

THE  
NEW ZEALAND  
NATIVE  
ORCHID  
JOURNAL  
August 2021 No. 162





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Our main aim is to increase knowledge about NZ native orchids, so we allow others to republish material published here, provided the source and author are acknowledged. The editor and members may not share authors' views. Quarterly from February. Deadline first of the month preceding.

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**Cover:** *Thelymitra malvina*,  
Far North, 20 October 2020.

**Orchids in 3D:** Eric Scanlen  
*Thelymitra malvina* ►

**3 From the Chair:** Gael Donaghy

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**6** Defining hybrids. Graeme Jane.

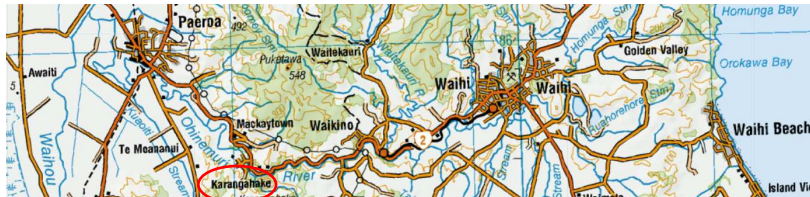
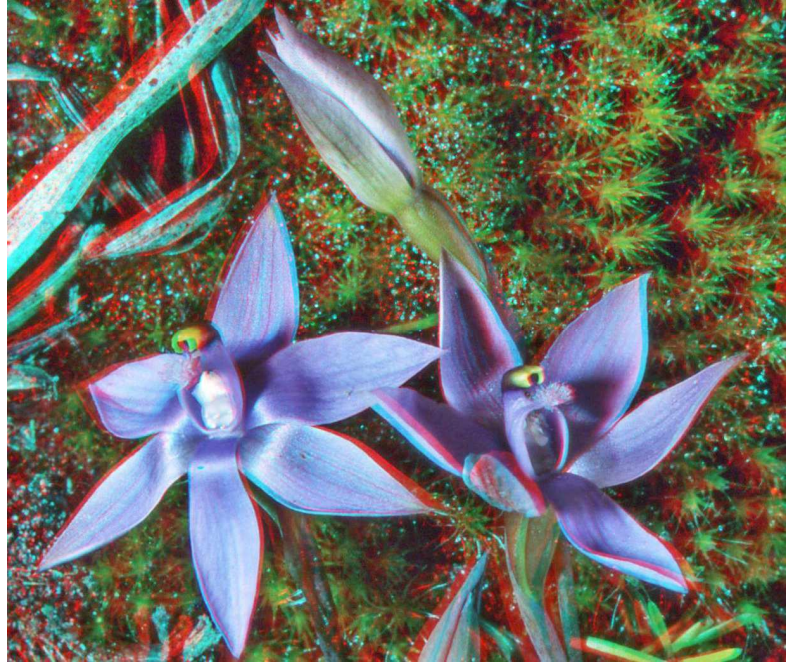
**10 In the inbox**

Assorted images, observations,  
ideas and other odds and ends  
about orchids.

**Contributors** Marionw,  
anon., Chris Ecroyd, Philip  
Simpson, Chris Close, Bill  
Campbell, Roger Thwaites,  
Georgina Upson, Bruce Burns,  
Marianw, Pat Enright,  
Jack Warden, Mike Lusk, the  
editor.

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John Buchanan's *Prasophyllum  
hectorii* near Picton.

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## Orchids in 3D

If you don't have 3D specs for  
viewing these 3D images,  
please contact the editor at  
istge@yahoo.co.nz

## FROM THE CHAIR



Gael Donaghy

In our walks around Tauranga we sometimes find orchids in gardens and in street plantings. Last autumn we found a beautifully bright yellow-green *Gastrodia molloyi* in someone's beautifully manicured bark, obviously put down to showcase their beautifully manicured topiary shrubs. I wonder if they knew what it was – it had been removed by our next visit.

On a recent visit to our local supermarket I had to park at the far end, so looked along the gardens which had had all the Australian sedges removed, and ground cover *Coprosma*s planted in bark. And here there were several clumps of *Thelymitra*, as well as many *Microtis*. The *Thelymitra* had a very strong midrib, and the leaf was deeply V-shaped in cross-section. At Customer Inquiries I asked to see the person who did the outside maintenance, and they paged someone – a young woman emerged, much to my surprise. I asked whether she would mind if I dug up one clump of a plant from their garden. She was very surprised at my request, but was willing to walk out and have a look at what I wanted. When I indicated the clump I wanted to take, and showed her several other plants that would remain, she was happy for me to do this.

The plants have been in a pot in our back porch (gets morning sun only) now for 2 weeks, and they seem quite happy – two leaves have continued growing. Yesterday I noticed the gardens at the supermarket have been weeded, and there are no orchids remaining.

So why did I take them? first answer is curiosity – we do see other *Thelymitra* in bark gardens from time to time, but mostly miss the flowering. I am hoping one of these plants might flower and enable us to identify it. The second answer is I felt sorry for

the plants (!) – they were in a place where people tended to walk on the garden. I thought it was a shame that when they had successfully made it out of the bush and into suburbia, they might be obliterated without anyone noticing. And the third answer that maybe I could find a home for them in one of the many bush gullies around Tauranga, thus conserving whatever species it is.

None of this a scientific, but it does raise the question of the conservation of orchids wherever they pop up. In Western Australia, along the Wheat Belt, the roadsides are wildflower reserves. In the past they were rich in orchids; however the last trip we had in this region, the roadsides had been so modified that the habitat was ruined for orchids. I haven't seen orchids on roadsides much in NZ, apart from on high banks alongside minor roads on the west coast of both islands (where they remain out of reach of spraying, mowing, etc.)

So is it legitimate to “rescue” urban orchids from places where they are doomed? the first step I think is to see if it is possible to keep them growing in a pot, in the medium in which I find them. If they do thrive, it will then be a challenge to find similar growing conditions as the soils here are volcanic ash-derived, and such don't seem to favour *Thelymitra*s. It may be because rainwater washes through the soil too quickly, leaving the soil dry much of the time. In some gullies there is more silt, and where it is planted in manuka, there is quite a bit of humus build-up to hold the water. So I do have a vague plan in mind.

I will keep you posted. I'd love to hear from any of you who have managed to accomplish the successful transplanting of orchids from urban settings – it is of course against the rules of the group to do this from the wild.

## 2021 field days and pre-AGM: somewhere in the Waikato. Friday 17–Monday 19 September

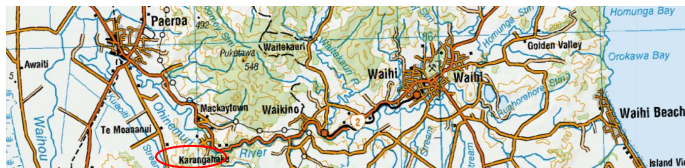
We have visited the accommodation in the Karangahake Gorge and it is very suitable, but the owner will not take bookings until July. She assured us it would probably be OK, but there were no promises, so we are investigating back-up accommodation at Waihi Beach.

Arrival will be on Friday, trips on Saturday, with pre-AGM meeting on Saturday night. This will be like an AGM, but all decisions and accounts will need to be ratified by later Zoom call (scheduled for November) for those who can, and by email for those who can't Zoom. This is because we need to have accounts verified after the end of September. There will be more walks on Sunday and for those who want to stay and do some more exploring, on Monday morning.

We are organising shorter, flatter walks for those who don't want to tackle hills (Gael will lead these), while Graeme will take people on longer or more uphill walks. There will be orchids to see on both walks each day.

Meals – if we stay at Karangahake, we will have a simple dinner at house on Friday night (there is a full kitchen), with dinner on Saturday and Sunday nights in Waihi, Waihi Beach or Paeroa.

Contact [gaeldonaghy@gmail.com](mailto:gaeldonaghy@gmail.com) for further information about the field days or tag-along tour.



## South Island tag-along tour: 13–20 October 2021

Note that Labour weekend is Sat 23 – Mon 26 Oct, so we need to avoid this to get cheaper accommodation. Graeme and I usually stay in cabins at motor camps at this time of year and cook our own food in the kitchens.

**How a tag-along tour works.** People choose and book their own accommodation and organise their own food. There will be no charge for this tour, as people are responsible for their own costs. Motor camps will not be busy at this time so there is usually room to get together in the evenings in communal areas. A meeting time and place is specified for each day, and people take their own cars, arranging their own car-pooling where possible.

**Possible tag-along itinerary (may change depending on what is in flower and the weather!)**

- Wed 13 Oct Arrive Invercargill Stay 2 nights – sites Sandy Pt, Omaui, Bluff Hill.
- Fri 15 Oct Travel to Tuatapere, Stay 2 nights. – stop at Riverton Reserve on way (Mark).
- Sat 16 Oct Hump Ridge Track – full day. We will only do the flat part!
- Sun 17 Oct Travel to Gore. Stay Gore 1 night – look at Dunsdale SR on the way.
- Mon 18 Oct – Look at Donavon Park area (near Gore), then later travel on to Catlins. Stay Catlins 2 nights.
- Tues 19 Oct – Two of the three sites – Cannibal Bay (*Corybas orbiculatus*), Tahakopa River (Possumers track), (*Corybas trilobus* s.l.) Manuka Pt SR (*Drymoanthus flavus*)
- Wed 20 Oct – Look at third site in Catlins, then farewell.



## Brief minutes, NZ Native Orchid Group AGM, held on Saturday 31 October 2020,

Houhora Big Game and Sports Fishing Club, State Highway 1, Houhora.

The meeting opened 7.10pm, Bill Campbell acting as Minutes Secretary.

**1. Apologies:** Ian St George, Mark Moorhouse, Pam Shearer, Brian & Judith Tyler. **Present:** Gael Donaghy (Chairperson), Bill Campbell, Helen Cogle (guest), Allan Ducker, Claire Francis, Graeme Jane, Carlos Lehnebach, Mike Lusk, Tiago Mahalingham, Kevin Matthews, David McConachie, Hazel McConachie, Margaret Menzies, Alisdair Nicoll, Glyn Wren, Maureen Young (guest) and Andi Zeller.

**2. The Minutes of the 2019 AGM were accepted.**

**3. Matters arising from 2019 Minutes**

**Funding orchid research** - Gael suggested we nominate an amount rather than the subject for research. Mike Lusk had contacted Forest & Bird but no significant funds available. Carlos said we need to support orchid research in New Zealand. Funding can be at any level. Hold over until after Treasurer's report.

**Website updating** –Gael - Nothing happening at this stage. Suggest using other sites. Mike Lusk suggested we embrace and help Native Orchid Facebook group.

**Calendar idea for fundraising.** It was decided that this was not worth pursuing due to cost and other issues.

**4. Chairperson's Report:** Gael read her report to the meeting. The chairperson's report was accepted.

**5. Treasurer's Report:** David McConachie distributed the accounts on behalf of Judith Tyler. A copy of both years' accounts will be lodged with the Companies Office (we are an incorporated Society). Balance Date: 30 September Balance at start of financial year (1 October 2019):

Income: \$4,116.74

Expenditure: \$3,637.69

Bank Balance: \$16,046.81.

**Webmaster expenses** approximately equal hosting fees.

The financial report was accepted.

**Adobe software licence.** Ian St George request for financial support. It

was agreed that the NZ Native Orchid Group meet the cost of an appropriate Adobe software license to enable Ian St George to continue producing the NZNOG Journal.

**6. Election of Officers**

**Chair:** Gael Donaghy

**Deputy Chair:** Mark Moorhouse

**Treasurer:** David McConachie

**Secretary:** Pam Shearer (unless someone else would like to take over)

**Committee:** Ian St George, Graeme Jane, Bill Liddy, Brian Tyler, Michael Pratt, Mike Lusk, Murray Dawson, Alisdair Nicoll and Carlos Lehnebach.

**7. General Business**

**Creating a digital library of journals that is fully searchable**– item from Ian St George. Two members willing to help with scanning. Graeme Jane and David McConachie.

**Collecting for Research.** Carlos Lehnebach spoke to the meeting to outline the research project and permit arrangements. Landcare Research are getting copies of specimens. DOC needs prior advice of where collecting is occurring. No collection allowed in Northland at present.

**Venue for 2021 AGM.** Ian St George had suggested Catlins or Borland Lodge or similar. Following some discussion around a South Island venue Gael suggested Te Aroha as base for the 2021 AGM and Field Trips, with an extended field trip to the South Island to be looked at separately for 2021. The 2021 AGM and Field Trips are to be based in Te Aroha and an extended South Island Trip will be investigated also.

**8. Other Business**

Members suggested a possible trip to Chatham Islands but noted it would be very costly. Stewart Island also suggested. Maybe at a later date. Reprinting of the Pocket guide – Ian St George is organising this. A committee is to be formed.

**Student Grant.** A student assistance grant of \$2,000.00 will be made available to help a student carry out orchid research in New Zealand.

Payment of subscriptions by internet banking is organised and available to members.

The meeting closed at 8.27pm.

## Defining hybrids

by Graeme Jane—a talk given at the 2020 AGM.

Ian St George has suggested three kinds of orchid hybrids—

- **Possible** means a plant with characteristics of two known species.
- **Probable** is when a possible hybrid is found with both parents in the vicinity.
- **Proved** is when a possible or probable hybrid has been artificially reproduced.

But the situation is a bit more complicated than that.

The usual technical phrase for possible wild hybrids is “putative hybrid” because there is often poor or no proof. The label “hybrid” usually happens when someone can’t quite decide between two possible species. It is often loosely used without consideration of natural, genetic or (micro)habitat variation.

Artificial hybrids can be induced between species where they could not occur naturally. Sometimes with great persistence a grower can create them between genera (for example between *Calochilus paludosus* and *Thelymitra pulchella*) or between species from different continents.

### When to suspect a hybrid

One obvious situation is where two species appear quite different growing in separate localities but where they occur together, you see a range of forms between them (eg. *Corybas iridescens* x *C. papa* from a 20m ditch at Makatote Viaduct, **Fig.1**).

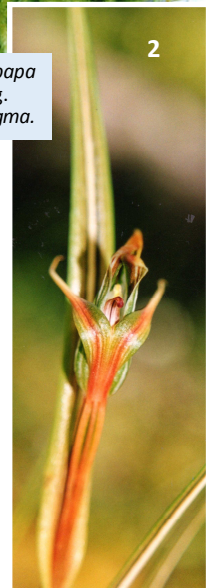


**Fig.1.** ↑ A range of forms from *Corybas iridescens* to *C. papa* from a section of ditch not more than 20 m long.

**Fig.2.** → *Pterostylis* looking like a *P. irsoniana* or *P. cardiostigma*.

More often you may have the occasional plant which seems halfway between with only one or even no suggested parents close by. This is not unexpected as first generation F1 hybrids are often sterile and don’t persist.

Looking at the situation another way – if you have an odd looking plant how do you tell if it is a new species, a hybrid or just an odd variant such as the one looking like a *Pterostylis irsoniana* or *P. cardiostigma* (**Fig.2**). Obviously you need more than one plant or patch (perhaps a clone) and preferably more than one population (occurrence of the variation) to be sure it is not just an extreme variation or due to spraying, disease or an unusual soil or other environmental conditions.

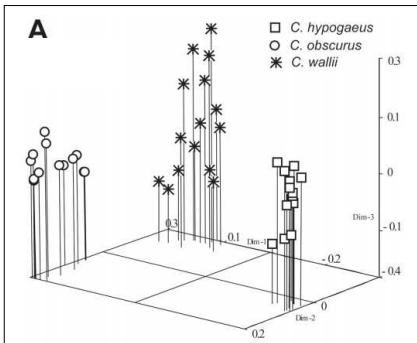


Even if you get past those tests remember: hybrids can be regarded as a potential new species. So how do you define the boundary between species?

### Species concept

To make progress you need to understand the species concept. The first thing to think about is that a species is just a human construct. Nature is not bound by any rules although some basic principles may apply which may enable people to put plants into categories. We don't expect plants to have ears nor animals to have roots that tie them to the ground (though mussels do).

Species can be thought of as a discrete blob as is illustrated in the *Corybas* paper by Carlos Lehnebach (**Fig.3**) while varieties, forms and cultivars are regarded as blobs which are sometimes discrete but often grade back into the species when the “main” population is present. That is they hybridise with the main variety. Forms and cultivars are often quite



**Fig.3.** Diagram from Carlos Lehnebach's *C. trilobus* paper illustrating the concept of “blobs”

unstable. For instance I often see branches of variegated plants that revert to green.

Species are usually separated by some sort of barrier. The simplest separation is distance – higher altitude, another island or continent.

Others are—

- different habitats even different parts of a tree
- different pollinators,

hybrids can occur near wetlands or streams

- different flowering seasons – an odd year many mean one species flowers earlier or later than usual and thus the two are able to hybridise
- different internal flower structures - a new or occasional pollinator may be able to span the physical difference
- pollen may not be able to reach the ovary through chemical incompatibilities
- chromosome number – a doubling in number or missing chromosomes, or perhaps both

Usually several barriers may exist, especially in stable species. Hybrids can result where one or more of these barriers is broken or species become established when a new one is “erected”. Disturbance is a common cause of hybrids, especially that induced by people.

So what are a few key characteristics of hybrids?

- They are often sterile. They may have deformed floral structures such as hybrids of *P. oliveri* and *P. australis* lacking a stigma that occur in the Cobb (**Fig.4**).
- They may not produce viable seed or the seed viability is low so they only occur as “temporary” plants
- If they are not sterile a whole range of forms



**Fig.4.** *Pterostylis* lacking a stigma: from a population of *P. oliveri* and *P. australis* .

may appear as in *Pterostylis montana* x *P. irsoniana* as on Knuckle Hill.

- They often occur where one or other (or both) parents may not usually grow together - disturbed habitats or areas where people (or other animals) have modified an area.
- Or perhaps a different pollinator is present, or a new pollinator species arrives in the locality.

### Evidence

*Probable*: implies some action has been undertaken to increase certainty of the decision. So it requires more than just one occurrence and the presence of the likely parents. Perhaps the genus frequently hybridises or even that hybridism has been proven by deliberate crossing between the relevant species. It usually requires some understanding of the range of variation within the possible parents or that some research has already been undertaken to show it can happen.

Look at the morphology—

- are ovary or stamens absent?
- physical shape or colour may vary. But be aware: characters such as flower colour, hairs, column arms may be unstable in that species.
- Is hybridism present in other members of the group – wild or in cultivation – eg. *Thelymitra*?

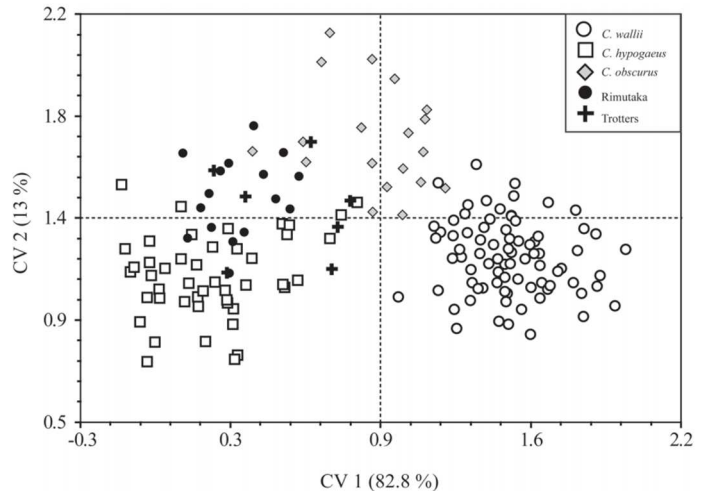
Some genera or groups within genera often have hybrids, in others they are rare. *Thelymitra* and *Pterostylis* often have hybrids, *Corybas* may but there is currently little evidence in NZ *Gastrodia* or NZ *Caladenias*.

### Proof

The best test is to see if you can create the hybrid from the supposed parents but that may not be practical.

We could also—

- observe over several seasons – it might have been something peculiar to that year or season
- transplant – abnormal plants may change when in the same growing conditions
- grow the parents together and cross them
- grow plants from seed – where seed is produced and viable – you may get very variable progeny (offspring)
- do some measurements and plot classic scatter diagrams, this one shows two of the five taxa that can't be separated with the data used (Fig.5).



**Fig.5.** Diagram of 5 taxa from Carlos Lehnbach's *Corybas* paper showing two taxa that can't be separated with the data used.



- examine chromosomes – irregular numbers or mismatching of chromosomes may be clear evidence of hybrids even where numbers are the same.

## SO WHAT TO DO?

At a local site level we have to distinguish natural variation from that created by barrier or “distance” breakdown. For that we need to have a clear idea of the range of variation within a species – the boundaries of the blob.

Sometimes it is necessary to visit the type locality to get a clear idea of what the actual plant description means and what it looks like in the field (not as a pressed specimen) and how much it varies in its “home” locality. But there are other ways to identify hybrids (or problems) as noted above.

### Observe—

- Are the possible parents present?
- Do the parents normally occur together? If so why no hybrids normally?
- How common is the form, is it a single plant or colony?
- Is there a range of forms between the suggested parents?
- Is there evidence of perhaps man-made disturbance?

- Are all parts of the flower properly developed?
- Are internal parts different?
- What are the respective pollinators? Is there possibly a new one?
- Is there something different about the habitat? A swamp nearby?
- Is it in patches? Is it part of a clone?

### Record—

- Take plenty of photos of the plants from different angles and for detail (good drawings too if you can).
- Photograph and make notes on the habitat or any other site features.
- Mark the spot and revisit over several years to see how persistent the plants are.

### Measure—

If you have enough plants measure and plot some key features of the supposed parents and the hybrid.

### Consult—

Inform Carlos Lehnebach or someone else for an opinion.

### Reference

Lehnebach C. A. 2016: Five new species of *Corybas* (Diurideae, Orchidaceae) endemic to New Zealand and phylogeny of the *Nematoceras* clade *Phytotaxa* 270 (1):1–24.

**Look at** <https://www.biotaxa.org/Phytotaxa/article/view/phytotaxa.498.3.2> . It is a description of a hybrid *Spiranthes* near New York and its abstract begins with the words, “Recognizing species diversity is challenging in genera that display interspecific similarity and intra-specific variation; hybridization and the evolution of cryptic hybrid species amplifies these challenges.” Never a truer word was spoken! The author, Matthew Pace, goes on, “Recent molecular and morphological research focused on the systematics of *Spiranthes* (Orchidaceae) support hybrid speciation as an important driver of species diversity, particularly within the *S. cernua* species complex. Working under an integrated history-bound phylogenetic species concept, new molecular and morphometric data provide evidence for a new and rare cryptic hybrid species resulting from the ancient hybridization of *S. cernua* × *S. odorata*, here described as *S. bightensis*.”  
*Thanks to Pat Enright for drawing our attention to this paper: we do need to take more heed of hybridisation in our orchids—Ed.*

IN THE  
INBOX



*Dendrobium cunninghamii*, Whanganui National Park, 8 January 2021, posted to *iNaturalist* by Marionw.



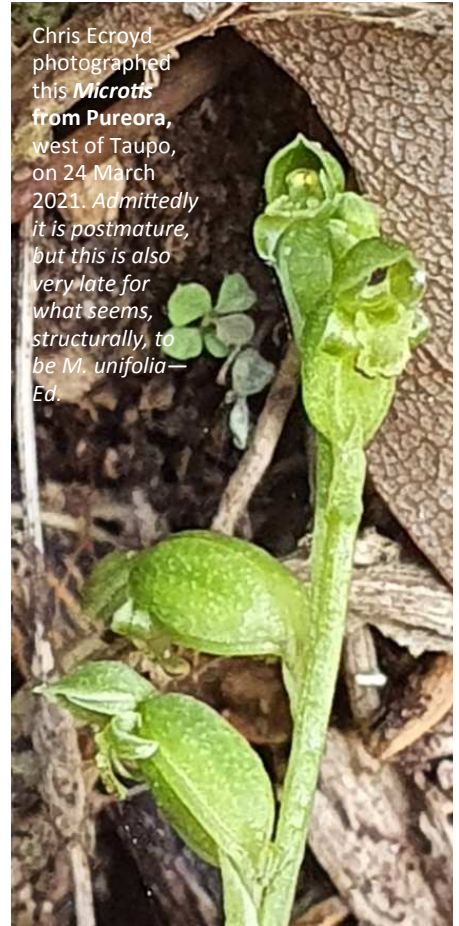
*Dendrobium cunninghamii*, Great Barrier Island 14 February 2021, posted to *iNaturalist* by Marionw.

**Late flowering  
*Microtis***

A very late  
*Microtis* from  
Stewart Island,  
↓ → in bud  
and flowering  
on 25 February  
2021, posted  
to *iNaturalist*  
by an anonym-  
ous photog-  
rapher. Could  
this be Colen-  
so's *M. longifo-*  
*lia*?



Chris Ecroyd  
photographed  
this *Microtis*  
from Pureora,  
west of Taupo,  
on 24 March  
2021. Admittedly  
it is postmature,  
but this is also  
very late for  
what seems,  
structurally, to  
be *M. unifolia*—  
Ed.







⇒ *Pterostylis brumalis* at Piha on 27 May 2021: photo by Bruce Burns, *iNaturalist* 28 May 21.

Philip Simpson found a cluster of *Pterostylis alveata* ➡ growing in grass on a Tasman trackside on 3 May: "Some were in early fruit, most flowering, some prostrate rosettes. I see on NZPCN that this species is recently 'self-

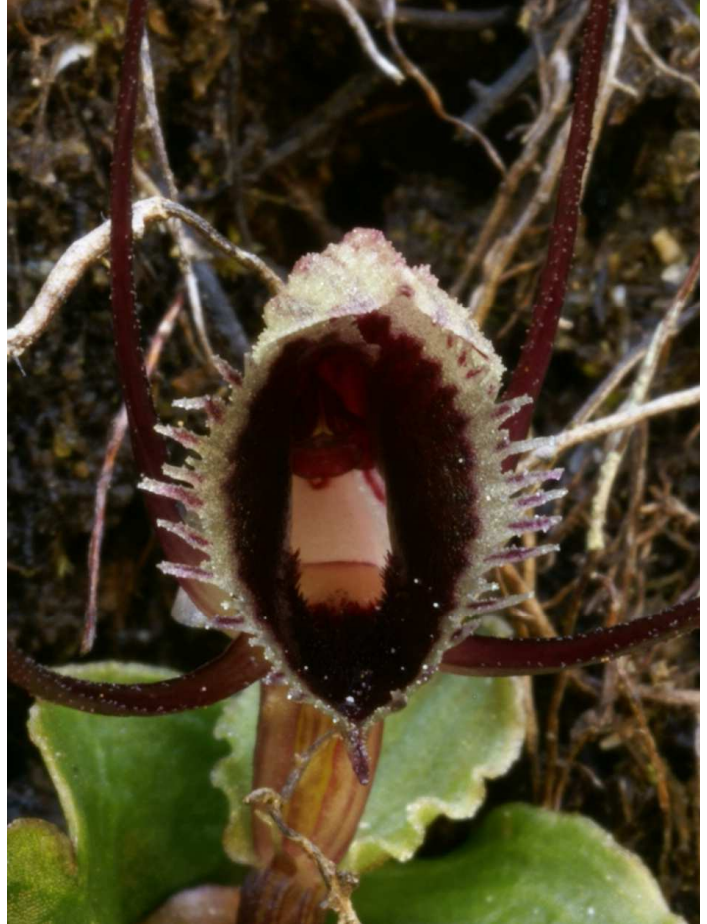


introduced', and therefore is regarded as a native. I hypothesise that it is carried on Aussie clothing! and therefore is exotic."



Chris Close posted two observations to *iNaturalist*, of ***Corybas oblongus*** photographed on Auckland Islands on 20 December 2013. One is of a white form, a single flower and another, a colony showing four white flowers. The other is the typical colour form. These white flowered plants turn up from time to time: Eric Scanlen and Gordon Sylvester photographed plants from a colony near Greymouth, but it was destroyed by development. Photographs I have seen show an unusually widely open labellum with rather coarser fimbriae. Is it just a hypochromic form? or something different? it's hard to tell from photographs alone (*see next page*).







Bill Campbell photographed *Corunastylis pumila* near Lake Ohia in the Far North on 26 April. He emailed, "I observed a total of 38 flowering plants this time around, mostly in places where I had previously searched diligently for it. With the exception of one plant that was starting to brown off, all of the plants were at a fairly similar stage of development, indicating a trigger situation that gets most of the plants going at much the same time. Images of the two finest specimens are attached ➡➡. Most had considerably fewer flowers, including one very small plant that had a solitary flower.... This is not overly late for this species in Northland. In drought years it has not appeared until as late as early July. The earliest flowering plant I've seen is in February and the latest at the beginning of August. The late summer/autumn rain seems to be the trigger for its emergence. The habitat is *Schoenus brevifolius* dominated wetland, although the *Corunastylis* are invariably on raised hummocks or raised sites within the wetland on relatively clear ground under manuka (*Leptospermum scoparium*) or kanuka (*Kunzea linearis*). I would recommend looking for this species in March–April or later if drought conditions persist."

*The only other 2021 report to iNaturalist of this rare species in NZ was on Great Barrier on 23 April. I have seen it only once, on 11 March 1995: Bruce Irwin found that site, near my father's old farm at Kaihere, on a dry roadside bank, under rewarewa. Our website records its distribution as south to Taupo, then the NW Nelson region. But could we be missing it elsewhere? how many of us go looking for orchids in April?—Ed.*



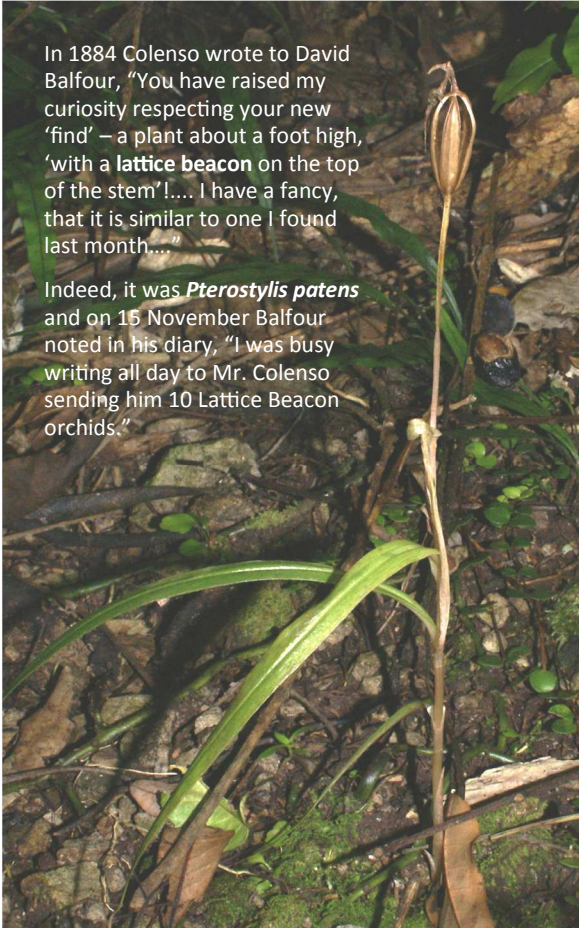


The emarginate tip of the labellum of the plant that seems to match **Colenso's** *Pterostylis emarginata* best. A much smaller plant than *P. banksii*, though otherwise similar morphologically: Airlie roadside bank, north of Wellington—*Ed.*



In 1884 Colenso wrote to David Balfour, "You have raised my curiosity respecting your new 'find' – a plant about a foot high, 'with a lattice beacon on the top of the stem'!.... I have a fancy, that it is similar to one I found last month...."

Indeed, it was *Pterostylis patens* and on 15 November Balfour noted in his diary, "I was busy writing all day to Mr. Colenso sending him 10 Lattice Beacon orchids."



Georgina Upson emailed (referring to my contention, p.19, J160) that Colenso's *Thelymitra concinna* should be recognised as a genuine species: "I do not accept *T. concinna* as anything other than *T. hatchii*. See attached."

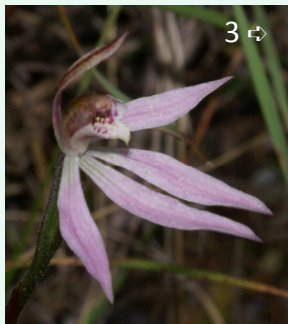
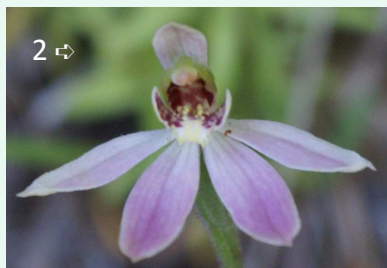
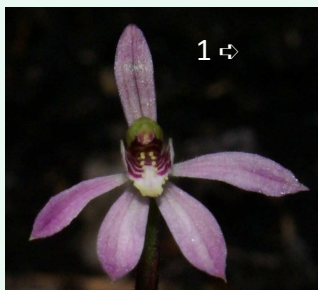
Her photographs do indeed show intermediate colour: a flower with a yellowish column top and red cilia and a flower with a maroon column top and cream cilia. ↗ →

*T. hatchii* in the far south has a much smoother horse shoe column top → not toothed like these forms.



Colenso's confusing northern forms of *T. hatchii* with what he described as *T. formosa* can be a little more easily understood.





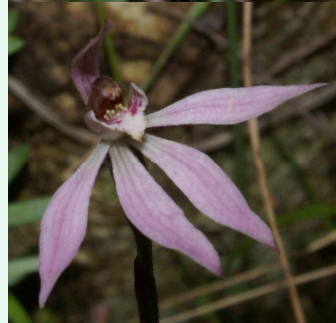
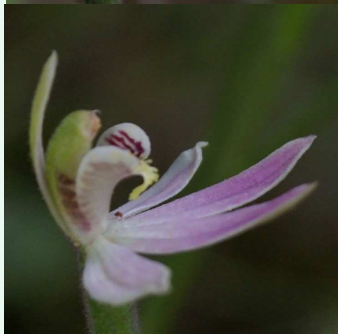
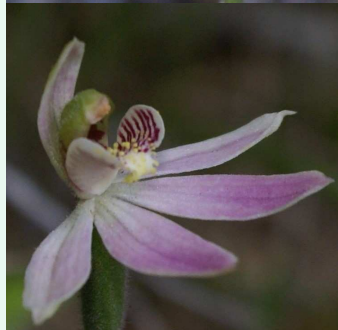
### Eight pink South Island caladenias.

1 in J160 I labelled this Queenstown plant *Caladenia* "nitidoa-rosea" = *C. bartlettii*. Now I think it is the form of *C. variegata* with 2 clear rows of calli. They are pretty similar.

2 was at Queen Charlotte Sound and is *C. variegata*, with its robust flower, green anther cap, two rows of calli plus other calli scattered over the sides of the labellum.

3 was also at Endeavour Inlet and I think this is *C. bartlettii*? with its magenta post-anther column and long pointed tepals.

4 was at Shag point, a much chunkier flower, closest to *C. variegata*.



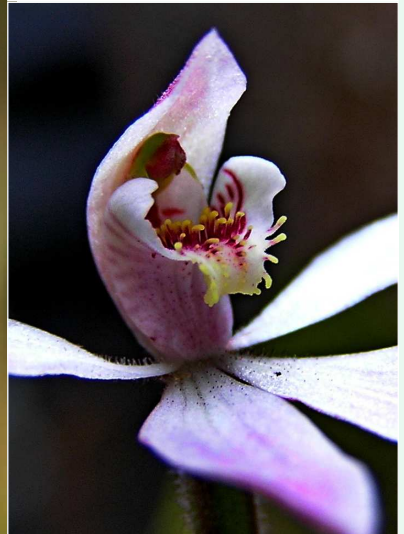




5 *Caladenia minor*:  
Above, Marlborough— Roger Thwaites;  
(Below, to compare, Far North – Ed).



- 6 ➔ *Caladenia alata*, Killdevil track, Upper Takaka;  
photo by Georgina Upson.
- 7 ⇨ *Caladenia* “Bacon Creek”; photo by Georgina Upson.
- 8 ⇨ *Caladenia* “red stem”, Manapouri – Ed.





Marianw submitted this shot of a double headed *Pterostylis trullifolia* to *iNaturalist*: Resolution Bay, Queen Charlotte Sound, 1 June 21...



... and Pat Enright photographed *P. trullifolia* in the Wairarapa on 12 June. ↗

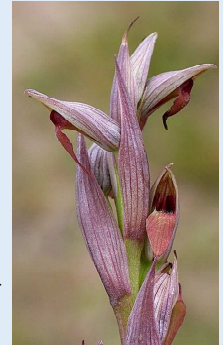
*I think the curled sepal tips are the effect of frost on the bud: it happens to Corybas too—Ed.*



Global warming has extended the range of European species northward, so animals and plants rarely seen in Britain are now appearing, according to Stephen Moss in the *Guardian* (20 June 2021). An Egyptian vulture turned up in the Scilly Isles, the southern migrant hawker dragonfly and willow emerald damselfly have colonised southern England, little, great white and cattle egrets are now a common sight around the Somerset Levels.

In 2021 news broke of a colony of *Serapias parviflora*

→ the lesser tongue orchid – the first in Britain for over 30 years – on the roof of a bank in the City of London.



We might anticipate a southward extension of the range of some NZ orchids.





↑ Jack Warden posted the first observation of *Corybas* "pygmy" of the season on *iNaturalist*: photographed at Kaipara Flat, Northland, 21 June 2021.

↓ *Pterostylis brumalis*, photographed by Jack Warden at Parry Kauri Park, Northland on 26 April 2021 and posted on *iNaturalist*.

## REFERENCES

You can search online for historical material (publications and herbarium specimens) relating to NZ orchids: CLICK the links below....

Hooker's *Flora Novae-Zelandiae*: <https://www.biodiversitylibrary.org/item/54141#page/8/mode/1up>

Hooker's *Handbook*: <https://www.biodiversitylibrary.org/item/228754#page/7/mode/1up>

Mueller's *The vegetation of the Chatham Islands*: <https://www.biodiversitylibrary.org/item/118374#page/7/mode/1up>

*Transactions*: <https://paperspast.natlib.govt.nz/periodicals/transactions-and-proceedings-of-the-royal-society-of-new-zealand>

Cheeseman's *Manual*: <https://www.biodiversitylibrary.org/item/44765#page/5/mode/1up>

Cheeseman's *Illustrations Vol.2*: <https://www.biodiversitylibrary.org/item/45034#page/5/mode/1up>

Moore & Edgar, *Flora NZ Vol.II: Orchidaceae*:

[https://floraseries.landcareresearch.co.nz/pages/Taxon.aspx?id=\\_5200364d-6ee3-40d1-9031-4539ee3c4a22&fileName=Flora%20.xml](https://floraseries.landcareresearch.co.nz/pages/Taxon.aspx?id=_5200364d-6ee3-40d1-9031-4539ee3c4a22&fileName=Flora%20.xml)

*Tuatara*: <http://nzetc.victoria.ac.nz/tm/scholarly/tei-corpus-tuatara.html>

*Victorian naturalist*: <https://www.biodiversitylibrary.org/bibliography/43746>

*NZ and Regional Botanical Society Newsletters*: <https://www.nzpcn.org.nz/publications/botanical-society-journals/>

Royal Botanic Gardens Kew herbarium catalogue: <http://apps.kew.org/herbcat/navigator.do>

The Australasian Virtual Herbarium: [https://avh.ala.org.au/#tab\\_simpleSearch](https://avh.ala.org.au/#tab_simpleSearch).

Te Papa herbarium catalogue: <https://collections.tepapa.govt.nz/topic/2005>

Auckland Museum herbarium catalogue: <https://www.aucklandmuseum.com/discover/collections/about/natural-sciences/botany>

Neither the *NZ Native Orchid Journal*, the *Orchadian*, nor the volumes of *Australian Orchid Research* are yet online, alas.



↗ Chris Ecroyd posted these shots of a *Pterostylis* flowering on 16 June 2021 near Nelson. It appears to be *P. auriculata*, but extremely early flowering and disjunct from its usual Otago/Southland habitat (though it has also been recorded from Kapiti island and Chatham Islands by Peter de Lange in the past).



↑ Mike Lusk's perfect photograph of a *Pterostylis* at Blowhard Bush, Kaweka foothills, November 2011. *But what is it?*



# THE TYPE LOCALITY

## *Prasophyllum hectorii* near Picton

The Wairau Plains has lost 99 percent of its wetlands, but determined conservationists are protecting what's left.

The Para wetland is situated north of Blenheim in the Waitohti Valley to the west of State Highway One. The area was a large kahikatea and totara swamp in pre-colonial times but most of the forest was cut and rafted down the Tuamarina River to Tuamarina. Large numbers of birds and fish used to inhabit the location and it provided an important food gathering area for Maori.

Due to the extremely limited difference in height of the northern and southern ends of the swamp, draining proved to be impractical and as a result the wetland survived colonial development; however willows were planted, in theory to stop flooding, but in reality severely degrading the habitat [1].

John Buchanan found a plant he thought was a *Gastrodia* nearby and described it in the *Trans* in 1886 ↓, naming it after Hector [2]. He drew it (“JB delt.”) →

### *Gastrodia hectori*, Buch.

Root tuberous, stem and spike of flowers 18 inches high, closely sheathed for  $\frac{2}{3}$  of its length by a long leaf,  $\frac{1}{3}$  of the leaf being free, a short outer sheath at bottom encloses the base of the sheathing leaf. Scales none. Racemes  $3\frac{1}{2}$  inches long. Flowers 18, close-set, brownish-yellow,  $\frac{2}{10}$  of an inch in length, seed-vessel black, or dark brown, orbicular.

The present species was collected several years ago in Marlborough district, near Picton, and has also been seen on the Conway River. The species of *Gastrodia* are probably abundant, but their dark habitats, in dense bush country, prevent them from being easily seen.



Harry Carse sent Cheeseman specimens of a new *Prasophyllum* from Maungata-pere, Thomas Kirk sent the same from Great Barrier Island and Cheeseman himself found plenty of them in the Ngaere swamp in Taranaki. He identified them formally with the Australian *Prasophyllum patens* R.Br. in 1906 [3].

Dan Hatch was liaising with HMR Rupp in Australia and noted in 1946 that *P. patens* had been split into three species and that, of these, “There can be no doubt that our plant is *Pr. suttonii* [4]. His father’s drawing is at right. ➔

In 1970 Lucy Moore put it back in *P. patens*. She wrote, “N.Z. specimens examined... approach t.109B (next page, from Hooker’s *Flora Tasmaniae*), while t.111 shows some of the features attributed to *P. suttonii*.” [5]

In the course of unfinished work attempting to typify all of the New Zealand orchids, Brian Molloy examined Buchanan’s *Gastrodia hectorii* and found it to be a *Prasophyllum*, matching the NZ plant till then identified with Australian plants—either *P. patens* or *P. suttonii*. He and his Australian colleagues Mark Clements and David Jones recognised the NZ plant was actually neither of these and named it in 2005 (preserving Buchanan’s epithet) *Prasophyllum hectorii* (Buchanan) Molloy, D.L.Jones & M.A.Clem. [6].

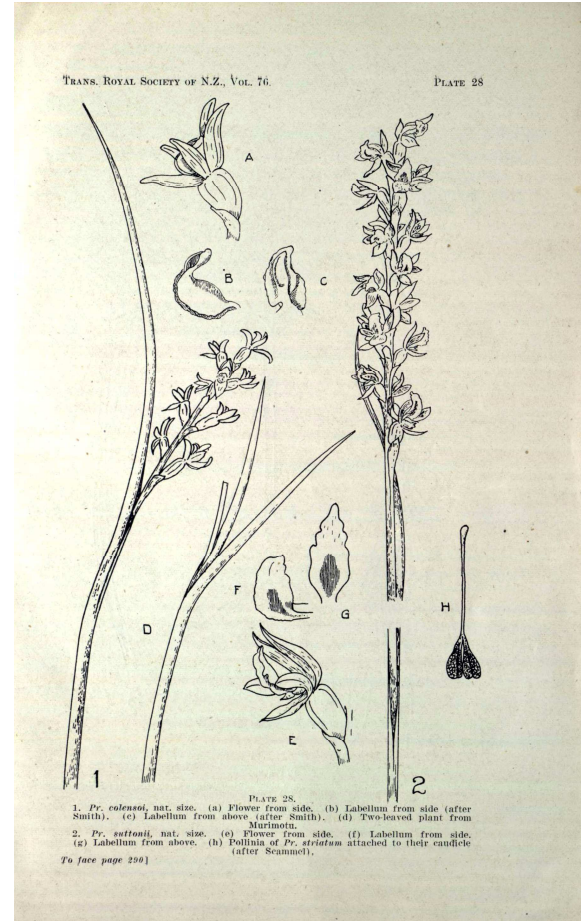
The NZ Plant Conservation Network has its distribution: “Endemic. North and Chatham Islands. Formerly known in the North Island from Te Pahi south to near Waiouru, and from one site on the main Chatham Island. Current records exist for Te Pahi, the Waikato and Central Volcanic Plateau.”

Bill Campbell has reported it to *iNaturalist* from the far north, flowering mid-December. I have seen it flowering in early February near Waiouru.

Not since Buchanan has it, to my knowledge, been found in the South island. Perhaps it will reappear in Marlborough’s Para Wetland.

#### References

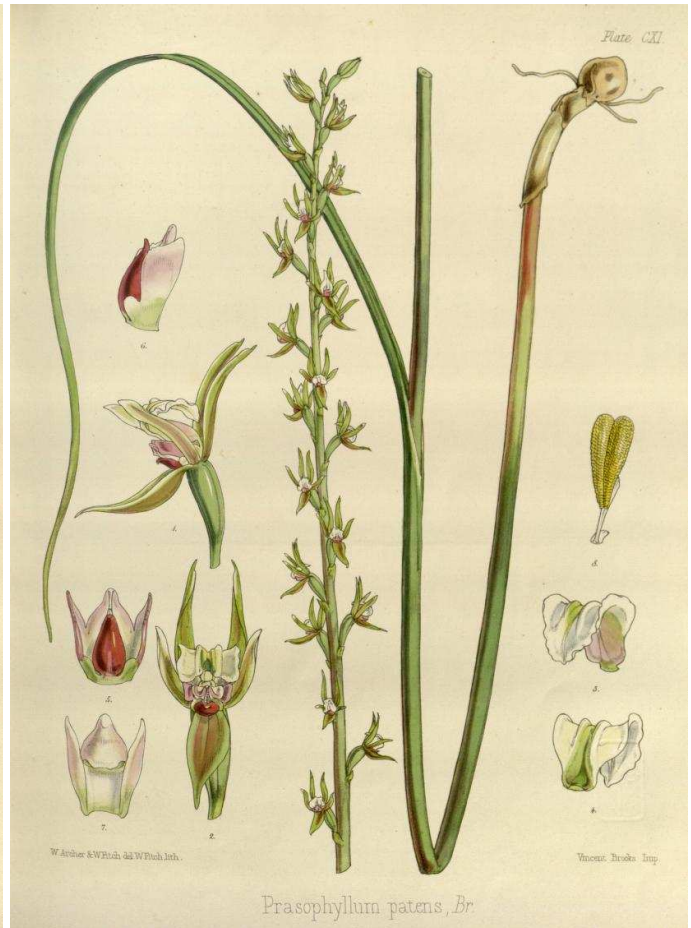
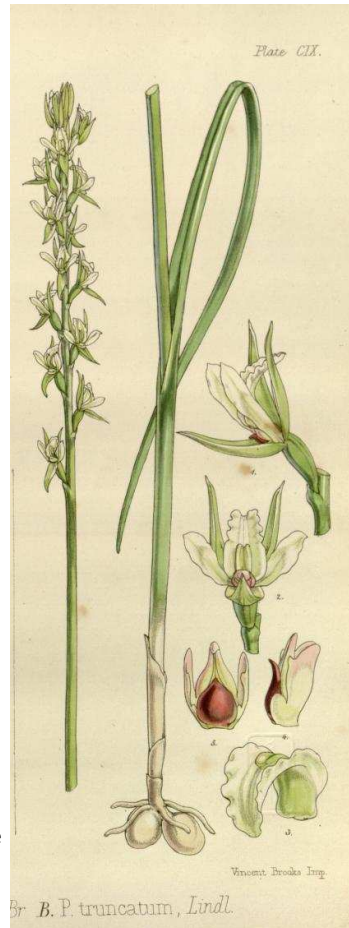
1. <https://www.marlboroughonline.co.nz/marlborough/information/geography/wetlands/para/>
2. Buchanan J 1887. On some New Native Plants. *Transactions and Proceedings of the New Zealand Institute* 19: 213–216.
3. Cheeseman TF 1906. *Manual of the New Zealand Flora*. Ed. 1.
4. Hatch ED 1946. The New Zealand Forms of *Prasophyllum* R. Br. *Transactions and Proceedings of the New Zealand Institute* 76:
5. Moore L, Edgar E 1970. *Flora of NZ* vol II.
6. Jones DL, Clements MA 2005. Miscellaneous Nomenclatural Notes and Changes in Australian, New Guinea and New Zealand Orchidaceae. *The Orchadian* 15: 33–42.



Images from Hooker's *Flora Tasmaniae* (1860) drawn by W Archer and WH Fitch, lithography by Fitch.

Detail of Plate 109 showing B: *P. truncatum* which Lucy Moore considered NZ specimens approached. →

Plate 111 showing *P. patens* which Moore considered "showed some of the features attributed to *P. suttonii*." →→







*Prasophyllum hectorii*,  
Karikari Peninsula, Far North: photo by Bill Campbell,  
observed and posted to *iNaturalist* 10 December 2020.



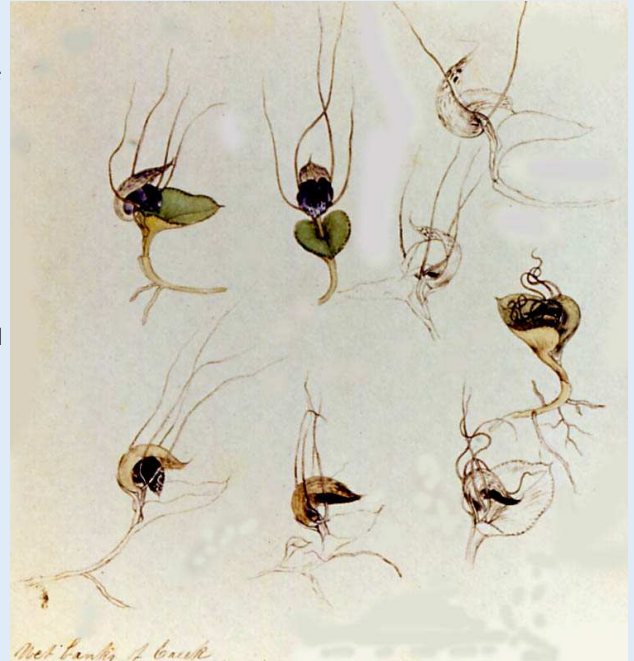
### John Buchanan (1818–1898)

This Scots pattern designer arrived in Otago in 1852 and sent back to Kew what JD Hooker described as the best collections of plants received from Australasia. He explored much of the interior, often in the company of Dr Hector, and his “Sketch of the botany of Otago” was a major paper. The Hocken Library has a number of his diaries, and they give a vivid account of the hardships of collecting.

Buchanan's major botanical work was in response to Sir George Grey's request that New Zealand grasses should be catalogued and evaluated for their fodder potential. The illustrations for *The indigenous grasses of New Zealand* (1877) were made by inking the plants and pressing them direct onto the lithographic stone, the detail to be filled in later.

He was a prolific artist. Sketchbooks in Dunedin, Wellington and Auckland are full of beautiful natural history and topographical drawings. He was chief illustrator for the *Transactions* of the New Zealand Institute, and drew and engraved many of the lithographs for its first nineteen volumes – “JB delt.” appears on most. His “Milford Sound, looking North-West from Freshwater Basin” has been described as one of the masterpieces of New Zealand landscape painting.

One of his sketchbooks in the Alexander Turnbull Library contains copies of the WH Fitch drawings of New Zealand orchids; in one of the sketchbooks in Dunedin is a watercolour dated 25 November 1862 and labelled “wet banks of creek under shade of trees, North side, North East Valley. Nematoceras (?triloba)”. It is an unusual form of *Corybas iridescens* and it is still there. ➡



This is a personal view of the New Zealand orchids and does not necessarily represent the opinions of the Group or its other members

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

**Acianthus Sinclairii** Hook. f. Fl. Nov.-Zel. 1: 245 (1853).

*Acianthus formicatus* var. *Sinclairii* (Hook.f.) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 369 (1945).

## **Adenochilus** Hook.f. Fl. Nov.-Zel. 1: 246, L56 (1853)

**Adenochilus gracilis** Hook. f. Fl. Nov.-Zel. 1: 246, L56 (1853).

## **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).

## **Bulbophyllum** Thouars. Hist. Orchid., Tabl. Esp. 3. (1822).

**Bulbophyllum pygmaeum** (Sm.) Lindl. Gen. Sp. Orchid. Pl. 58 (1830).

*Dendrobium pygmaeum* Sm. in Rees. Cycl. (Rees) 11: n.27 (1808).

*Bulbophyllum ichthyostomum* Colenso. Trans. & Proc. New Zealand Inst. 26: 319 (1894).

*Ichthyostomum pygmaeum* (Sm.) D.L.Jones, M.A.Clem. & Molloy. Orchadian 13(11): 499 (2002).

**Bulbophyllum tuberculatum** Colenso. Trans. & Proc. New Zealand Inst. 16: 336 (1884).

*Adelopetalum tuberculatum* (Colenso) D.L.Jones, M.A.Clem. & Molloy. Orchadian 13(11): 498 (2002).

*Bulbophyllum exiguum* as meant by Buchanan. Trans. & Proc. New Zealand Inst. 16: 397 (1884), is not that of F.Muell. (1861).

## **Caladenia** R.Br. (1810). Prodr. Fl. Nov. Holland: 323 (1810).

**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. Victorian Naturalist 70: 179 (1954).

*Caladenia catenata* (Sm.) Druce var. *exigua* (Cheeseman) W.M.Curtis. Stud. Fl. Tasman., 4A: 133 (1979).

*Petalochilus alatus* (R.Br.) D.L.Jones & M.A.Clem. Orchadian 13(9): 406 (2001).

**Caladenia atradenia** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 221 (1997).

*Stegostylis atradenia* (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. Orchadian 13(9): 414 (2001).

*Caladenia tridescens* as meant by Hatch. NZNOG Newsletter 16: 1 (1985), is not that of R.S.Rogers (1920).

*Caladenia carnea* R.Br. var. *minor* forma *callingeri* Hatch. Trans. Roy. Soc. New Zealand, Bot. 2: 187 (1963).

**Caladenia bartlettii** (Hatch) D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 227 (1997).

*Caladenia carnea* R.Br. var. *bartlettii* Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 402 (1949).

*Petalochilus bartlettii* (Hatch) D.L.Jones & M.A.Clem. Orchadian 13(9): 406 (2001).

The name *Caladenia bartlettii* Hatch has mistakenly been applied to *C. minor* for some years, but clearly Hatch described *C. "nitida rosea"*, which had been described informally in Matthews's Ms. It appears to include *C. "speckles"*.

**Caladenia chlorostyla** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 223 fl. 1997.

*Petalochilus chlorostylis* (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 alata* is a name used for an Australian plant once confused with NZ taxa.

*Petalochilus calyciformis* R.S.Rogers. J. Bot. 62: 66 (1924) and *Petalochilus saccatus* R.S.Rogers. J. Bot. 62: 66, 1571, 4-7 (1924) are regarded as aberrant floral mutations, probably of this species.

A number of similar forms have been tagged *C. "redstem"*, *C. "greenstem"*, etc.

**Caladenia lyallii** Hook. f. Fl. Nov.-Zel. 1: 247 (1853).

*Stegostylis lyallii* (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 13(9): 413 (2001).

There may be a number of taxa included in *C. lyallii*. Some appear close to the Australian *Caladenia alpina*.

**Caladenia minor** Hook. f. Fl. Nov.-Zel. 1: 247, L56b (1853).

*Caladenia carnea* R.Br. 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).

*Petalochilus minor* (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 13(9): 410 (2001).

*Caladenia aff. pusilla* probably = *C. minor*, so the NZ plants may differ from *C. pusilla* W.M.Curtis. Stud. Fl. Tasman., 4A: 133 (1980).

The identity of *Caladenia minor* has been disputed, but here it is regarded as the plant whose flowers have rounded tepals, for years mistakenly identified as *C. bartlettii*.

**Caladenia notloggettii** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 226, fl. 1 (1997).

*Petalochilus notloggettii* (D.L.Jones, Molloy & M.A.Clem.) Jones & M.A.Clem. Orchadian 13(9): 410 (2001).

**Caladenia variegata** Colenso. Trans. & Proc. New Zealand Inst. 17: 248 (1885).

*Petalochilus variegatus* (Colenso) D.L.Jones & M.A.Clem. Orchadian 13(9): 410 (2001).

Some have a clear two rows of calli and are close to *C. bartlettii*, others have extra calli scattered to either side of the two rows.

## **Calceana** R.Br. Prodr. Fl. Nov. Holland: 329 (1810).

**Calceana minor** R.Br. Prodr. Fl. Nov. Holland: 329 (1810).

*Paracalceana minor* (R.Br.) Blaxvell. Contr. New South Wales Natl. Herb. 4: 281 (1972).

*Caleya minor* (R.Br.) Sweet. Hort. Brit. (Sweet) 385 (1827).

*Caleya sullivanii* F.Muell. Australas. Chem. Druggist 4: 44 (1882).

*Calceana nublindingi* Nicholls. Victoria Naturalist 48: 15 (1931).

*Paracalceana sullivanii* (F.Muell.) Blaxvell. Contr. New South Wales Natl. Herb. 4: 281 (1972).

*Sullivania minor* (R.Br.) D.L.Jones & M.A.Clem. Orchadian 15: 36 (2005).

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

**Calochilus barbatus** 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 patulosus** 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): 16 (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).

## **Chiloglottis** R.Br. Prodr. Fl. Nov. Holland: 323 (1810).

**Chiloglottis cornuta** Hook. f. Bot. Antarct. Voy., Vol. 1, Fl. Antarct.: 69 (1844).

*Caladenia cornuta* (Hook.f.) Rehb.f. Beitr. Syst. Pflanzenk. 67 (1871).

*Simpliglottis cornuta* (Hook.f.) Szlach. Polish Bot. J. 46(1): 13 (2001).

**Chiloglottis formicifera** Fitzg. Austral. Orchids 1(3): (1877).

*Myrmecichla formicifera* (Fitzg.) D.L.Jones & M.A.Clem. Orchadian 15(1): 37 (2005).

Only one NZ record of this vagrant over a century ago.

**Chiloglottis trapeziformis** Fitzg. Austral. Orchids 1(3): (1877).

*Myrmecichla trapeziformis* (Fitzg.) D.L.Jones & M.A.Clem. Orchadian 15(1): 37 (2005).

**Chiloglottis valida** D.L.Jones. Austral. Orchid Res. 2: 43-44, t. 54, plate p.92 (1991).

*Simpliglottis valida* (D.L.Jones) Szlach. Polish Bot. J. 46(1): 14 (2001).

*Chiloglottis gunnii* as meant by Molloy. Native orchids of NZ: 9 (1983), is not that of Lindl. (1840).

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

**Corybas acuminatus** M.A.Clem. & Hatch. New Zealand J. Bot. 23: 491, f2 (1985).

*Nematoceras acuminatum* (M.A.Clem. & Hatch) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).

*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).

**Corybas carsei** (Cheeseman) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945).

*Corysanthes carsei* Cheeseman. Trans. & Proc. New Zealand Inst. 44: 162 (1912).

*Anzybas carsei* (Cheeseman) D.L.Jones & M.A.Clem. Orchadian 13(10): 443 (2002).

*Corybas unguiculatus* as meant by L.B.Moore. Fl. New Zealand Vol. 2: 116 (1970) is not *Corysanthes unguiculatus* of R.Br. (1810).



- Corybas cheesemanii** (Hook. f. ex Kirk) Kuntze. Revis. Gen. Pl. 2: 657 (1891).  
*Corysanthes cheesemanii* Hook. f. ex Kirk. Trans. & Proc. New Zealand Inst. 3: 180 (1871).  
*Corybas acorniflorus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945), is not that of Salisb. (1807).
- Corybas confusus** Lohenebach Phytotaxa 270 (1): 9 (2016).
- Corybas cryptanthus** Hatch. Trans. Roy. Soc. New Zealand 83: 577 (1956).  
*Molloybas cryptanthus* (Hatch) D.L.Jones & M.A.Clem. Orchadian 13(10): 448 (2002).  
*Corybas saphrophyticus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 366, 171 (1952), is not that of Schltr. (1923).
- Corybas dienerum** D.L. Jones Fl. Australia 50: 572 (1993).  
*Corysanthes dienera* (D.L.Jones) Szlach  
*Nematoceras dienerum* D.L. Jones et al. Orchadian 13(10): 437-468 (2002).
- Corybas hatchii** Lohenebach. NZ. Native Orchid Journal 139: 4 (2016).  
*Corybas macranthus* (Hook. f.) Rehb. f. var. *longipetalus* Hatch. Trans. & Proc. Roy. Soc. New Zealand 76: 580, 160(1) (1947).  
*Nematoceras longipetalum* (Hatch) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corybas longipetalus* (Hatch) Hatch. NZNOG Journal 47: 6 (1993), is not that of Schltr. (1923).
- Corybas hypogaeus** (Colenso) Lohenebach. NZ. Native Orchid Journal 139: 5 (2016).  
*Corysanthes hypogaea* Colenso. Trans. & Proc. New Zealand Inst. 16: 336 (1884).  
*Nematoceras hypogaeum* (Colenso) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).
- Corybas iridescens** Irwin & Molloy. New Zealand J. Bot. 34: 1, f1 (1996).  
*Nematoceras iridescens* (Irwin & Molloy) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corysanthes iridescens* (Irwin & Molloy) Szlach. Richardsonia 3(2): 98 (2003).
- Corybas macranthus** (Hook. f.) Rehb. f. Beitr. Syst. Pflanzenk. 67 (1871).  
*Nematoceras macranthum* Hook. f. Fl. Nov.-Zel. 1: 250 (1853).  
*Corysanthes macrantha* (Hook. f.) Hook. f. Handb. N. Zeal. Fl. 266 (1864).  
 There are several taxa in the *C. macranthus* complex.
- Corybas oblongus** (Hook. f.) Rehb. f. Beitr. Syst. Pflanzenk. 67 (1871).  
*Singularybas oblongus* (Hook. f.) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Nematoceras oblonga* Hook. f. Fl. Nov.-Zel. 1: 250, 157B (1853).  
*Corysanthes oblonga* (Hook. f.) Hook. f. Handb. N. Zeal. Fl. 266 (1864).  
 Two or three taxa in this complex. One may be *Hb* Matthews's *Corysanthes* "aestivalis" and a white flowered form (Nelson lakes and subantarctic islands) appears to be separate.
- Corybas obscurus** Lohenebach Phytotaxa 270 (1): 11 (2016).
- Corybas orbiculatus** (Colenso) L.B.Moore. Fl. New Zealand Vol. 2: 118 (1970).  
*Corysanthes orbiculata* Colenso. Trans. & Proc. New Zealand Inst. 23: 389 (1891).  
*Nematoceras orbiculatum* (Colenso) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*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)).
- Corybas papa** Molloy & Irwin. New Zealand J. Bot. 34(1): 5, f1 (1996).  
*Nematoceras papa* (Molloy & Irwin) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corysanthes papa* (Molloy & Irwin) Szlach. Richardsonia 3(2): 98 (2003).
- Corybas papillosum** (Colenso) Lohenebach. NZ. Native Orchid Journal 139: 5 (2016).  
*Corysanthes papillosum* Colenso. Trans. & Proc. New Zealand Inst. 16: 337 (1884).  
*Nematoceras papillosum* (Colenso) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
 Nothing clearly separates it from *Corybas macranthus*.
- Corybas rivularis** (A.Cunn.) Rehb. f. Beitr. Syst. Pflanzenk. 67 (1871).  
*Acianthus rivularis* A.Cunn. Companion Bot. Mag. 2: 376 (1837).  
*Nematoceras rivulare* (A.Cunn.) Hook. f. Fl. Nov.-Zel. 1: 251 (1853).  
*Corysanthes rivularis* (A.Cunn.) Hook. f. Handb. N. Zeal. Fl. 266 (1864).  
*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 orbiculata* of Colenso (1891).  
 Undescribed related plants have been tagged C. "Kaiaia", C. "rest area", C. "Kaitarakahi", C. "whiskers" (aka C. "viridisi"), C. "Mangahua", C. "sphagnum", C. "Pollok" and C. "Motutangi".
- Corybas rotundifolius** (Hook. f.) Rehb. f. Beitr. Syst. Pflanzenk. 67 (1871).  
*Nematoceras rotundifolia* Hook. f. Fl. Nov.-Zel. 1: 251 (1853).  
*Corysanthes rotundifolia* (Hook. f.) Hook. f. Handb. N. Zeal. Fl. 266 (1864).  
*Corysanthes matthewsii* Cheeseman. Trans. & Proc. New Zealand Inst. 31: 351 (1899).  
*Corybas matthewsii* (Cheeseman) Schltr. Rept. Spec. Nov. Regni Veg. 19: 23 (1923).
- Anzybas rotundifolius* (Hook. f.) D.L.Jones & M.A.Clem. Orchadian 13(10): 443 (2002).  
*Corybas unguiculatus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945), is not *Corysanthes unguiculatus* of R.Br. (1810).
- Corybas sancteigorjanius** Lohenebach Phytotaxa 270 (1): 12 (2016).
- Corybas sulcatus** (M.A. Clem. et D.L. Jones) G.N. Bakh. Viet. Naturalist 127: 56 (2010).  
*Nematoceras sulcatum* M.A.Clem. & D.L.Jones. Telopea. 11(4): 405–411 (2007).
- Corybas trilobus** (Hook. f.) Rehb. f. Beitr. Syst. Pflanzenk. 67 (1871).  
*Nematoceras trilobum* Hook. f. Fl. Nov.-Zel. 1: 250 (1853).  
*Corysanthes triloba* (Hook. f.) Hook. f. Handb. N. Zeal. Fl. 265 (1864).  
 A number of taxa in the *Corybas trilobus* group of speculative taxonomic status include the tiny May to July flowering forms with the tagname C. "pygmy", as well as C. "Remutaka", C. "Rewanui", C. "tribriva", C. "tridodd", C. "Trotters" and others.
- Corybas vitreus** Lohenebach Phytotaxa 270 (1): 12 (2016).
- Corybas walliae** Lohenebach Phytotaxa 270 (1): 13 (2016).
- Cryptostylis R.Br. Prodr. Fl. Nov. Holland.: 317 (1810)**
- Cryptostylis subulata** (Labill.) Rehb. f. Beitr. Syst. Pflanzenk. 15 (1871).  
*Malaxis subulata* Labill. Nov. Holl. Pl. 2: 62, t212 (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.) Rehb. 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* (R.Br.) var. *reniformis* (Hook. f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1946).  
*Cyrtostylis reniformis* when used for NZ plants is not that of R.Br. Prodr. Fl. Nov. Holland.: 322 (1810).
- Danhatchia Garay & Christenson. Orchadian 11(10): 469, f471 (1995)**
- Danhatchia australis** (Hatch) Garay & Christenson. Orchadian 11(10): 470 (1995).  
*Yocania australis* Hatch. Trans. Roy. Soc. New Zealand, Bot. 2: 185 (1963).  
*Danhatchia novaehollandiae* Jones, D.L. & Clements, M.A. (2018). Australian Orchid Review 83(4).
- Dendrobium Swartz. Nova Acta Regiae Soc. Sci. Upsal., ser. 2, 6: 82. (1799)**
- Dendrobium cunninghamii** Lindl. Bot. Reg. 21 sub. 1: 1756 (1835).  
*Dendrobium biflorum* as meant by A.Rech. Fossil Fl. Nov.-Zel. 221 (1832), is not that of Sw. (1800).  
*Dendrobium lessertii* Colenso. Trans. & Proc. New Zealand Inst. 15: 326 (1883).  
*Winika cunninghamii* (Lindl.) M.A.Clem., D.L.Jones & Molloy. Orchadian 12(5): 214 (1997).
- Drymoanthus Nicholls. Victorian Naturalist 59: 173 (1943)**
- Drymoanthus adversus** (Hook. f.) Dockrill. Australasian Sarcanthinae: 32, l3 (1967).  
*Sarcochilus adversus* Hook. f. Fl. Nov.-Zel. 1: 241 (1853).  
*Sarcochilus breviscapa* Colenso. Trans. & Proc. New Zealand Inst. 14: 332 (1882).  
*Newzealochilus adversus* (Hook. f.) R.Rice. Intro. Aust. & NZ Bulbophyllum and Vandaceous orchids (2019).
- Drymoanthus flavus** St George & Molloy. New Zealand J. Bot. 32: 416, f1 (1994).  
*Newzealochilus flavus* (St George & Molloy) R. Rice. Introduction to the Australian and New Zealand Bulbophyllum and Vandaceous orchids (2019).
- Earina Lindl. Bot. Reg. sub L1699 (1834)**
- Earina aestivalis** Cheeseman. Trans. & Proc. New Zealand Inst. 51: 93 (1919). Questionably different from *E. mucronata*.
- 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 alta* Colenso. Trans. & Proc. New Zealand Inst. 18: 267 (1886).
- Earina mucronata** Lindl. Bot. Reg. 20 sub L1699 (1834).  
*Earina quadrilobata* Colenso. Trans. & Proc. New Zealand Inst. 15: 325 (1883).

**Gastrodia R.Br. Prodr. Fl. Nov. Holland: 330 (1810)**

*Gastrodia cooperae* Lehnebach & J.R.Rolle. Phytotaxa 277(3): 242 (2016).

*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, 120, 15-7 (1893).

*Gastrodia molloyi* Lehnebach & J.R.Rolle. Phytotaxa 277(3): 244 (2016).

*Gastrodia sesamoides* R.Br. Prodr. Fl. Nov. Holland: 330 (1810).

**Genoplesium (Hook.f.) D.L.Jones & M.A.Clem. Lindleyana 4(3): 144 (1989).**

*Genoplesium nudum* (Hook.f.) D.L.Jones & M.A.Clem. Lindleyana 4(3): 144 (1989).

*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).

*Corunastylis nuda* (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 13(10): 461 (2002).

*Genoplesium pumilum* (Hook.f.) D.L.Jones & M.A.Clem. Lindleyana 4(3): 144 (1989).

*Prasophyllum pumilum* Hook.f. Fl. Nov.-Zel. 1: 242 (1853).

*Corunastylis pumila* (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 13(10): 461 (2002).

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

*Microtis arenaria* Lindl. Gen. Sp. Orchid. Pl. 1306 (1840).

*Microtis pilloha* Nicholls. Victoria Naturalist 66: 93, fO-L (1949).

*Microtis babulosa* Colenso. Trans. & Proc. New Zealand Inst. 18: 269 (1886). The type has not been found but Colenso's notched labellum suggests *M. arenaria*.

*Microtis longifolia* Colenso. Trans. & Proc. New Zealand Inst. 17: 247 (1885). A small autumn flowering grassland form, probably distinct from *M. unifolia*.

*Microtis oligantha* L.B.Moore. New Zealand J. Bot. 6: 473, f1 (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. Pflanzk. 24 (1871).

*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, fA-F (1949).

*Microtis holmesii* Nicholls. Victoria Naturalist 66: 93, fG-H (1949).

The NZ plant may differ from the Australian *M. parviflora*.

*Microtis unifolia* (G. Forst.) Rchb.f. Beitr. Syst. Pflanzk. 62 (1871).

*Ophrys unifolia* G. Forst. Fl. Ins. Austr. 59 (1786).

*Eppactis porrifolia* Sw. Kongl. Vetensk. Acad. Nya Handl. 21: 233 (1800).

*Microtis porrifolia* (Sw.) R.Br. ex Spreng. Syst. Veg. (ed. 16) [Spræng] 3: 713 (1826).

*Microtis banksii* A.Cunn. Bot. Mag. 62: sub 13377 (1835).

*Microtis fruttorum* Schltdl. Linnaea 20: 568 (1847).

*Microtis viridis* F.Muell. Fragm. (Mueller) 5: 97 (1866).

**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 t25, f1 (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).

Many botanists regard *Orthoceras* as monotypic; the reported differences between *O. strictum* and *O. novae-zeelandiae* are inconsistent.

**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). This appears to be Irwin's *Prasophyllum* "A".

*Prasophyllum negrei* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 76: 200 (1946) is not that of R.S.Rogers & Rees (1921).

Irwin's *Prasophyllum* "B" in NZNOG Journal 79-9 (ed. 10) (2001) appears to match *P. colensoi*.

HB Mathews's *P. "patentifolium"* in *Ms* is a smaller plant. Others in this group do not fit easily into any of the above.

*Prasophyllum hectorii* (Buchanan) Molloy, D.L.Jones & M.A.Clem. Orchadian 15: 41 (2005).

*Gastrodia hectorii* 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 Riipp (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.Mathews 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 albola* (Hatch) L.B.Moore. New Zealand J. Bot. 6: 486, f3 (1969).

*Pterostylis trullifolia* Hook.f. var. *albola* Hatch. Trans. Roy. Soc. NZ 77: 244, f30, f3E-H (1949).

*Diplodium albolum* (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 alveata* Garnet. Victoria Naturalist 59: 91 (1939).

*Diplodium alveatum* (Garnet) D.L.Jones & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).

*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 brumalis* L.B.Moore. New Zealand J. Bot. 6: 485, f3 (1969).

*Pterostylis trullifolia* Hook.f. var. *rubella* Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 244 (1949).

*Diplodium brumale* (L.B.Moore) D.L.Jones, Molloy & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).

*Pterostylis banksii* A.Cunn. Companion Bot. Mag. 2: 376 (1837).

*Pterostylis cardostigma* D.Cooper. New Zealand J. Bot. 21: 97, f1,2 (1983).

*Pterostylis cernua* D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 267, f2 (1997).

*Pterostylis emarginata* Colenso. Trans. & Proc. New Zealand Inst. 15: 328 (1883).

Structurally similar to *P. banksii* but consistently smaller and with a consistently notched labellum tip.

*Pterostylis foliata* Hook.f. Fl. Nov.-Zel. 1: 249 (1853).

*Pterostylis verreauxi* R.S.Rogers. Trans. & Proc. Roy. Soc. South Australia 38: 360-361, f18(2) (1914).

*Pterostylis gracilis* Nicholls. Victoria Naturalist 43: 324-326 (1927).

*Pterostylis graminea* Hook.f. Fl. Nov.-Zel. 1: 248 (1853).

There appear to be more than one taxon in the *P. graminea* complex, perhaps including tag named *P. "sphagnum"* and *P. "peninsula"*.

*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, t18 (1950).

*Pterostylis irwinii* D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 269 (1997).

*Pterostylis micromegala* Hook.f. Fl. Nov.-Zel. 1: 248 (1853).

*Pterostylis polyphylla* Colenso. Trans. & Proc. New Zealand Inst. 22: 489 (1890).

*Pterostylis furcata* Lindl. var. *micromegala* Hatch. Trans. Roy. Soc. New Zealand 80: 326 (1953).

*Pterostylis montana* Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 239, t22 (1949).

*Pterostylis montana* is highly variable and may be a group including several undescribed taxa.

*Pterostylis nutans* R.Br. Prodr. Fl. Nov. Holland: 327 (1810).

*Pterostylis mathewii* Cheeseman. Trans. & Proc. New Zealand Inst. 47: 46 (1915).

*Pterostylis oliveri* Petrie. Trans. & Proc. New Zealand Inst. 26: 270 (1894).

*Pterostylis patulosa* 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 puberula* Hook.f. Fl. Nov.-Zel. 1: 249 (1853).

*Lingulella puberula* (Hook.f.) D.L.Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 75 (2002).

*Pterostylis nana* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 237 (1949) is not that of R.Br. (1810).

*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).

This name may apply to a widespread entity similar to *P. patens* but with shorter tepals.

*Pterostylis subsimilis* Colenso. Trans. & Proc. New Zealand Inst. 28: 611 (1896).

This name is here applied to distinct large-flowered Rushine and Tararua plants.

*Pterostylis tanyopa* D.L.Jones, Molloy & M.A.Clem. Orchadian 12(6): 273 (1997).

*Hymenochilus tanyopidis* (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 74 (2002).

*Pterostylis cycnocephala* as meant by L.B.Moore. Fl. New Zealand Vol. 2: 135 (1970) and others (1970-1997), is not that of Fitzg. (1876).

**Pterostylis tasmanica** D.L.Jones. *Muelleria* 8(2): 177 (1994).  
*Plumatiichilos tasmanicum* (D.L.Jones) Szlach. *Polish Bot. J.* 46(1): 23 (2001).  
*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).  
***Pterostylis tristis*** Colenso. *Trans. & Proc. New Zealand Inst.* 18: 271 (1886).  
*Hymenochilus tristis* (Colenso) D.L.Jones, M.A.Clem, & Molloy. *Austral. Orchid Res.* 4: 74 (2002).  
*Pterostylis mutica* as meant by Cheeseman. *Trans. & Proc. New Zealand Inst.* 15: 300 (1883), is not that of R.Br. (1810).  
***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).  
*Diplodium trullifolium* (Hook.f.) D.L.Jones, Molloy & M.A.Clem. *Austral. Orchid Res.* 4: 72 (2002).  
***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).

***Spiranthes* Rich. De Orchid. Eur. 20, 28, 36 (1817)**

***Spiranthes australis*** Lindl. *Bot. Reg. subit.* 823 (1824).  
*Spiranthes novae-zelandiae* Hook.f. *Fl. Nov.-Zel.* 1: 243 (1853).  
*Nevittia australis* R.Br. *Prodr.* (1810).  
*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* 8(2): 614 (1954), is not that of Becker, Bakh.f. & Steenis (1950).  
***Spiranthes* “Motutangi”** appears a larger and structurally different plant, but is not separable by DNA.

***Taeniophyllum* Blume, Bijdr. Fl. Ned. Ind.: 355 (1825)**

***Taeniophyllum northlandicum*** R.Rice et M.A.M.Renner (2019)  
 Was identified as *T. norfolkianum*.

***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 alba*** Colenso. *Trans. & Proc. New Zealand Inst.* 18: 272 (1886).  
*Thelymitra longifolia* J.R.Forst. & G.Forst. var. *alba* (Colenso) Cheeseman. *Man. New Zealand Fl.* 339 (1925).  
*Thelymitra* “Whakapapa”, an undescribed taxon from Ruapehu appears identical.  
***Thelymitra brevifolia*** Jeanes. *Muelleria* 19: 19–79 (2004).  
 This is probably the identity of *T. cornuta* Colenso. *Trans. & Proc. New Zealand Inst.* 20: 206 (1888).  
***Thelymitra carnea*** R.Br. *Prodr.* *Fl. Nov. Holland.*: 314 (1810).  
*Thelymitra imberbis* Hook.f. *Fl. Nov.-Zel.* 1: 244 (1853). A yellow form.  
*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 (1854).  
*Thelymitra intermedia* Berggr. *Minneskr. Fisiog. Sällsk. Lund* 8: 21 (1878) is a synonym.  
*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 concinna*** Colenso. *Trans. & Proc. New Zealand Inst.* 20: 207 (1888).  
 Here regarded as neither a colour form of *T. hatchii*, nor a synonym of *T. pulchella*.  
***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* 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 venosa* as meant by Cheeseman. *Man. New Zealand Fl.* 671 (1906), is not that of R.Br. (1810).

***Thelymitra x dentata*** = a sterile hybrid of *T. longifolia* x *T. pulchella*.

***Thelymitra x dentata*** L.B.Moore. *New Zealand J. Bot.* 6: 478, f2 (1969).  
***Thelymitra formosa*** Colenso. *Trans. & Proc. New Zealand Inst.* 16: 338 (1884).  
*Thelymitra circumscissa* as meant by Hatch. *NZNOG Journal* 65: 8 (1997), is not that of Fitzg. (1878).  
***Thelymitra hatchii*** L.B.Moore. *New Zealand J. Bot.* 6: 477, f2 (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 ixoides*** Swartz. *Kongl. Vetensk. Acad. Nya Handl.* 21: 253, t.3, fL (1800).  
*Thelymitra ixoides* var. *typica* (Hook.f.) Rupp & Hatch. *Proc. Linn. Soc. New South Wales* 70: 59 (1945).

This may not be the same as the Australian plant.  
*Thelymitra ixoides* D.L.Jones, M.A.Clem. *Orchadian* 12(7): 330 (1998) is probably a mutated *T. ixoides*.  
***Thelymitra longifolia*** J.R.Forst. & G.Forst. *Char. Gen. Pl.* 98 t.49 (1776).  
*Scrapias regularis* Banks & Sol. ex G.Forst. *Prodr.* 59 (1776).  
*Thelymitra forsteri* Sw. *Kongl. Vetensk. Acad. Nya Handl.* 21: 228 (1800).  
*Thelymitra longifolia* J.R.Forst. & G.Forst. var. *forsteri* Hatch. *Trans. & Proc. Roy. Soc. New Zealand* 79: 396, plate 80 B–E (1952).  
 The name *T. longifolia* is here restricted to robust plants with wide, fringed, floppy leaves and entire column midlobes.  
*Thelymitra aff. longifolia* is a range of somewhat similar plants with ridged flowers in the Far North.  
*Tl. alba*, *purpureofusca*, “fusca” and *memoralis* all have notched column midlobes and are here treated as different species.  
***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 nemoralis*** Colenso. *Trans. & Proc. New Zealand Inst.* 17: 249 (1885).  
***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 other forms in this group.

***Thelymitra pulchella*** Hook.f. *Fl. Nov.-Zel.* 1: 244 (1853).  
 The name *T. pulchella* is here restricted to plants with bare or shallowly toothed (not fimbriate nor ciliate) column arms and toothed (not rolled) post-anther lobe. *Thelymitra* “samsiribria” with plain blue flowers and *T. pulchella* sensu Cheeseman are included.  
***Thelymitra fimbriata*** Colenso. *Trans. & Proc. New Zealand Inst.* 22: 490 (1890).  
*Thelymitra pachyphylla* Cheeseman. *Man. New Zealand Fl.* 1161 (1906).  
*Thelymitra caesia* Petrie. *Trans. & Proc. New Zealand Inst.* 51: 107 (1919).  
*Thelymitra pulchella* s.l. (aff. *erosa*).  
 The anatomy and distinguishing features of these need to be clarified. They appear to be consistently different from *T. pulchella* s.s.  
***Thelymitra purpureofusca*** Colenso. *Trans. & Proc. New Zealand Inst.* 17: 249 (1885).  
***Thelymitra sanciflora*** 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, f6 (1990).  
*Thelymitra intermedia* as meant by L.B.Moore. *Fl. New Zealand Vol. 2*: 129 (1970), is not that of Berggren (1878).  
***Thelymitra* “Ahipara”**: an undescribed taxon from the Far North, similar to *T. “darkie”* and to the Australian *T. holmesii*.  
***Thelymitra “darkie”***: undescribed taxon from the Far North (see McCrae. *NZNOG Journal* 24: 11; 77: 22 [1987]).  
***Thelymitra “fusca”***: a tiny, brown-leaved, dark-stemmed beech forest plant.  
***Thelymitra “Mangawhai”***: undescribed Far North taxon (K. Matthews).  
***Thelymitra “rough leaf”***: undescribed taxon from the Far North (see McCrae. *NZNOG Journal* 24: 11; 77: 22 [1987]).  
***Thelymitra “sky”***: undescribed taxon from the Far North (see Scanlen. *NZNOG* 70: 30–35, f6 [1998]).

***Townsonia* Cheeseman. Man. New Zealand Fl. 692 (1906).**

***Townsonia delvexa*** Cheeseman. *Man. New Zealand Fl.* 692 (1906).  
*Townsonia viridis* as meant by Schllr. *Report. 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).

***Waireria* D.L.Jones, M.A.Clem, & Molloy. *Orchadian* 12(6): 282 (1997)**

***Waireria 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).

**Hybrids—Proved:** *Thelymitra xdentata* = *T. longifolia* x *T. pulchella*  
**—Probable:** *Corybas hatchii* x *C. vitreus*

*Corybas macranthus* x *C. “Trotters”*  
*Corybas orbiculatus* x *C. macranthus*  
*Corybas papa* x *C. indescens*  
*Corybas trilobus* s.l. x *C. “whiskers”*  
*Corybas trilobus* s.l. x *C. indescens*  
*Corybas trilobus* s.l. x *C. macranthus*  
*Pterostylis agathicola* x *P. aff. graminia*  
*Pterostylis australis* x *P. oliveri*  
*Pterostylis banksii* x *P. irsoniana*  
*Thelymitra “Ahipara”* x *T. “darkie”*  
*Thelymitra “Comet”*