proc. New Zealand Inst. 22: 489 (1890).
Pterostylis furcata Lindl. var. *micromega* Hatch. Trans. Roy. Soc. New Zealand 80: 326 (1953).
- Pterostylis montana** Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 239, t.22 (1949).
- Pterostylis aff. montana agg.:** includes as many as 14 undescribed taxa, including the distinctive P. "Blyth" = "P. pulchragalea" ms name of HB Matthews.
- Pterostylis nutans** R.Br. Prodr. Fl. Nov. Holland.: 327 (1810).
Pterostylis matthewsii Cheeseman. Trans. & Proc. New Zealand Inst. 47: 46 (1915).
- Pterostylis oliveri** Petrie. Trans. & Proc. New Zealand Inst. 26: 270 (1894).
- Pterostylis paludosa** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 271 (1997).
Pterostylis furcata Lindl. var. *linearis* Hatch. Trans. & Proc. Roy. Soc. NZ 77: 243, plate 29, 2 (1949).
- Pterostylis patens** Colenso. Trans. & Proc. New Zealand Inst. 18: 270 (1886).
Pterostylis banksii Hook.f. var. *patens* (Colenso) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 370 (1945).
- Pterostylis porrecta** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 272 (1997).
- Pterostylis silvicultrix** (F.Muell.) Molloy, D.L.Jones & M.A.Clem. Austral. Orchid Res. 4: 66 (2002).
Pterostylis banksii var. *silvicultrix* F.Muell. Veg. Chath. Is. 51 (1864).
- Pterostylis speciosa** Colenso. Trans. & Proc. New Zealand Inst. 22: 488 (1890).
 Dubious. Was identified as P. banksii by Cheeseman.
- Pterostylis subsimilis** Colenso. Trans. & Proc. New Zealand Inst. 28: 611 (1896).
 Was identified as P. banksii by Cheeseman
- Pterostylis venosa** Colenso. Trans. & Proc. New Zealand Inst. 28: 610 (1896).
Pterostylis trifolia Colenso. Trans. & Proc. New Zealand Inst. 31: 281 (1899).
Pterostylis confertifolia Allan. Trans. & Proc. New Zealand Inst. 56: 32 (1926).
- Simpliglottis Szlach. Polish Bot. J. 46(1): 13 (2001).**
- Chiloglottis alliance**
- Simpliglottis cornuta** (Hook.f.) Szlach. Polish Bot. J. 46(1): 13 (2001).

- Chiloglottis cornuta Hook.f. Bot. Antarct. Voy., Vol. 1, Fl. Antarct.: 69 (1844).
 Caladenia cornuta (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 67 (1871).
 The NZ form of Simpliglottis cornuta may differ from the Australian, and may be an aggregate.
- Simpliglottis valida** (D.L.Jones) Szlach. Polish Bot. J. 46 (1): 14 (2001).
 Chiloglottis valida D.L.Jones. Austral. Orchid Res. 2: 43–44, t. 54, plate p.92 (1991).
 Chiloglottis gunnii as meant by Molloy. Native orchids of NZ: 9 (1983), is not that of Lindl. (1840).
- Singularibas Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).**
- Singularibas oblongus** (Hook.f.) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).
 Nematoceras oblonga Hook.f. Fl. Nov.-Zel. 1: 250, t.57B (1853).
 Corysanthes oblonga (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).
 Corybas oblongus (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 67 (1871).
 There are two or three taxa included in this complex. One appears to be identical with HB Matthews's Corysanthes "aestivalis" (see Scanlen E. Matthews & son on orchids. NZNOG Historical Series 2006; 14: 12). A white flowered form (Nelson lakes and subantarctic islands) is more clearly separate.
- Spiranthes Rich. De Orchid. Eur. 20, 28, 36 (1817)**
- Spiranthes novae-zelandiae** Hook.f. Fl. Nov.-Zel. 1: 243 (1853).
 Spiranthes australis as meant by Hook.f. Handb. N. Zeal. Fl. 272 (1864), is not that of Lindl. (1824).
 Spiranthes sinensis as meant by Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 58 (1946), is not that of Ames (1908).
 Spiranthes lancea as meant by Hatch. Trans. Roy. Soc. New Zealand 82: 614 (1954), is not that of Backer, Bakh.f. & Steenis (1950).
 Spiranthes alticola D.Jones has been applied to Kew specimens from New Zealand (wrongly we think).
 The names Neottia sinensis and Spiranthes sinensis var. australis (R.Br.) H.Hara & Kitam. Acta Phytotox. Geobot. 36 (1–3): 93 (1985) have been used for Spiranthes australis in Australia.
- Spiranthes "Motutangi":** tagname for endangered Far North taxon similar to *S. australis*.
- Stegostyla D.L.Jones & M.A.Clem. Orchadian 13(9): 411 (2001).**
- Stegostyla atradenia** (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. Orchadian 13(9): 414 (2001).
 Caladenia iridescens as meant by Hatch. NZNOG Newsletter 16: 1 (1985), is not that of R.S.Rogers (1920).
 Caladenia carnea R.Br. var. minor forma calliniger Hatch. Trans. Roy. Soc. New Zealand, Bot. 2: 187 (1963).
 Caladenia atradenia D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 221 (1997).
- Stegostyla lyallii** (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 13(9): 413 (2001).
 Caladenia lyallii Hook.f. Fl. Nov.-Zel. 1: 247 (1853).
 There seem to be a number of taxa currently included in the *S. lyallii* agg., including a small form from Nelson Lakes, tagnamed *S. minor*.
Stegostyla aff. alpina: plants structurally closer to *S. alpina* than to *S. lyallii* are in NZ (see St George. NZNOG Journal 63: 4 [1997]).
- Sullivania F.Muell. J. Proc. Roy. Soc. New South Wales 15: 229 (1882).**
- Sullivania minor** (R.Br.) D.L.Jones & M.A.Clem. Orchadian 15: 36 (2005).
 Caleana minor R.Br. Prodr. Fl. Nov. Holland.: 329 (1810).
 Caleyia minor (R.Br.) Sweet. Hort. Brit. (Sweet) 385 (1827).
 Caleyia sullivanii F.Muell. Australas. Chem. Druggist 4: 44 (1882).
 Caleana nublignii Nicholls. Victoria Naturalist 48: 15 (1931).
 Paracaleana sullivanii (F.Muell.) Blaxell. Contr. New South Wales Natl. Herb. 4:281 (1972).
 Paracaleana minor (R.Br.) Blaxell. Contr. New South Wales Natl. Herb. 4: 281 (1972).
- Taeniophyllum Blume Bijdr. 6: t.3, fig.70: 8: 355, t.70 (1825).**
- Taeniophyllum norfolkianum** D.L.Jones, B.Gray & M.A.Clem. Orchadian 15(4):157–158, f.1 (2006).
 Taeniophyllum muelleri Lindl. ex Benth. auct. non.
- Thelymitra J.R.Forst. & G.Forst. Char. Gen. Pl. 97 t.49 (1776)**
- Thelymitra aemula** Cheeseman. Trans. & Proc. New Zealand Inst. 51: 94 (1919).
Thelymitra brevifolia Jeanes. Muelleria 19: 19–79 (2004).
Thelymitra carnea R.Br. Prodr. Fl. Nov. Holland.: 314 (1810).
 Thelymitra imberbis Hook.f. Fl. Nov.-Zel. 1: 244 (1853).
 A colour form only.
 Thelymitra carnea R.Br. var. imberbis (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1946).
Thelymitra colensoi Hook.f. Handb. N. Zeal. Fl. 271 (1864)
 Thelymitra intermedia Berggr. Minneskr. Fisiog. Sallsk. Lund 8: 21 f (1878).
 Thelymitra longifolia J.R.Forst. & G.Forst. var. stenopetala Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 F–H (1952).
 Thelymitra longifolia J.R.Forst. & G.Forst. var. intermedia Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 J (1952).
- Thelymitra cyanea** (Lindl.) Benth. Fl. Austral. 6: 323 (1873).
 Macdonaldia cyanea Lindl. Bot. Reg. 25 (1840).
 Thelymitra uniflora Hook.f. Bot. Antarct. Voy., Vol. 1, Fl. Antarct.: 70 (1844).
 Thelymitra venosa as meant by Cheeseman. Man. New Zealand Fl. 671 (1906), is not that of R.Br. (1810).
 Thelymitra venosa R.Br. var. typica Hatch Trans. & Proc. Roy. Soc. New Zealand 79: 390, plate 77 A–C (1952).
 Thelymitra venosa R.Br. var. cedricsmithii Hatch Trans. & Proc. Roy. Soc. New Zealand 79: 390, plate 77 D–E (1952).
 Thelymitra venosa R.Br. var. cyanea Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 391, plate 77 F–H (1952).
Thelymitra X dentata: a sterile hybrid of *T. longifolia* X *T. pulchella*.

- Thelymitra dentata* L.B.Moore. New Zealand J. Bot. 6: 478, f.2 (1969).
- Thelymitra formosa*** Colenso. Trans. & Proc. New Zealand Inst. 16: 338 (1884).
Thelymitra circumsepta as meant by Hatch. NZNOG Journal 65: 8 (1997), is not that of Fitzg. (1878).
- T**
- Thelymitra hatchii*** L.B.Moore. New Zealand J. Bot. 6: 477, f.2 (1969).
Thelymitra pachyphylla as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 394, plate 79 D–H (1952), is not that of Cheeseman (1906).
Thelymitra concinna Colenso. Trans. & Proc. New Zealand Inst. 20: 207 (1888) appears to be the pink-ciliated form of *T. hatchii*, and if so has precedence.
- Thelymitra* aff. *ixioides***.
Thelymitra ixioides as meant by Hook.f. Handb. N. Zeal. Fl. 669 (1864), is not that of Swartz. (Kongl. Vetensk. Acad. Nya Handl. 21: 253, t.3, f.L [1800]).
Thelymitra ixioides var. *typica* (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1945).
- Thelymitra longifolia*** J.R.Forst. & G.Forst. Char. Gen. Pl. 98 t.49 (1776).
Serapias regularis Banks & Sol. ex G.Forst. Prodr. 59 (1776).
Thelymitra forsteri Sw. Kongl. Vetensk. Acad. Nya Handl. 21: 228 (1800).
Thelymitra nemoralis Colenso. Trans. & Proc. New Zealand Inst. 17: 249 (1885).
Thelymitra alba Colenso. Trans. & Proc. New Zealand Inst. 18: 272 (1886).
Thelymitra cornuta Colenso. Trans. & Proc. New Zealand Inst. 20: 206 (1888).
Thelymitra longifolia J.R.Forst. & G.Forst. var. *alba* (Colenso) Cheeseman. Man. New Zealand Fl. 339 (1925).
Thelymitra longifolia J.R.Forst. & G.Forst. var. *forsteri* Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 B–E (1952).
Thelymitra aristata as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 395, plate 79 M–N, plate 80 A (1952), is not that of Lindl. (1840), and has been tagnamed *T. "tholinigra"* by Scanlen.
- Thelymitra* aff. *longifolia* agg.**: some undescribed taxa that appear to be insect-pollinated.
- Thelymitra malvina*** M.A.Clem., D.L.Jones & Molloy. Austral. Orchid Res. 1: 141 (1989).
- Thelymitra matthewsii*** Cheeseman. Trans. & Proc. New Zealand Inst. 43: 177 (1911).
- Thelymitra nervosa*** Colenso. Trans. & Proc. New Zealand Inst. 20: 207 (1888).
Thelymitra decora Cheeseman. Man. New Zealand Fl. 1151 (1906). Spotted and unspotted forms grow together.
- Thelymitra pauciflora*** R.Br. Prodr. 314 (1810).
Thelymitra pauciflora sens. strict. is in NZ according to Jeanes (Muelleria 19: 19–79 [2004]); however, there are also a number of forms in this aggregate.
- Thelymitra pulchella*** Hook f. Fl. Nov.-Zel. 1: 244 (1853).
Thelymitra fimbriata Colenso. Trans. & Proc. New Zealand Inst. 22: 490 (1890).
Thelymitra pachyphylla Cheeseman. Man. New Zealand Fl. 1151 (1906).
Thelymitra caesia Petrie. Trans. & Proc. New Zealand Inst. 51: 107 (1919).
T. pulchella is a very variable species, yet all of these appear to have features that are relatively stable in some populations.
- Thelymitra purpureofusca*** Colenso. Trans. & Proc. New Zealand Inst. 17: 249 (1885).
Thelymitra “Whakapapa”: undescribed taxon from Ruapehu, appears to be distinct.
- Thelymitra sanscilia*** Irwin ex Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 397, plate 81 B–E (1952).
- Thelymitra tholiformis*** Molloy & Hatch. New Zealand J. Bot. 28: 111, f.6 (1990).
Thelymitra intermedia as meant by L.B.Moore. Fl. New Zealand Vol. 2: 129 (1970), is not that of Berggr. (1878).
- Thelymitra* “Ahipara”**: an unnamed taxon from the Far North, may be identical with *T. “darkie”*.
- Thelymitra* “Comet”**: a large, late-flowering *Thelymitra* from the Kaweka range. Appears to be sterile, so probably a hybrid.
- Thelymitra* “darkie”**: undescribed taxon from the Far North (see McCrae. NZNOG Journal 24: 11; 77: 22 [1987]). May be identical with *T. “Ahipara”*.
- Thelymitra* “rough leaf”**: undescribed taxon from the Far North (see McCrae. NZNOG Journal 24: 11; 77: 22 [1987]).
- Thelymitra* “sansfimbria”**: plain blue flowers from Far North (see Scanlen. NZNOJ 98: 36 & 102: 39, 45).
- Thelymitra* “sky”**: undescribed taxon from the Far North (see Scanlen. NZNOG 70: 30–35, f.6 [1998]).
- Thelymitra* “tholinigra”**: (see Scanlen. NZNOJ 85: 10, 15).
- Thelymitra* “Whakapapa”**: undescribed taxon from Ruapehu, that may correspond to *T. purpureofusca*, or may be distinct.
- Townsonia*** Cheeseman. Man. New Zealand Fl. 692 (1906).
- Townsonia deflexa*** Cheeseman. Man. New Zealand Fl. 692 (1906).
Townsonia viridis as meant by Schltr. Repert. Spec. Nov. Regni Veg. 9: 250 (1911), is not *Acianthus viridis* of Hook.f. (1860).
Acianthus viridis as meant by L.B.Moore. Fl. New Zealand Vol. 2: 107 (1970), is not that of Hook.f. (1860).
- Waireia* D.L.Jones, M.A.Clem. & Molloy. Orchadian 12 (6): 282 (1997)**
- Waireia stenopetala*** (Hook.f.) D.L.Jones, M.A.Clem. & Molloy. Orchadian 12(6): 282 (1997).
Thelymitra stenopetala (Hook.f.) Bot. Antarct. Voy., Vol. 1, Fl. Antarct.: 69 (1844).
Lyperanthus antarcticus Hook.f. Bot. Antarct. Voy., Vol. 1, Fl. Antarct.: 544 (1847).
- Winika* M.A.Clem., D.L.Jones & Molloy. Orchadian 12 (5): 214 (1997).**
- Winika cunninghamii*** (Lindl.) M.A.Clem., D.L.Jones & Molloy. Orchadian 12(5): 214 (1997).
Dendrobium biflorum as meant by A.Rich. Essai Fl. Nov. Zel. 221 (1832), is not that of Sw. (1800).
Dendrobium cunninghamii Lindl. Bot. Reg. 21 sub. t.1756 (1835).
Dendrobium lessonii Colenso. Trans. & Proc. New Zealand Inst. 15: 326 (1883).



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