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# Editorial: Ian St George

## Karl Ludwig von Blume

wrote *Collection des Orchidées les plus remarquables de l'archipel Indien et du Japon* (A collection of most remarkable orchids from the East Indies and Japan) published by CG Sulpke in Amsterdam in 1858 (360 pages, 70 plates, some in colour). You can buy a copy for US\$2,500 at [bookfinder.com](http://bookfinder.com). Happily you can look at all the pictures gratis at <http://caliban.mpiz-koeln.mpg.de/~stueber/deblume/index.html>.

Blume described *Phaleanopsis* and a number of other orchid genera. He was a German who studied medicine, worked in Java (then a Dutch possession) and later in Amsterdam. "Among the earliest of orchidologists to become as well known for his obstinacy and determination to adhere to his own principles as for his contributions.... Frustration and conflict of opinion were his companions during a major portion of his life.... It seemed that he had an astonishing capacity for work and an ambition no less great, for he collected largely and began to publish while yet little acquainted with the work already done in the scientific institutions of Europe." (<http://www.orchids.co.in/orchidologists/karl-ludwig-blume.shtm>). Blume's book was illustrated by different artists.

I was interested in the illustrations from his *Collections* because some of them show *Corysanthes* (see inside front cover, for example), *Gastrodia* and *Thelymitra*.

I have postulated elsewhere that the short column of *Gastrodia cunninghamii* and *G. minor* are New Zealand adaptations for self-pollination. Before now I had seen nothing to suggest that short columns existed in *Gastrodia* from other countries.

One of Blume's orchids does show a

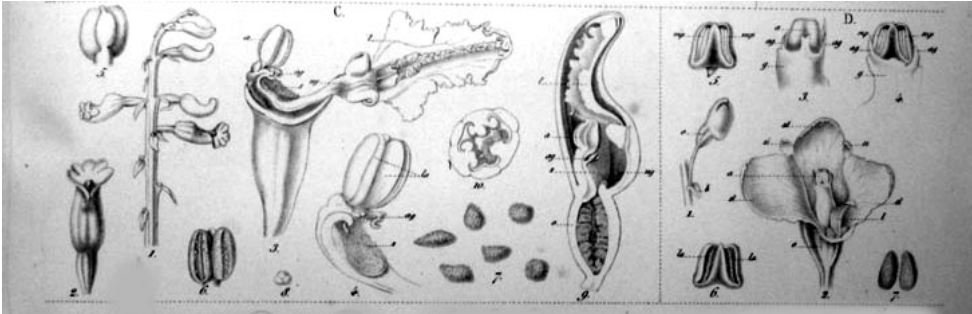


Detail from Blume: *Gastrodia elata* and *G. gracilis*

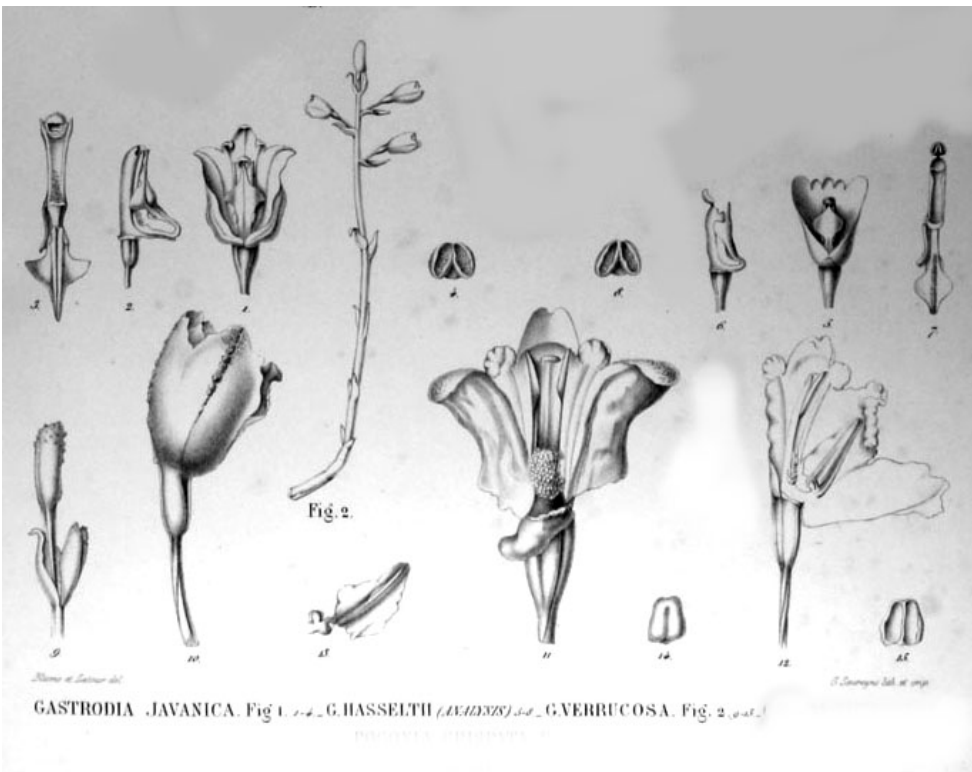
short column, however: *Gastrodia antennifera* Blume. I wonder if the short column developed independently in NZ, or whether this was an Asian development that reached

NZ, bypassing Australia, none of whose *Gastrodia* have short columns.

PlantSystematics.org lists 60 *Gastrodia* species.



Detail from Blume: *Gastrodia antennifera* and *G. gracilis*. Note the short column of *G. antennifera*



GASTRODIA - JAVANICA. Fig. 1. 1-4. G. HASSELTII (AVANIKUS) 5-8. G. VERRUCOSA. Fig. 2. 9-11.

Detail from Blume: *Gastrodia javanica*, *G. hasseltii* and *G. verrucosa*: all have long columns.

# Trick photography

Here are a few things I am trying. I won't claim I have perfected any of these techniques yet, but I'd like to discuss them.

1. "High key" photographs with shadowless white backgrounds (eg, cover photo this issue) can be stylish in an artificial way.

There are some delightful ones of Australian *Pterostylis* on the net—eg at [www.goldstreetstudios.com.au/MSeafort.htm](http://www.goldstreetstudios.com.au/MSeafort.htm).

I have taken high key portraits of people in the past, using a big sheet of white paper curved forward to eliminate the shadow at the junction of wall and floor.

Flowers need only a flat white background plane, but shadows from frontlighting (including flashlight) will fall on the background. Anyway, if you use flash, the white comes out grey.

So you have either to use natural lighting, and adjust the exposure to keep the background white, or you have to adjust it later in Photoshop.

Or you use artificial light diagonally from above left, and the white background far enough behind to avoid the shadows.

I tried the white of an empty page in Microsoft Word, but it tended to backlight the flower. I tried a number of Photoshop manipulations with little success.

I'm working on it.

2. I have acquired a "Time Machine" from Brian Mumford Photography in the US (<http://www.bmumford.com/photo/camctr.html>).

This is a programmable controller and intervalometer for special photographic effects. It allows you to trip the shutter of your camera or fire an electronic flash at regular intervals (time lapse), at specific times of day, or in response to trigger events. These trigger events can be sound, light, motion, or electrical signals. A wide variety of sensors is available for use with the Time Machine.

There is also a motorized rotary table that

can be used to create time lapse movies that pan across a scene, or as a motorized indexing table to rotate a subject for "virtual reality" images.



In nature photography the Time Machine can trip the camera shutter, trigger a flash, or start a movie camera when a creature moves – a mouse at night, a bird visiting its nest.

It allows you to take a series of pictures at regular intervals or at specific times of day or night. These sequences can be combined into a time lapse movie on the computer. You can watch speeded up clouds scudding across the sky, plants growing, a building abuilding, a manufacturing process.

For events that are too fast to see normally, you can configure the Time Machine to trip an electronic flash in a dark room while the camera shutter is held open. This will freeze motions like popping balloons or water drops.

You can make "slow motion" movies of high speed photographs. The inventor of the strobe light took amazing pictures of bullets in flight. The Time Machine makes it possible to time exposures on this scale of precision, but you need a very fast flash to freeze very fast motions.

I want to use time lapse to look at *Nematoceras* opening, and the "Optical

interrupter” sensor to trigger a shot when an insect crosses the fine infra-red beam across the labellum of various orchids, night or day.

My puzzle now is how to protect the gear from passers-by and the weather, while still allowing the insect to approach the flower.

3. Photography deep in the bush on a windy day can be trying to the point of exasperation. No suitable natural background, too much wind, reflected light distorting colour, too dark, etc etc. The perfect orchid shot—naturally lit, in its habitat—can be difficult.

The easy shots, lets face it, are taken in the studio—ie, at home. Studio backgrounds then become important—I’ve used bits of blue formica to look like sky, orange bits to look like sunsets, the backs of green clothbound books, lumps of wood, fern fronds—but they all appear a bit phoney.

Here is my latest idea: a photo of the bush on my computer screen as a background. I went to Google images and entered “New Zealand bush” and presto! a wide range of bush scenes. I copied one I liked into Photoshop, enlarged it to fill most of the screen (some pixelation doesn’t matter, the background will be out of focus), placed my orchid in front, and took the shot.

Simple? Yes, if you use natural lighting for the orchid, but it will be backlit by the screen to some extent. Flash reflects unpleasantly from the screen. Tungsten room lights make the orchid yellow—unless you correct white balance, when your bush scene will look blue. For tungsten lighting you have to change the colour balance of the bush scene photograph to increase the yellow tones (“image/adjustments/colour balance” in Photoshop).

Inside front cover shows my first attempt—a *Nematoceras trilobum* agg. The specimen was brought in to my office on 13 August by Pat Enright. The left shot is natural light, upper right is tungsten lamp with white balance corrected, and lower right is tungsten lamp with white balance corrected as well as background colour balance corrected towards yellow.

There has to be a better way.

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# The type locality

## 1: Kahurangi and *Nematoceras trilobum* s.s.

by Ian St George

There is a range of taxa under the name *Corybas trilobus*, more recently referred to as the *Nematoceras trilobum* aggregate. The NZ Plant Conservation Network (<http://www.nzpcn.org.nz/>) typically has it as “Coastal to subalpine. Probably the most widely ranging of all the New Zealand species, occupying a diverse array of habitats from coastal dune forest and scrub to subalpine shrublands and mires”.

It becomes necessary then to identify which of these taxa is the original plant described as *Nematoceras triloba* by JD Hooker in 1853 [1] – which plant is in fact *Nematoceras trilobum* s.s. - in the strict sense, *sensu stricto*.

To make that identification we have to rely on historic documents and herbarium specimens. Often these are inadequate – the descriptions may have been sufficiently detailed when all members of the aggregate were considered one species, but they do not, nor could they be expected to, differentiate among the separate taxa we recognise today. The specimens may be dry, colourless and have shrunk in the drying; features obvious in living plants may be lost in the dried or pickled state.

The herbarium sheets may contain more than one collection, and more than one taxon. In that case a taxonomist may designate one of the specimens to be the Type. (Article 9.2 of the Code states, “A lectotype is a specimen or illustration designated from the original material as the nomenclatural type... if no holotype was indicated at the time of publication, or if it is missing, or if it is found to belong to more than one taxon” [2]).

Sometimes the exact locality of the original collection was not recorded, so we cannot go back and see what is there today.

All of those issues have hindered the identification of *Nematoceras trilobum* s.s.

### Hooker’s description

The section of the *Flora* containing JD Hooker’s protologue on *N. triloba* was published in December 1853. Hooker gave the habitat as “Northern and Middle Islands; damp woods. East Coast and interior, Colenso”.

The herbarium sheet for *Nematoceras triloba* at Kew contains two collections, one from Cape Palliser, and one labelled “161 Acianthus 1847 Colenso East Coast New Zealand” (Fig.5). Dr Brian Molloy and his colleagues have designated the latter as the lectotype.

Hooker’s description reads, “**Leaf** petiolate, 3/4 inch across, deeply cordato-reniform, trifid, rarely entire at the point; middle lobe acute. **Peduncle** shorter than the petiole, often much lengthened when in fruit. **Perianth** 1/3 inch long; **sepals** 2 inches; **petals** half the length of the lateral sepals; upper sepal dilated and retuse at the point. **Lip** very large, of two parallel recurved lobes, and having two curved ears at the base; margins nearly entire.

**Column** very small.” Much of that applies to several taxa in the aggregate, and in addition Hooker later admitted that some of the plants he described were *N. macranthum* from the South Island [3]. It is tempting to suggest the description is thus unreliable – but in fact only the leaf (“rarely entire at the point”) suggests *N. macranthum*.

### Where did Colenso find it?

There is convincing evidence that specimen 161 was actually found inland in the Wairarapa – not on any eastern coast, nor in the South (Middle) Island.

Bruce Hamlin wrote, “Colenso’s collecting can be divided conveniently into two periods: (1) the missionary years 1836-52; and (2) the



years preceding and including his retirement from 1879-99. ... The early years are those of the great journeys: to North Cape, East Cape - Bay of Plenty - Waikato, and then, after his move to Hawke's Bay, the journeys across the Ruahines to Taupo and the bi-annual walks down the Wairarapa Coast to Wellington and back via the Wairarapa valley.... Specimens resulting from these expeditions were numbered and sent to W. J. Hooker at Kew along with voluminous letters listing the numbers and giving localities and other information." [4].

In the letter Colenso sent to WJ Hooker in July 1846 he noted, "161 ?*Acianthus*, found at last!! detected (leaf only) in 1837 in banks nr the sea, Owae, E. Coast – which spot I often visited but alas! in vain. – and again, (dry capsule) vide, No. 16, "Journal," – and now, in flower, shaded damp spots, wood, with Nos. 154 and 159" [see box].

Colenso was referring in this note to three separate collections:

1. Detected (leaf only) in 1837 in banks near the sea, Owae, E. Coast.
2. Again (dry capsule) vide, No. 16, "Journal".
3. No. 161, found... now, in flower, shaded damp spots, wood, with Nos 154 and 159.

1. Colenso's "Owae, E. Coast" did not mean East Coast as we know it today: he was in Northland in 1837, relatively untravelled, still awaiting Cunningham's and Hooker's visits, and thus botanically unsophisticated. Owai stream runs to the east coast of Northland at Helena Bay a little south of the Bay of Islands; he had seen only leaves of *Nematoceras* there (he first visited Owae in February 1836, having walked from Whangaruru). Of his specimen No. 155 in the same package Colenso clearly refers to the east coast of Northland as "E. Coast" [see box].

2. His second collection was on 6 December 1841 near Tolaga Bay (Uawa river), which he reported in his "Journal of a naturalist" in 1844, "In a wood close by I found an Orchis (16), the leaf of which I had often seen at the northward; but though I had frequently sought its flower, I had never been fortunate enough to obtain it. The flowering season of this, too,

unfortunately was long past; I brought away, however, the capsule for examination." [5].

3. Colenso told WJ Hooker that specimen 161 was collected with 154 and 159, and that 154 ("*Melicytus*") was collected "from forest, hills, between Wareama, & the head of Wairarapa Valley," and 159 from "... woods, with 154." The other plants with adjacent numbers were found nearby (155 "Wairarapa and elsewhere"; 156 "head of Wairarapa Valley"; 157 "Wairarapa Valley", 158 "in Palliser Bay"; 160 "Wairarapa Valley"; 162 "bank of the River Kahurangi, near the wood whence preceding"; 163 ditto [6, and see box].

Thus he collected 162 and 163 on the bank of the Kaurangi, between Whareama and the Wairarapa Valley, near the wood where he collected 161, 154 and 159. He had seen leaves similar to those of 161 nine years earlier in Northland, and dry capsules four years earlier near Tolaga Bay.

Specimen 161 is labelled with a site (East Coast) which is a misreading of Colenso's notes.

### When did Colenso find it?

*N. trilobum* s.l. taxa flower May to December. There is convincing evidence *N. trilobum* s.s. is a late (October or November) flowering taxon.

Colenso's preceding collection of plants had been sent to Hooker on 19 November 1844, so it is a reasonable conjecture that he collected specimen 161 between November 1844 and July 1846, when he sent the collection containing specimen 161. There is no evidence that anyone else collected for Colenso in these missionary years [7], so the question becomes, "When was Colenso on the banks of the Kaurangi?"

According to his journals [8], throughout May to October 1845 Colenso was severely ill then later recovering, and from May to July 1846 he was active around the Waitangi mission station at Ahuriri in Hawkes Bay. But on 18 October 1845 he "left... to make (his) half yearly visit throughout the district...."

On 29 Oct he "arrived at Wareama", and on

**Box:** An excerpt from Colenso's letter to Hooker dated July 1846. Note especially Nos. 154, 159, 161 (*Nematoceras trilobum* s.s.), 162 and 163 gathered near Kahurangi, Wairarapa.

153. *Sp. of a Geranium from Wairarapa Valley, for exam. & compn.*
154. ?*Melicytus*, n.sp., from forest, hills, between Wareama, & the head of Wairarapa Valley; a slender shrub of loose growth, with long branches; 5 – 9 feet high: perhaps “*longistylis*” wo<sup>d</sup> be a suitable sp. name for it. – See, & comp., with No. 359.
155. *Sp. of a Yell-flowered shrub, or small tree, of slender growth, 15 – 18 feet high, woods, Wairarapa & elsewhere, - ex. & comp. with specimens sent you in former parcels from Matapouri E. Coast, (vide, No. 422, sent Decr./42), - (differing, however, from that shrub in growth & habit,) – and, also, with specimens sent you, obtained from woods W. Otahuhu, head of Manakau Bay.*
156. a small *Ranunculus*, n.sp., from dry stony plains, head of Wairarapa Valley.
157. a small white flowered plant, from sides of streams, Wairarapa Valley.
158. *Asplenium* (?? 2 species) from a damp shaded cliff in Palliser Bay – only observed in that one spot.
159. *Clematis*, ?n.sp., having affinity with *C. parviflora*, woods, with 154, (scarce).
160. An *Umbellif.* plant from Wairarapa Valley, where it grows plentifully in the grassy plains – at first I thought it was a *Smyrnium*, - but its fruit (as you will see) is more like that of *Angelica*, although I do not think it can belong to that genus. – Flowering in Sept. & October & Nov., and fruiting in Feb. & March. – Its scent is very strong, & not disagreeable.
161. ?*Acianthus*, found at last!! detected (leaf only) in 1837 in banks nr. the sea, Ouae, E. Coast – which spot I often visited but, alas! in vain. – and again, (dry capsule) vide, No. 16, “*Journal*,” – and now, in flower, shaded damp spots, wood, with Nos. 154 & 159.
162. a white flowered *Oxalis*, bank of the R. Kahurangi, near the wood whence preceding: - smaller flowers than 147, but compare.
163. Chickweed - ?*Stellaria* – past flowering, same locality with preceding: I believe this sp. to be the indig. and to be distinct from *S. media*, which is common enough, and, I believe, introduced. – I have another sp. to notice by-and-bye, with coloured margins to its leaves. These few poor sp. were merely brought as memento's, & for examn. - & not to send to Engd.

**Map 1:** Colenso's stops on his walk south in Oct. 1845

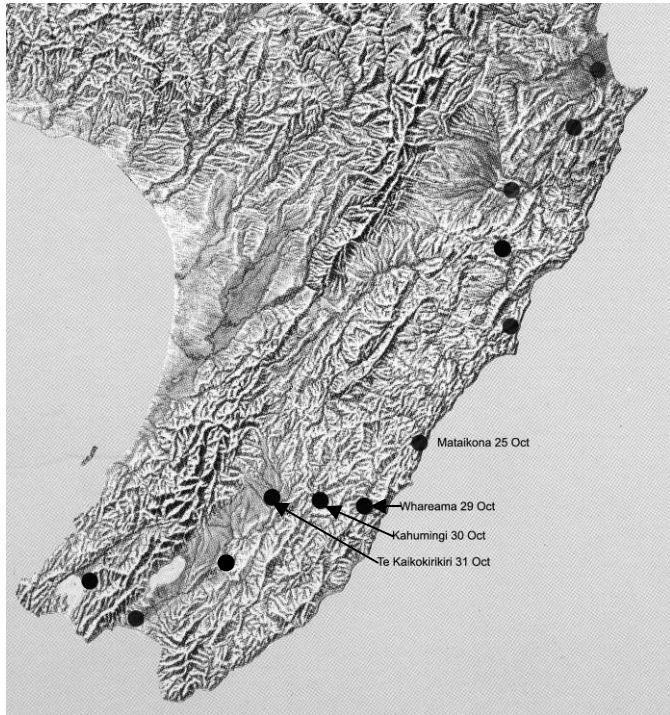
30 Oct “left this place at xi a.m. Halted at v. p.m., at the entrance of a wood near Kahumingi, very tired and hungry.” Then on 31 October “...arrived at Te Kaikokirikiri by 5 p.m.” (See Map 1: Te Kaikokirikiri is the site of Masterton, to be founded nine years later).

He continued down the Wairarapa plain to Palliser Bay, thence to Petone and Wellington, returning by the same route in mid-november, via Te Kaikokirikiri on 23 November and Whareama on 25 November 1845, whence out to the coast and on up to the mission station.

He collected specimens numbered 149 to 163 in the Wairarapa, 164-169 from Hawkes Bay, then a series from Poverty Bay. It is tempting to guess that the numbering follows the collecting sequence; if so 161 would have been collected at Kahumingi on his way home on 24 November.

He probably wrote that excited note (“at last!!”) to Hooker soon after he arrived home in December 1845 (“... and now, in flower”), then accumulated further plant specimens, and made further notes, eventually to send all 896 specimens off with his 60 page letter dated July 1846 for shipment. He added a further 23 specimens, along with hasty notes to Hooker dated 3 August (“I am obliged to write by snatches”), and 22 December 1846 (“My letter to you has been ready for some time past”) [9], so they would have arrived at Kew in 1847.

Specimen 161 is labelled 1847 – the year it arrived at Kew, not the year it was collected.



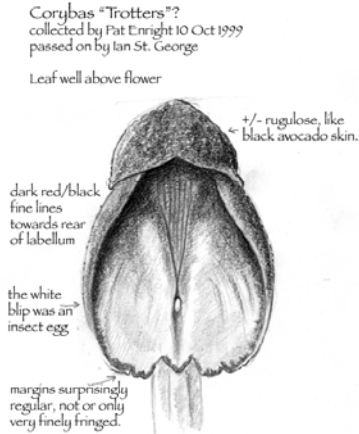
### What exactly did Colenso find?

*Nematoceras trilobum* s.s. must have been a late taxon, flowering on 30 October or 24 November, in the Wairarapa 5 km east of Tauweru on the Masterton Riversdale road, near where it crosses the Kaumingi stream at what is now the Kahumingi Station homestead.

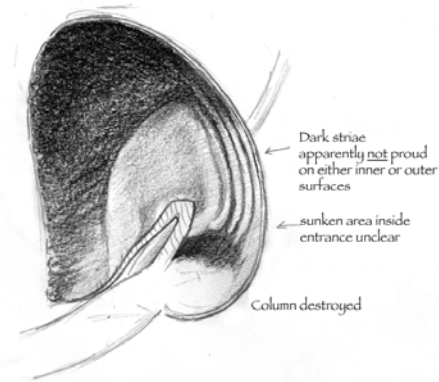
If we ignore the *N. macranthum* confusion and accept Hooker's description, it had a flower almost 10mm long, sepals 50mm long, flower below the leaf, a notched dorsal sepal and an almost entire labellar edge. It had to be similar enough to *N. macranthum* (though with “proportionally still longer threadlike lateral sepals and petals) to confuse Hooker at first.

The only *Nematoceras* I know of that matches those criteria is the late flowering plant tagged *N. “Trotters”*. The specimens on the type sheet also match *N. “Trotters”* - the flowers are small and shriveled, in some the ovary is swollen, and the largest leaf is 20mm across, but there is no mistaking the habitus, and the long sepals.

*Nematoceras trilobum*



Bruce Irwin's drawing of  
*Nematoceras* "Trotters" from the  
Wairarapa



**What is there now?**

There are sealed roads along the paths of the old Ngati Kahungunu walking tracks today. One leads west from Riversdale to Masterton via Whareama, Kahurangi and Tauweru (Map 2). We drove the road on 26 August, looking out for likely bush remnants.

At Rewanui, 5km east of Kahurangi we found an undescribed large *Nematoceras* of the *trilobum* agg. in full flower, and another tiny member of the aggregate still in early bud. Pat Enright has a plant list for that bush, and he includes *N.* "Trotters" and *N. macranthum*, neither flowering yet.

He also has a plant list for nearby Hapua Station, and it too includes *N.* "Trotters".

The Kahurangi Station homestead overlooks the muddy, willow-choked Kaurangi stream running through green paddocks; there are no bush remnants along its banks.

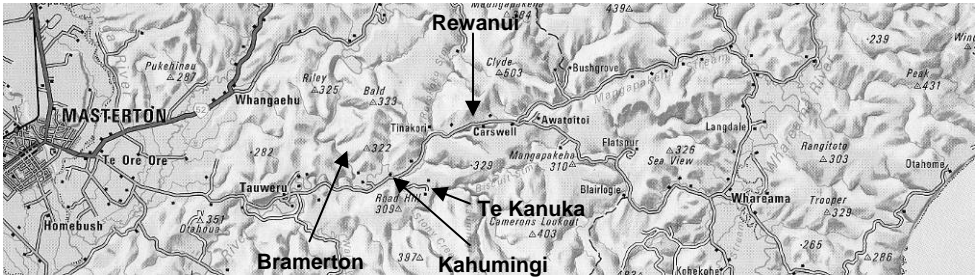
Upstream from Kahurangi is Te Kanuka Station. Pat's plant list from there includes *Corokia cotoneaster* and both *Melicytus*

species, *Clematis foetida*, an oxalis and a chickweed (corresponding to Colenso's 154, 155, 159, 162, 163), but no terrestrial orchids.

I went back on 3 November 07. The tiny *Nematoceras* at Rewanui was now a carpet of *N.* "Trotters" in full flower, the long sepals projecting above the leaves. No other members of the *N. trilobum* agg. were anywhere to be seen.

I explored bush at Bramerton Station, the next farm east of Kahurangi, on a terrace above the Tauweru River close to where it is joined by the Kaurangi. Near a large colony of *N. macranthum* s.l. was a small colony of *N.* "Trotters", the leaves and flowers smaller in a drier habitat. There was no sign of other members of the aggregate.

I have observed elsewhere that the smaller-leaved plants in a colony flower later than the larger-leaved ones, presumably to allow them to synthesise enough carbohydrate to produce a flower..



**Map 2:** *Nematoceras trilobum* s.s. was first found near Kahurangi on 24 November 1845

### Conclusion

Colenso found rather small, late-flowering plants of what we know as *Nematoceras* “Trotters” near Kahurangi on 24 November 1845. He sent them to Hooker, who mistakenly labelled the site as “East Coast”, wrote the year “1847” when they arrived at Kew, and described them as *Nematoceras triloba*. He added another Colenso collection of similar (but different) September-flowering plants from near Cape Palliser to the type sheet. Thus *N. trilobum* s.s. is the plant we have known as *N. “Trotters”*, and all the others in the complex remain undescribed, apart from *N. sulcatum* from Macquarie.

### Acknowledgements

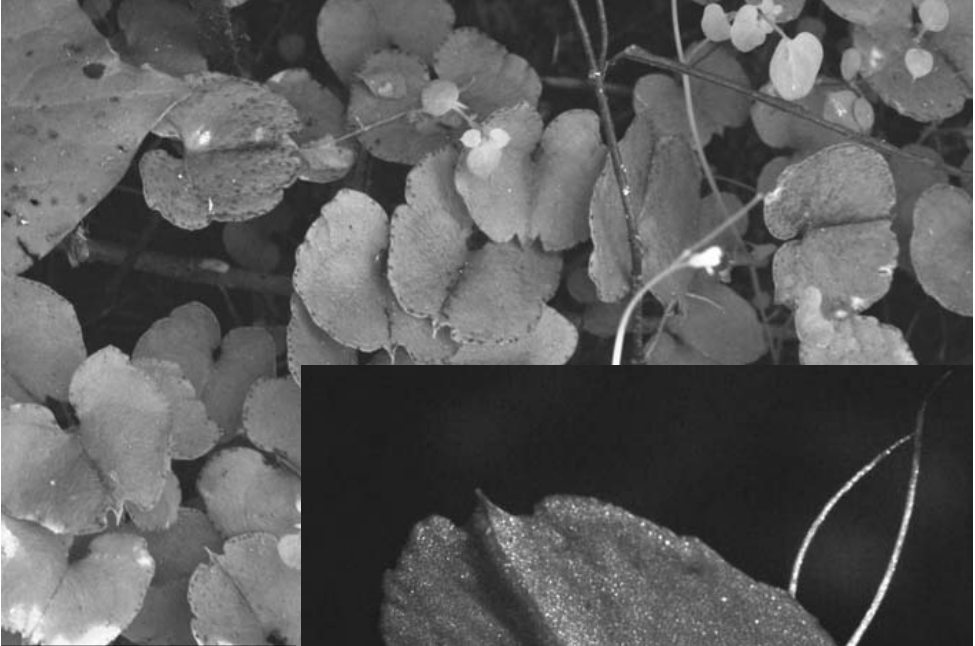
I acknowledge the Board of Trustees of RBG Kew for permission to reproduce the image of the type sheet as **Fig.5**. I am grateful to Brian Molloy and Eric Scanlen for commenting on the arguments in the text: the conclusions are my own. I am also grateful to Pat Enright, John Kirby and Clarke Goddard for help finding the sites.

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Kahurangi Station gates (above) and the Kaumingi Stream as it appears at the SH2 crossing today (below)



*Nematoceras* "Trotters" at Rewanui

6. Colenso W to Hooker WJ. July 1846. Library, Royal Botanic Gardens, Kew. Ms (Photocopies in Botany Department, Te Papa, and Alexander Turnbull Library, Wellington).
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8. Colenso W. Journals 1941-53: Hocken Library, Dunedin. MS. (Photocopies at Te Papa and Alexander Turnbull Library, Wellington.)
9. Colenso W to Hooker WJ. December 1846. Library, Royal Botanic Gardens, Kew. Ms. (Photocopies at Te Papa and Alexander Turnbull Library, Wellington.)





Fig. 5: the typesheet of *Nematoceras trilobum* in Kew herbarium



6



7



▲ Bees bearing orchid pollen—Fig.6: NZ 2007, Fig.7: 20m years ago, Dominican Republic.  
 ▼ Jeremy Rolfe's (Fig.8) *Nematoceras* aff. *trilobum*, and (Fig.9) *N.* "Rimutaka".

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9





# Truckin' and huntin'

by Gary Little, Diggers Valley, Kaitaia.

During my early twenties I spent time on outlying New Zealand islands but missed out on huntin' native orchids. 13 months on subtropical Raoul Island in the Kermadecs brought pohutukawa and nikau to my notice, but nothing much in the herbs. My only real huntin' was the goats with very little huntin' of the floral type. I did get to experience the anger of a volcano, though, and was evacuated for a period during the volcanic eruption of 1964. At subantarctic Campbell Island in '66/67 my huntin' was for feral sheep, not the island's veritable paradise of flora.

From the mid70s, main interests have been race walking and most (all) of my spare time training and truckin'. Truckin' covered racing over distances from 3000m to 50km. This is still a passion, but just over five years ago, my wife Asta and I purchased a 56acre plot of native bush in the backblocks of the Kaitaia region in preparation for retirement.

We placed a QE II Open Space Covenant on the property and began to explore our new found treasure. The diversity of the trees and ferns was enthralling, odd coloured fungi would spring into view after the rains, all bringing us a little closer to nature. A five hour trip each way from Auckland most weekends seemed worth it for house improvements plus tending bait stations and traps for predator control. Within two years we were beginning to see, and hear, a significant improvement in both the flora and the fauna.

Initially only a few *Thelymitra*, onion orchids and greenhoods were noticed, but soon other types started coming to notice. We were learning to look down and not just up! More recently, our digital cameras have picked up some of the finer differences with the help of Eric Scanlen and Kevin Matthews. My huntin' now relates to finding and recording images of the fantastic little orchids on our property.

At the beginning of the year we retired and moved here full time so no longer miss the flush flowering period of any orchids. Some species are right at the back door displaying their beauty. Initially only *Thelymitra* aff. *pauciflora* was noticed because of its blue colour contrast to the yellow clay soil, then *Pterostylis banksii* popped up in shady, mossy areas. Interest was beginning to grow. Some of the mossy areas began to produce *Caladenia atradenia* and *C. chlorostyla*, tiny in comparison to those others. Our largest kauri tree (about 400 years old) became more interesting when we found *Ichthyostomum pygmaeum* on it. The task of looking for its flowers hasn't yielded any images so far.

In the summer months, many *Microtis arenaria* seem to have good and bad seasons. Two *Earinas* produced large bunches of flowers in spring and autumn. Both are on clay banks and in mossy places on trees along with the larger flowered *Winika cunninghamii*. *Pterostylis alobula* showed up and Asta began looking for *P. agathicola* in the kauri area. There are signs, but no flowers as yet.

The list of species grows as time goes by. *T. aff. longifolia* is on clay road banks with *Orthoceras novae-zeelandiae* and *O. strictum* which are possibly cross pollinating.

A trip around the estate takes between 150 and 210 minutes depending on photographic diversions. *Drymoanthus adversus* is on many trees and patches of *Chiloglottis cornuta* are in the tea tree leaf litter with the spider orchids, *Singularibas oblongus* flowering a month or so after the spur orchid, *Corybas cheesemanii*. *Acianthus sinclairii*, sometimes called the pixie cap, is prolific. There are notable variations in colour here, yet to be evaluated. Maybe next year!

As you can see, Asta and I are becoming quite enthralled with our collection of little plants and look forward to a progression of "finds".

# The NZ orchids

*The editor's best estimate as to the current status of NZ orchid names (with thanks to Murray Dawson for his comments and corrections).*

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

**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). Bulbophyllum alliance**

**Adelopetalum tuberculatum** (Colenso) D.L.Jones, M.A.Clem. & Molloy. Orchadian 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. Orchadian 13(10): 443 (2002). Corybas alliance**

**Anzybas carsei** (Cheeseman) D.L.Jones & M.A.Clem. Orchadian 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. Orchadian 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).

## **Caladenia R.Br. Prodr. Fl. Nov. Holland. (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. Victoria 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 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).
- Caladenia chlorostyla** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 223 fl (1997).  
Caladenia catenata as meant by Cooper. Field guide to the NZ native orchids 17 (1984), is not that of Druce (1917).
- Petalochilus chlorostylus (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. Orchadian 13(9): 406 (2001).  
Caladenia “green column” tagname.  
Arethusa catenata and Caladenia alba are names used for Australian plants once confused with NZ taxa.
- Caladenia aff. chlorostyla** is a similar taxon to Caladenia chlorostyla, with red hairs and later flowering.
- 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).  
Petalochilus minor (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 13(9): 410 (2001).  
The identity of Caladenia minor is not clear.
- Caladenia nothofageti** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 226, f.1 (1997).  
Petalochilus nothofageti (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).  
Caladenia “big pink” tagname. Some flowers have a clear two rows of calli on the labellum, others have extra calli scattered to either side of the two rows.
- Caladenia aff. fuscata**: a small pink Caladenia which appears similar to the variable Australian species Caladenia fuscata (Rchb.f.) M.A.Clem. & D.L.Jones See Scanlen. NZNOG Journal 72: 22 [1999]. It appears to be identical with HB Matthews’s Ms. Caladenia “nitida-rosea” (see Scanlen E. Matthews & son on orchids. NZNOG Historical Series 2006; 14: 12).
- Caladenia aff. pusilla**: a tiny pink Caladenia 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]).

**Caladenia subgenus Stegostyla (D.L.Jones & M.A.Clem.) Hopper and A.P.Br. Austral. Syst. Bot. 17: 171–240 (2004).**

- Caladenia atradenia** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 221 (1997).  
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).  
Stegostyla atradenia (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. Orchadian 13(9): 414 (2001).  
“Caladenia calliniger” and Caladenia aff. iridescens tagnames.
- Caladenia lyallii** Hook.f. Fl. Nov.-Zel. 1: 247 (1853).  
Stegostyla lyallii (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 13(9): 413 (2001).  
There seem to be a number of taxa currently included in C. lyallii agg., including a small form from Iwitahi and Nelson Lakes.
- Caladenia aff. alpina**: Plants closer to C. alpina than to C. lyallii are in NZ (see St George. NZNOG Journal 63: 4 [1997]).

**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).

### **Chiloglottis R.Br. Prodr. Fl. Nov. Holland.: 322 (1810)**

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

*Caladenia cornuta* (Hook.f.) Rchb.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).

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

*Myrmecchila trapeziformis* (Fitzg.) D.L.Jones & M.A.Clem. Orchadian 15: 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).

### **Corunastylis Fitzg. Austral. Orchids 2(3): t.1 (1888). Prasophyllum alliance**

**Corunastylis nuda** (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 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. Orchadian 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 alliance**

**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 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). Acianthus alliance**

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

*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).

### **Danhatchia Garay & Christenson. Orchadian 11(10): 469, f.471 (1995)**

**Danhatchia australis** (Hatch) Garay & Christenson. Orchadian 11(10): 470 (1995).

*Yuania australis* Hatch. Trans. Roy. Soc. New Zealand, Bot. 2: 185 (1963).

### **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.

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

**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).

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

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

**Microtis arenaria** Lindl. Gen. Sp. Orchid. Pl. t.306 (1840).

*Microtis biloba* Nicholls. Victoria Naturalist 66: 93, f.O–L (1949).

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

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

*Microtis longifolia* Colenso. Trans. & Proc. New Zealand Inst. 17: 247 (1885).

*Microtis papillosa* Colenso. Trans. & Proc. New Zealand Inst. 18: 269 (1886).

*Microtis pulchella* as meant by Lindl. Gen. Sp. Orchid. Pl. 395 (1840), is not that of R.Br. (1810).

**Microtis aff. unifolia** a late flowering form.

**Molloybas D.L.Jones & M.A.Clem. Orchadian 13(10): 448 (2002). Corybas alliance**

**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).

**Nematoceras Hook. f., Fl. N. Zel. 1: 249, t.57 (1853). *Corybas* alliance**

**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).

*Corybas* “A” tagname.

**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 orbiculatus* of Colenso (1891) (see Molloy & Irwin. *New Zealand J. Bot.* 34 (1): 5 [1996]).

*Corybas* “short tepals” and *Corybas* “C” tagnames.

**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.

This has been regarded as a synonym of *Nematoceras rivulare*, but its status remains speculative.

**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)

*Corybas* “Mt Messenger” and *Corybas* “B” tagnames.

**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 has been regarded as a form of *Nematoceras macranthum*, and though its status remains speculative, the form with a white lower labellum 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).

*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).

*Corybas* “Kerikeri” tagname.

The *Nematoceras rivulare* complex includes unnamed taxa with the tagnames *N.* “Kaimai”, *N.* “rest area”, *N.* “Kaitarakihī”, *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 tiny May to July flowering forms with the tagname *N.* “pygmy”; the later-flowering *N.* “Trotters” (NZNOG Newsletter 28: 10–13 [1988], probably *N. trilobum* sens. strict.), *N.* “Rimutaka” (NZNOG Journal 58: 8–9 [1996]), *N.* “round leaf”, *N.* “craigielea”, *N.* “darkie”, *N.* “trisept”, *N.* “triwhite”, and many others. For the *N. trilobum* complex, MI Dawson New Zealand J. Bot. 45(4): in press (2007) reports of tetraploids in the South Island and Chatham I., and predominantly diploids in the North Island, but further chromosome counts are needed.

***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).

### ***Paracaleana* Blaxell. Contr. New South Wales Natl. Herb. 4: 281 (1972)**

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

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

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

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

*Caleana nublingii* Nicholls. Victoria Naturalist 48: 15 (1931).

*Paracaleana sullivani* (F.Muell.) Blaxell. Contr. New South Wales Natl. Herb. 4:281 (1972).

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

### ***Petalochilus* R.S.Rogers. J. Bot. 62: 65 (1924). *Caladenia* alliance**

***Petalochilus calyciformis*** R.S.Rogers. J. Bot. 62: 66 (1924).

Moore (1970) treated this as an aberrant floral (peloric) mutation of other species.

***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.

### ***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, possibly 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* “*rubricaulis*” tagname.
- Pterostylis alobula*** (Hatch) L.B.Moore. *New Zealand J. Bot.* 6: 486, f.3 (1969).  
*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. & Proc. Roy. Soc. New Zealand* 77: 244, t.30, f.3E–H (1949).  
*Diplodium alobulum* (Hatch) D.L.Jones, Molloy & M.A.Clem. *Austral. Orchid Res.* 4: 70 (2002).
- Pterostylis alveata*** Garnet. *Victoria Naturalist* 59: 91 (1939).  
*Diplodium alveatum* (Garnet) D.L.Jones, Molloy & 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* “*Catlins*” tagname
- Pterostylis australis*** Hook.f. *Fl. Nov.-Zel.* 1: 248 (1853).
- Pterostylis banksii*** A.Cunn. *Companion Bot. Mag.* 2: 376 (1837).  
*Pterostylis emarginata* Colenso. *Trans. & Proc. New Zealand Inst.* 15: 328 (1883).  
*Pterostylis speciosa* Colenso. *Trans. & Proc. New Zealand Inst.* 22: 488 (1890).  
*Pterostylis subsimilis* Colenso. *Trans. & Proc. New Zealand Inst.* 28: 611 (1896).
- Pterostylis aff. banksii***: A smaller taxon than true *P. banksii*, common around Wellington, and apparently found elsewhere (see NZNOG Journal 80: 14,19 [2001]).
- Pterostylis brumalis*** L.B.Moore. *New Zealand J. Bot.* 6: 485, f.3 (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 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 foliata*** Hook.f. *Fl. Nov.-Zel.* 1: 249 (1853).  
*Pterostylis vereenae* 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 may be 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* “*Erua*” tagname.
- 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”*.
- 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. New Zealand* 77: 243, plate 29, 2 (1949).  
*Pterostylis* “*linearis*” tagname.
- 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 aff. graminea*.  
*P. “Hackett”* tagname.
- Pterostylis puberula*** Hook.f. *Fl. Nov.-Zel.* 1: 249 (1853).  
*Linguella 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* aff. *nana*.

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

***Pterostylis tasmanica*** D.L.Jones. *Muelleria* 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).

*Plumatichilos tasmanicum* (D.L.Jones) Szlach. *Polish Bot. J.* 46(1): 23 (2001).

***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).

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

*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 confertifolia* Allan. *Trans. & Proc. New Zealand Inst.* 56: 32 (1926).

*Pterostylis trifolia* Colenso. *Trans. & Proc. New Zealand Inst.* 31: 281 (1899).

### **Singularybas Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002). *Corybas* alliance**

***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, 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 Ms. *Corysanthes* "aestivalis" (see Scanlan E. Matthews & son on orchids. NZNOG Historical Series 2006; 14: 12). A white flowered form may also be 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).

The name *Neottia sinensis* was never used for NZ plants. Nor was the name *Spiranthes sinensis* var. *australis* (R.Br.) H.Hara & Kitam. *Acta Phytotox. Geobot.* 36 (1–3): 93 (1985).

***Spiranthes* "Motutangi"**: tagname for endangered Far North taxon similar to *S. australis*.

### ***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* aff. *brevifolia***

A form of *T. pauciflora* s.l. with an orange column similar to that of *T. brevifolia* Jeanes.

***Thelymitra carnea*** R.Br. *Prodr. Fl. Nov. Holland.*: 314 (1810).

*Thelymitra imberbis* Hook.f. *Fl. Nov.-Zel.* 1: 244 (1853).

*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).  
 Was tagname T. “pseudopauciflora” for a time. Debate continues: T colensoi appears to be a much more delicate and slender flower than T. intermedia.
- 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 ‘dentata**: a sterile hybrid of T. longifolia ‘ 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 circumseptata 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, 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 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).  
 T. ixioides is insect pollinated in Australia – the NZ taxon is not.
- 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).
- 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).
- 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 concinna Colenso. Trans. & Proc. New Zealand Inst. 20: 207 (1888) may belong here.

**Thelymitra purpureofusca** Colenso. Trans. & Proc. New Zealand Inst. 17: 249 (1885).

Thelymitra "Whakapapa": undescribed taxon from Ruapehu, that may correspond to *T. purpureofusca*, or may 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"**: a cleistogamous, unnamed taxon from the Far North.

**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]).

**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).

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

**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). Dendrobium alliance**

**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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The NZNOG is making information on NZ orchids available  
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Now available are

**Bruce Irwin's drawings** (one CD),

**NZNOG Historical Series** (Nos. 1-15 on one DVD), and

**The New Zealand orchids** (republishing the 1999 *Nature guide* and the 2005  
*Field guide* on one CD)

Price: \$20 for *Irwin*, \$10 each for *Historical* and *NZ orchids*, from  
Brian Tyler 4 Byrd St Levin  
bandj.tyler@xtra.co.nz.

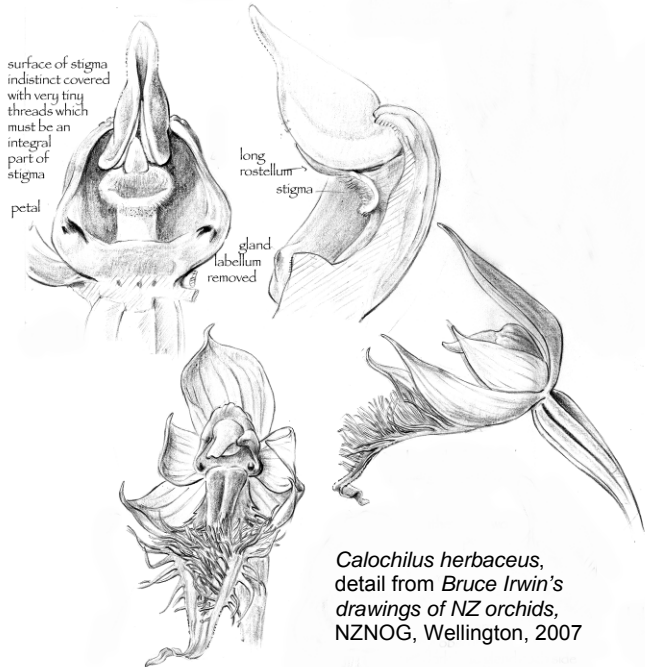
# Various contrivances

The New Zealand terrestrial orchid flora are unique because most can self pollinate: the various contrivances by which the New Zealand orchids are fertilised by themselves are recounted here.

## *Calochilus* in New Zealand

Bower wrote (of Australian plants) [1], "There have been no systematic scientific studies of the pollination of any *Calochilus* species. Current knowledge is based on limited field observations and anatomical studies. In general it is considered that most, if not all, *Calochilus* species are autogamous [2-5]. However, at least some species also attract scoliid wasps of the genus *Campsomeris* by sexual deception [3, 6, 7] allowing some outcrossing to occur. Species which attract *Campsomeris* wasps are therefore facultatively autogamous, self-pollination occurring if pollinia are not removed by the insect vector [3]. *Calochilus* species provide no nectar [3] and have no obvious odour [3, 6].

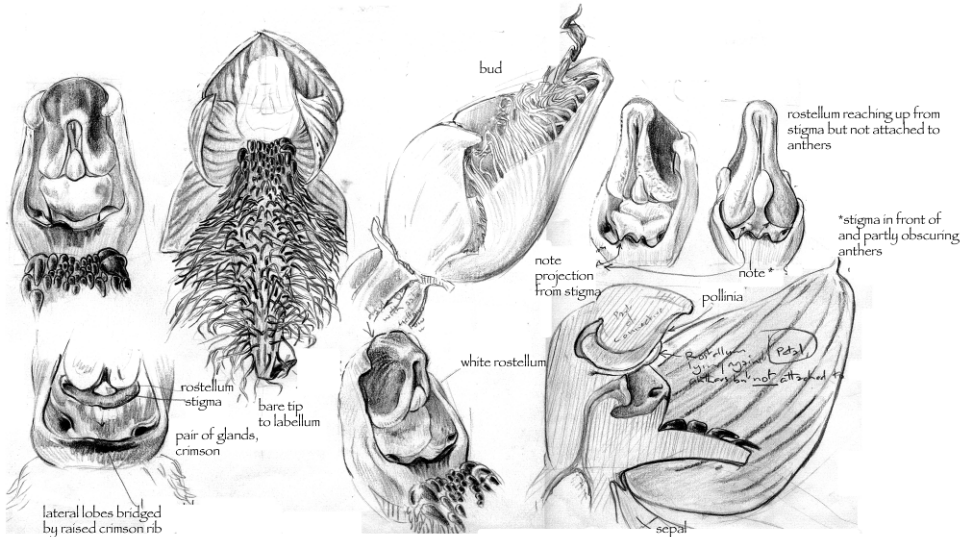
"The column structure of *Calochilus* is adapted for a simple form of autogamy. In all species the anther projects forward above the stigma allowing the pollinia to fall or crumble downwards onto its upper edge. Cady [2] provided details of obligate autogamy in *Calochilus campestris* in populations on the south coast of New South



*Calochilus herbaceus*, detail from Bruce Irwin's drawings of NZ orchids, NZNOG, Wellington, 2007

Wales in which all ovaries developed into seed pods. After anthesis, Cady found it was impossible for an external agent to remove the pollinia. In the late bud stage the rostellum became viscid and sent out root-like growths which adhered to the apices of the pollinia. However, just prior to this the anther cells split and the pollinia began to break up, crumbling onto the upper edge of the stigmatic surface where they germinated. By anthesis the pollinia were attached firmly to both the rostellum and stigma and could not be removed.

"By contrast, Fordham [6] reported that pollinia were readily removed from flowers of *Calochilus campestris* by the wasp *Campsomeris tasmaniensis* on the north coast of New South Wales. Picked bait flowers were visited by four wasps carrying pollinaria on the front of the head, one with two sets. One was



*Calochilus robertsonii*, detail from Bruce Irwin's drawings of NZ orchids, NZNOG, Wellington, 2007

observed to both pollinate a stigma and remove the pollinarium from the same flower." ....

"The limited available observations suggest that each insect pollinated species of *Calochilus* attracts only sexually deceived males of a single specific *Campsomeris* species." In New Zealand we don't have *Campsomeris* (though a similar scoliid wasp (*Radumeris tasmaniensis* [8]) was discovered in the Far North a few years ago).

As a consequence, all three *Calochilus* species found here are obliged to fall back on self pollination mechanisms. No detailed observations have been carried out on NZ *Calochilus* populations, but it is likely self pollination occurs as in Australia. Bruce Irwin's drawings illustrate the structures that facilitate those mechanisms.

In both *Calochilus herbaceus* and *C. robertsonii*, the anther cap is directly above the stigma, which in *C. herbaceus* faces downward, its upper lip curling forward under the prominent rostellum. The mechanism described by Cady seems possible here.

In *C. robertsonii*, however, the stigma is saucer shaped, facing upward, so falling pollen could hardly miss it.

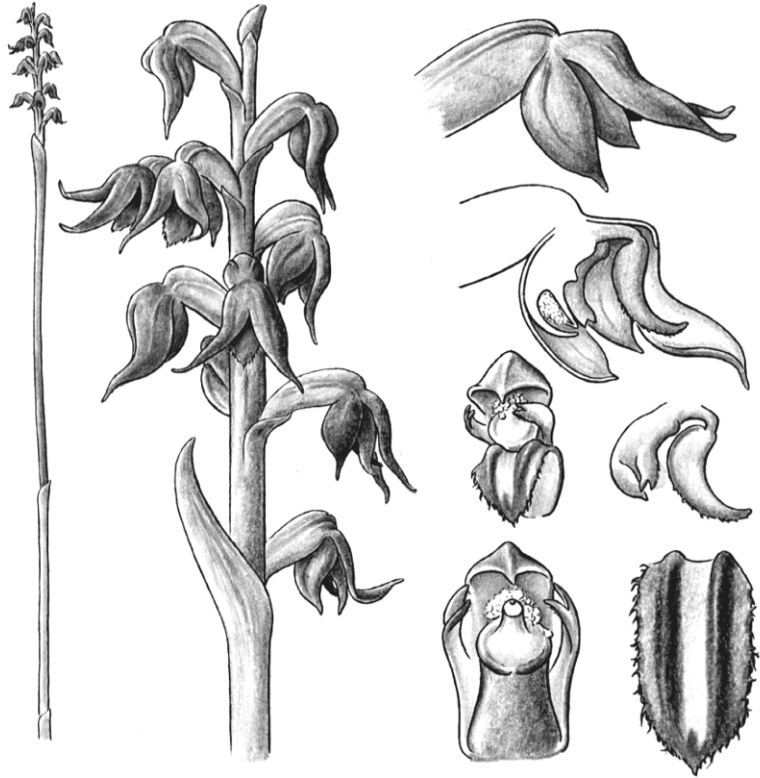
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# Elementary: ED Hatch

## 15. Miscellaneous terrestrials 4.

Drawings by Bruce Irwin and Ian St George



*Corunastylis*  
(the thick, stick-  
like column)

### 11: *Corunastylis nuda* ▲

(naked – the absence of a leaf lamina)

Leaf lamina ± absent, the raceme breaking through near the top of the leaf. Flowers dark red, seldom found open, labellar callus dark red, cleft by a linear, greenish depression.

**Distribution** – Australia – Tasmania, Victoria, New South Wales; New Zealand – North Id., from Auckland southwards: South Id., Sounds/Nelson district: Chatham Is.

**Flowers** – April-June – self pollinated.



### ◀12: *Corunastylis pumila*

(the very small plant)

Leaf lamina extending well into the raceme, but seldom overtopping it. Flowers opening freely, creamy-green with red markings. Labellar calli of several green ridges.

**Distribution** – Australia – Victoria, New South Wales, Queensland; New Zealand – North Id., northern half: South Id., Sounds/Nelson district.

**Flowers** – April-June – self pollinated.



### *Cryptostylis* ▶

(hidden column)

### 13: *Cryptostylis subulata*

(the subulate sepals and petals)

A plant of swamps and bogs, with the habit of *Spiranthes*. The tall flower spike is supported by the surrounding rushes and sedges, and tends to tumble over when growing in the open.

**Distribution** – Australia – Tasmania, South Australia, Victoria, New South Wales, Queensland; New Zealand – North Id., Motutangi/Kaimaumu wetlands and on the Kari Kari peninsula.

# Eponymous orchids: Val Smith

Francis William Bartlett (1896-1979)

*Caladenia bartlettii*

Syn. *Petalochilus bartlettii*

(compiled from Eric Godley's biography in *New Zealand Botanical Society Newsletter No. 40* [June 1995])

Francis William Bartlett was born in 1896 near Silverdale, then called The Wade.

His father, Henry William Bartlett, was a carpenter who had come to New Zealand in 1891 from Kingston-upon-Thames, Surrey, England, and purchased 67 acres of poor clay land, which he called Cromer Farm, on the north bank of the Orewa River. The family of his mother, Caroline Huntingdon Blake, had been in New Zealand since 1861, and established a farm with plantings of trees for shelter and timber, on the south side of the river. This property was left to Caroline and her sister Mary Ann after the deaths of their parents in 1886 and 1892. When Caroline married Henry Bartlett in 1895 she moved across the river to Cromer. From there young Francis walked two miles to attend school at The Wade. One of his teachers was a keen botanist who took the pupils on nature walks.

In 1909 Mary Ann Blake, who was unmarried, sold her half-share of the farm to Henry Bartlett; the Blake land became the Bartlett farm and Cromer was later sold. At the age of 12 Francis was receiving wages from his father for help with building, and he also worked on the farm. He served in the New Zealand Rifle Brigade, mainly in France, in the latter part of World War 1, and when his father died soon after his discharge, inherited a half-share in the farm. In 1892 he married Thelma Meldrum of Orewa, and after the death of his mother in 1927 became the owner of "Bankside", as it had been known for several years.

He was interested in the trees on the property, some dating back to the time of his maternal grandparents; he wrote to foresters and botanists to get them identified, and also did further experimental planting. Correspondence between Frank and Lucy Moore began in 1934, and for the next 32 years he received help and encouragement from her. He was in demand for specimens of little known species, including mosses and ferns, and in 1945 received his first visit from Dan Hatch who needed material of the rarer orchids to complete the studies he had begun in 1941.

During his 18 years' service on the local school committee he fostered an interest in native plants. In 1950 he was co-founder of the Lower Northland Farm Forestry Association, and in 1961 a history of the "Bankside" plantings and their utilisation featured at the New Zealand conference. By then "Bankside" was a show place for New Zealand and overseas foresters, and Frank once remarked that he made more money out of the trees than he did from cows!

In 1949 when Dan Hatch described *Caladenia carnea* var. *bartlettii*, he recognised "the work of Mr Frank W Bartlett, of Silverdale, whose knowledge of the gumlands flora has made his home the mecca of Auckland enthusiasts for many years". Quiet, unassuming and well read, with incredible knowledge of the gumland plants, forest, roadside and gardens, Frank Bartlett died at "Bankside" on 19 May 1979.

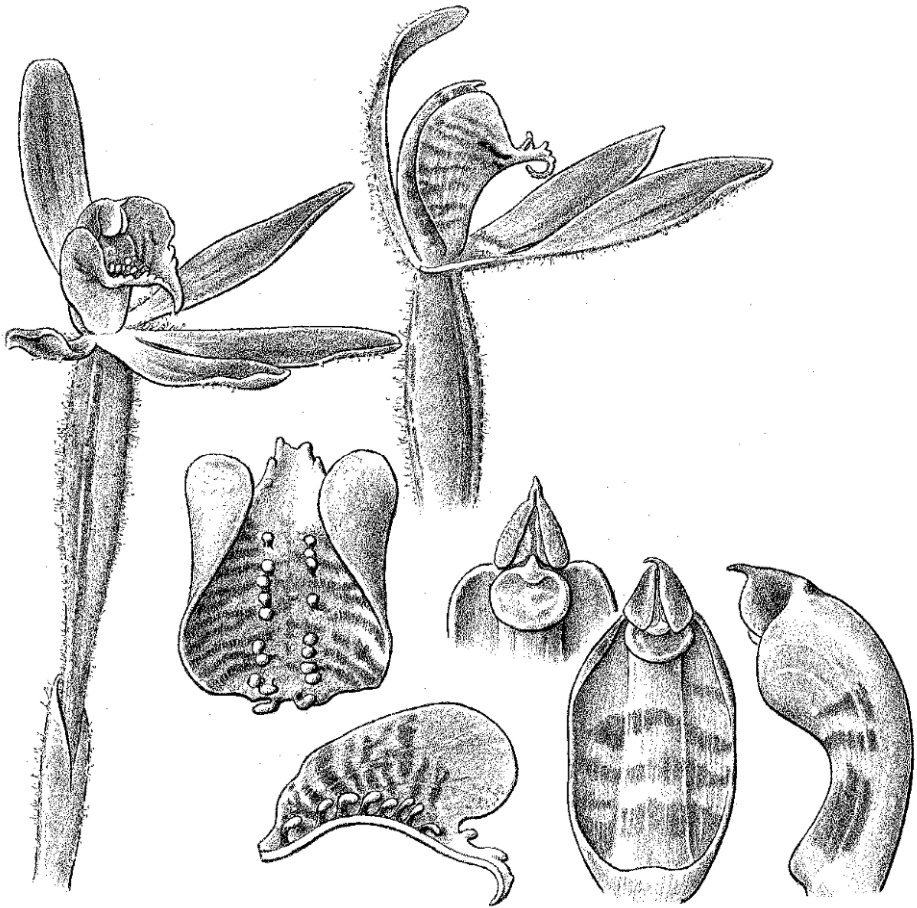


## *Caladenia bartlettii*

*Caladenia*: "beautiful glands"; *Petalochilus*: "petal lip"; *bartlettii*: after FW Bartlett

Drawing by Bruce Irwin.

A terrestrial orchid with a usually solitary flower, its petals and sepals crimson, pink or magenta, fading to white near the centre. The labellum has very deep lateral lobes, its tip and the tops of the calli bright yellow. The column-wings are wide, and the mid-lobe trough-shaped with wavy margins. Flowering September to November, it is mainly a kauri-zone plant, but has also been found in several localities in central New Zealand.



# Notes etc

**Loder Cup nominations:** The Loder Cup is New Zealand's premier conservation award. On Gerald Loder's first visit to New Zealand in 1886 he was introduced to this country's unique and distinctive flora. He was captivated and became an enthusiastic collector. Over a period of time he developed an outstanding selection of New Zealand and Southern Hemisphere plants on his estate in Surrey, England. In 1926 he donated a cup to encourage and honour New Zealanders who work to investigate, promote, retain and cherish New Zealand's indigenous flora. Gerald Loder became Lord Wakehurst in 1934. He remained passionately involved with what he called our "incomparable flora" until his death in 1936. The Loder Cup is entrusted to the Minister of Conservation who appoints the Loder Cup Committee and awards the Cup. The Department of Conservation handles the administration of the award and any other matters, The Cup is awarded annually to the person, group of people, or organisation which has exceeded all other nominees in furthering the aims and objects of the donor of the Cup. Suggestions for consideration by the Committee for the NZ Botanical Society's nomination should be forwarded by 20 April to Anthony Wright, President, New Zealand Botanical Society, c/- Canterbury Museum, Rolleston Avenue, Christchurch 8013.

**Allan Mere Award nominations:** Nominations meeting the following conditions are invited for the award of the Allan Mere for 2008:

1. The Award shall be made annually to a person or persons who have made outstanding contributions to botany in New Zealand, either in a professional or amateur capacity.
2. The Award shall be administered by the New Zealand Botanical Society.

3. Nominations for the Award may be made by regional Botanical Societies, or by individuals, to the Secretary of the New Zealand Botanical Society. Nominations shall close on 30 June each year. Nominations shall be signed by nominator and seconder and accompanied by two copies of supporting information that must not exceed one A4 page.
4. Selection of the successful nominee, nominees shall be made by the Committee of the New Zealand Botanical Society normally within three months of the closing date for nominations.
5. If in the opinion of the Committee, no suitable nomination is received in any particular year, the Committee may refrain from making an award.
6. The Mere shall be formally presented to the recipient on an appropriate occasion by the President of the New Zealand Botanical Society or his/her nominee, but otherwise shall remain in the custody of, and be displayed by, the Herbarium Keeper of the Allan Herbarium (CHR) at Landcare Research, Lincoln, together with the book recording awards.
7. The recipient shall receive an appropriately inscribed certificate.

Nominations should be forwarded by 30 June to Ewen Cameron, Secretary, New Zealand Botanical Society, c/- Canterbury Museum, Rolleston Avenue, Christchurch 8013.

John Early, entomologist at Auckland Museum, wondered about the "**yellow thingies**" on the back of a bumblebee (Fig.6) in a photo sent to him by Jessa Cochrane. She emailed, "... the yellow object is a bit blurry in all the photos. Probably because the bee was shivering (I put him in the fridge for a bit so he didn't fly off while I took photos!). It certainly wasn't the yellow bit moving itself that made it blurry. As you can hopefully see from the photos, the yellow bit is quite symmetrical and almost looks like it has little antennae. It seems to be embedded in the bee's back

between his wings (which he can still open). A gentle poke did not knock it off and it is quite hard (like a succulent sort of). Anyway, it caught my attention! Any ideas? Fungus? Parasite? Thanks for taking a look for me!” John emailed Ewen Cameron, “(They) look like orchid pollinia to me and I’d guess it’s been visiting a large flowered Cymbidium”. *Yes, I think they are orchid pollinia, but not native ones – Ed.*

**O**rchid pollen has been found attached to the back of a bee encased in 15 to 20 million years-old amber from the Dominican Republic. Until now there have been few fossil records of orchid history, and speculation has put the plants’ first appearance at about 45 million years ago. Santiago Ramirez and colleagues at Harvard University have reconstructed an evolutionary tree which suggests the first orchids bloomed about 84 million years ago [*Nature*, vol 448, p 1042]. Those that survived the mass extinction 65 million years ago then rapidly proliferated, leading to today’s 28,000 or so species (Fig.7).

John Ewing, editor of the Western Australian Native Orchid Study and Conservation Group’s *Bulletin* wrote generously, “Let your members know my e-mail address and/or phone number if they are **coming to WA and want a bit of guidance**. We would be more than pleased to help.” John’s email is [jre@hale.wa.edu.au](mailto:jre@hale.wa.edu.au), and the address: WANOSCG, PO Box 323, Victoria Park 6979, WA.

Looking through old orchid diaries is always interesting. My **earliest record of *Nematoceras longipetalum* flowering** is 16 July from near Taihape, and my latest 2 October from Glenross, Hawkes Bay. Season, altitude and latitude all have their effects, but ten weeks is a long flowering period for one species. Is it a single species?”

The sexually deceptive orchids *Chiloglottis trapeziformis* Fitzg. and

*Chiloglottis valida* D.L. Jones are pollinated in Australia by the thynnine wasps *Neozeleboria cryptoides* (Smith) and *Neozeleboria monticola* Turner, respectively, during attempted mating with the flower labellum. The orchids and their pollinators occur mostly in allopatry; however on the overlapping edges of their ranges they can attract each other’s pollinator, leading to rare hybrids. Using gas chromatographic analyses with electroantennographic detection (GC-EAD) the authors\* demonstrated that 2-ethyl-5-propyl-1,3-cyclohexandione (“**Chiloglottone**”), the previously known sex pheromone of *N. cryptoides* and pollinator-attractant of *C. trapeziformis*, is also used by *C. valida* to attract its pollinator *N. monticola*. In behavioural field experiments, equal numbers of males of both species responded to, and attempted copulation with, a dummy scented with synthetic Chiloglottone. In dual choice experiments where dummies were presented at different heights, *N. cryptoides* males preferentially attempted copulation with dummies a few centimetres above the ground, while *N. monticola* males significantly more often landed on the soil and attempted copulation with dummies on the soil. These behavioural differences corresponded with differences in floral height in the orchids, *C. trapeziformis* being about twice as tall as *C. valida*. The authors suggest that this contrasting pollinator behaviour imposes selection for floral height in the orchids. (\*FP Schiestl, Peakall R. Two orchids attract different pollinators with the same floral odour compound: ecological and evolutionary implications *Functional Ecology* 2005 19, 674–680: <http://www.blackwell-synergy.com/doi/pdf/10.1111/j.1365-2435.2005.01010.x>, accessed 13 Aug 2007).

I think the purveyors of most so-called “natural” remedies are exploitative and cynical, **but is this even legal?** An outfit calling itself “First Light Combination Essences” (<http://www.nzfloweressences.co.nz/combination.html>) is advertising “**Life management essences - Pure and natural N.Z. native flower essence combinations for well-being, focus, emotional support and**

stress relief” at a mere \$NZ19.50 per 10ml. “Specially formulated for 21st century living, Blended from **native flowers collected from N.Z.’s pristine landscape**, Dosage: 2 drops directly under tongue or in water 3 times a day”.

Examples include (my emphases)...

Confidence Support - *Self-Empowerment*.

Helps restore self-confidence, self-assurance and self-esteem. Projecting oneself positively. For new or unfamiliar situations. For all situations; work, school, public speaking, interviews. Contains: Pohutukawa, Native Flax, Cook Strait Groundsel, Karamu, Rangiora, Tawa, **Sun Orchid**

Feminine Support - *Embracing the Feminine*.

For the changes associated with childbirth, pregnancy, birth, menopause, marriage, menarche, motherhood, parenthood, hormonal shifts, mood swings. Contains: Shining Spleenwort, Tree Fuchsia, Mt Cook Lily, Golden Corokia, Whau, **Spring Orchid**, Makamaka

Life Changes Support - *Life in Transition*.

Smooth transitions. Letting go and moving on. Emotional connection. Welcoming in, embracing, bonding with the new. For all new beginnings. For life, family, relationship, schooling, career, health changes. Moving house, birth, separation, divorce. Contains: Kowhai, Bracken Fern, Golden Tainui, Golden Corokia, Wheki Ponga, **Spring Orchid**, **Maikaika Orchid**

Sensual Support - *Love and Intimacy*.

Emotional and physical intimacy. Enjoyment of passion, sensual fulfilment. Supports ease of emotional expression. Embracing relationship. Comfortable with one’s appearance and body image. Healthy acceptance of sexuality/sensuality. Contains: Tree Fuchsia, Mahoe, Makamaka, **Elf’s Hood Orchid**, Tarata, Mangrove, Southern Lady Fern

Travel Support - *Refresh and Revive*.

Beneficial for the distress associated with all types of travel. Helps restore equilibrium. Refreshing, re-energising, re-integrating. Especially suitable for those

who experience difficulty with the specific discombobulating effects of air travel.

Contains: Bracken Fern, Shining Spleenwort, Kowhai, Kakabeak, Silver Pine, Kawaka, **Tree of Life Orchid**, **Spring Orchid**

Weight Loss Support - *Natural Weight Management*. Enhances willpower.

Supports positive behavioural changes.

Useful for strengthening resolve. For moving beyond old emotionally based eating patterns, cravings or imbalances.

Contains: Whau, Akeake, Hen & Chicken’s Fern, Bracken Fern, Rangiora, Makamaka, Tree Nettle, **Slender Sun Orchid**

White Light Support - *Energetic Protection*.

Creates safe sacred space. Use to shine your light or project a light shield. Helps clear spaces of discord or tension. For negative mental, emotional, psychic atmospheres or energies. Contains: Clematis, Akeake, Fragrant Fern, Kawakawa, Red Matipo, **Tree of Life Orchid**, **Sun Orchid**, **Spring Orchid**.

**A** **Greek tragedy**—the following email conversation took place on a native orchid chatroom in August...

1. I am an English Orchideer and photographer and will be visiting the Peloponnese next April. Because it is a family holiday, I will have to concentrate on the best sites, and will only have a few days to look for orchids. Can anyone on group please advise the best time to go (the weather needs to be fine too, as my wife does not like the rain or cold!) and some of the best areas? I have done a trawl of the web but there is very little to go on at this stage.

2. Peloponnese is a wonderful place to search orchids. I visited the peninsula 12-19 April 2004 but you will find lot of orchids during the whole of April. My visit was concentrated to the southern part of Peloponnese since we where staying at Kardamyli, a small town southeast of Kalamata. In the end of our week we had been able to identify 44 species. If you are going to the southern part of the peninsula

10



11



Fig.10: *Nematoceras* "whiskers" by Jeremy Rolfe.  
 Fig.11: *Gastrodia theana*, recently discovered in Vietnam.

Fig.12: *Nematoceras* aff. *sulcatum* from the Chathams, by Peter Heenan.

12



13



Fig.13: Blowup of *Caladenia minor* from its type sheet (p43).  
 Fig.14-17: Photographs by Kevin Matthews (p41).

14



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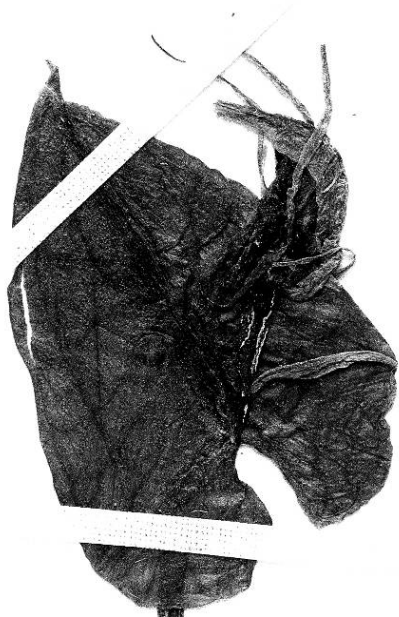
17



please mail me of this list and I can send you some details from our excursions.

3. I don't think that there is reason to come to Pelleponisos any more. The whole area is burned down. Unfortunately the man destroys the nature every day, without thinking the future? Tassos.

There's a fascinating paper in the September 07 *Orchadian* [Mills K. An overlooked specimen of *Nematoceras* (*Corybas*) from Norfolk Island. *The Orchadian* 2007; 15 (9): 3891-393]. Kevin Mills, an ecologist and botanist, was studying the flora of Norfolk Island and came across a herbarium specimen of a *Nematoceras*. Nowadays the island has ten orchids, only three of them terrestrial. Mills found a letter from Kirk to von Mueller: "... amongst some scraps of Norfolk Island plants collected by Miss Gertude Purchas is a solitary specimen of *Corysanthes rivularis* (*sic*)..." He discovered the specimen was in the Kirk Herbarium at Te Papa, its caudae broken off, but its leaf clearly that of *Nematoceras acuminatum* (below), or something very like it.



Oops! The "pollen granules" of *Ichthyostomum pygmaeum* on page 11 of J105 were of course **seeds**, as David McConachie kindly pointed out. Colenso observed the same thing, and wrote [*Trans* 1894; 26: 319] "capsules... broadly gaping, and each bearing its minute withered flower.... The microscopic seeds were also plentifully shed, scattered like dust over the neighbouring plants."

Jeremy Rolfe sent shots of *Nematoceras* "Rimutaka" midseptember (Fig.9); note the apicular dorsal, and the long oval labellar opening. He also took the photographs of *N. trilobum* agg. (Fig. 8), and of *N. "whiskers"* (Fig.10) near Wellington in October. But is it as hairy as *N. aff. sulcatum* (Fig. 12)?

Colin Woolcock's watercolours of Australian orchids can be seen at <http://www.anbg.gov.au/images/illustrations/Woolcock/illustrations.html>.

Peter de Lange emailed (25 Sep 07), "Just got back from field work on the Chathams. Thought you may be interested in this brief orchid report. Nice to finally see *Nematoceras* aff. *sulcatum* in flower (Fig.12)—from the Tuku-a-Tamatea Nature Reserve, Southern Tablelands, Rekohu [Chatham Islands] taken by Peter B. Heenan on 13 September 2007—abundant on Chatham and Pitt - this is the "generally" big-leaved tetraploid previously placed in the *N. trilobum* agg. It differs by its tetraploid number [though this is shared with similar plants in Otago and Campbell Island], and deeply sulcate labellum which looks like [a natal cleft and anus]. Beyond size - which may be environmental, I can see few differences between this entity and the recently named *N. sulcatum* of Macquarie island), and a surprise find was *Anzybas rotundifolius* - growing under bracken on the banks of the Makara River, Chatham Island. We found a few patches of *Singularybas* aff. *oblongus* - a possible Chatham endemic (it is very small - though I

## The Swiss Orchid Foundation at the Herbarium Jany Renz

To celebrate the 100<sup>th</sup> birthday of the famous orchidologist Jany Renz and the seven year activity of the Swiss Orchid Foundation at the Herbarium Jany Renz, it's time to inform the public about the state of affairs at the Foundation.

After the death of Jany Renz in 1999 and his last will to lend his herbarium and his library to the University of Basel, the Swiss Orchid Foundation at the Herbarium Jany Renz was founded in 2001. The aims of the Foundation are to maintain and curate the legacy of Jany Renz and to make his collection available to a worldwide audience. After the registration and digitalisation of all herbarium specimens, books and separates, about 20,000 herbarium specimens of the Renz collection are online at [www.orchid.unibas.ch](http://www.orchid.unibas.ch).

For systematic-taxonomic research, herbariums are important sources for revisions, monographs and latterly DNA-analyses to perform phylogenetic analyses. Herbarium specimens are often the last evidence of long destroyed vegetation. Furthermore the herbarium specimens of Jany Renz are of excellent aesthetics and quality. Over a hundred of them are type specimens of his new classifications.

The section on modern reference literature is complete and therefore a very valuable base for orchid research. The collection consisting of roughly 5,000 scientific articles about orchids comes from different sources and represents an outstandingly rich and complete collection of orchid literature. Both collections are integrated in the index of the Basel University Library <http://aleph.unibas.ch>

After having registered Jany Renz's scientific cultural heritage the Foundation decided to make the whole collection available virtually and worldwide. Along with informative articles about the Foundation and Dr Jany Renz, the website of the Foundation offers access to the 26,000 herbarium specimens from all over the world and makes also the collections of Renz, of the Botanic Institute at the Basel University, of the Botanic Association Basel and the historic orchid collection of Bernoulli and Cario available. With about 5,000 hand coloured drawings from Renz' library still to be digitalised and other graphic material provided by authors from all over the world, the Swiss Orchid Foundation hopes to present a **World Orchid Iconography** being as complete as possible.

In order to register new records including easy georeferencing, a stable and flexible system based on the internet programming language PHP and the database MySQL was designed in 2005. The **World Orchid Iconography** is maintained and continuously updated by civilian workers under the direction of Dr. h.c. Samuel Sprunger.

Currently the website of the Swiss Orchid Foundation at the Herbarium Jany Renz contains about 36,000 pictures with updated nomenclature from all over the world. All orchids from Europe, Asia Minor and Northern Africa are virtually available either as herbarium specimens, hand-coloured drawings or photographs. This picture library is an important instrument for scientists, nonprofessionals, enthusiasts and cultivators worldwide in order to get access to visual and nomenclature information on orchids.

Furthermore all visitors to the website of the Foundation have free access to the **BibliOrchidea**, a comprehensive database with 140,000 records and thus 80% of the worldwide available orchid literature. This database is maintained and continuously updated by the famous orchidologist Dr Rudolph Jenny. The publishing scientist as well as the interested hobby orchidologist will find publications not only by title, author and publishing year but also by a differentiated subject catalogue and first determinations using a taxon-declaration. The results of the search are additionally documented with pictures from the database of the Swiss Orchid Foundation.





confess I have seen similar plants in peat bogs in the Waikato).”  
*Earina autumnalis* from Herb Jany Renz

Scientists have discovered 11 new species of animals and plants in a remote area in central Vietnam. The Green Corridor has been identified as one of the highest conservation priorities in Vietnam. It is one of the last remaining lowland wet evergreen forests, and supports populations of threatened species. Five new species of orchids were described, with another four awaiting description. One is *Gastrodia theana* (Fig.11) – the species name is in honor of the discoverer, a young Vietnamese botanist called Pham Van The. Flowers are bell-shaped, hardly open, fleshy, slightly flattened from ventral side; sepals and petals roughly varicose outside (irregular warty dorsal ridge-like keel rising toward plant apex); petals salmon-pink, thin, fleshy, very small, sometimes hardly visible, which

are shorter than the sepals; lip is green with salmon-red apex and base; flower March through April; this rare, strictly endemic plant is a typical element of the aboriginal warm-loving lowland flora of central part of

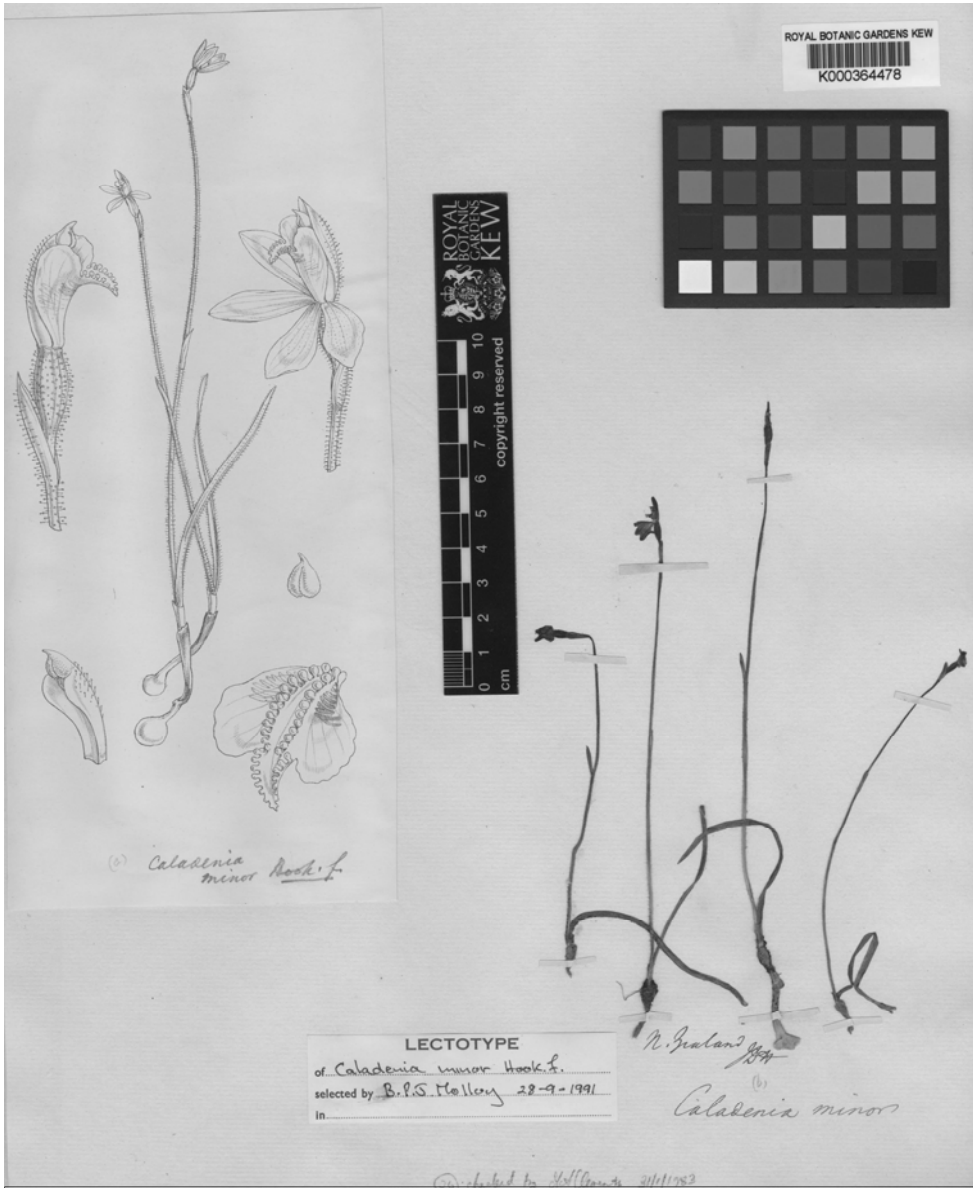
**Lines from *The Passing of the Forest:*  
*A Lament for the Children of Tané***

Gone are the flowers. The kowhai like ripe corn,  
 The frail convolvulus, a day-dream white,  
 The dim-hued passion-flower for shadows born,  
 The fragrant orchid pallid in green night,  
 The blood-red rata strangling trees forlorn  
 Or with exultant crimson fiery-bright  
 Painting the sombre gorges, and that fay  
 The starry clematis are all away!

From *The Long White Cloud* by WP Reeves, 1934

Kevin Matthews wrote, “On 24 Oct I popped out to Lake Ohia with Bill Campbell (a keen botanist and a new member with the NZNOG, and I admit passing on to him “the orchid bug” which has no known cure!) to follow up on the new season’s orchid progression. It turned out to be well worth the effort. We found a single wee *Petalochilus bartlettii* on display along with a handful of *Thelymitra aemula*. There had been a good display of *T. malvina* the previous week but most were now past their best with only the odd unopened flower about. We also turned up several not quite open white blue striped *T. pulchella*, a stunted white form of *T. pulchella* with green column; this one needs a revisit in a few days so I can hopefully get a photo of an open flower. Further on, on an isolated kauri stump island in the bog we found a 4 petal mutant *Thelymitra* (Fig.14). The plant is approx 800mm with 16 flowers, 14 of which have developing or developed ovaries; I’m not sure what’s going on here because the top 2 flowers have incomplete fertile bits as you can see. A neighboring plant may well be the same but it had finished flowering so it will be most interesting to follow up next season.

“We also found a few *T.* “ahipara/darkie” and what I believe are “ahipara” x “darkie”. The habitat is short manuka and rush and



**The type sheet for *Caladenia minor* Hook. f.,**  
reproduced by permission of the Board of Trustees of the Royal Botanic Gardens, Kew.

quite dry under foot but would have been winter wet. The previous week I had photographed *T.* "ahipara" and seen *T.* "darkie" growing only metres apart at

Kaimaumu; the plant habitat was similar to Ohia. Perhaps this *Thelymitra* sp. are one and the same?

“Further we noticed *Cryptostylis subulata* spreading itself eastwards at Lake Ohia with a few flowers on display.

“Also managed to photograph an undescribed diving spider which was an added bonus for the day... plus some rarer wetland species.

“Popped up to a favorite orchid haunt at the back of Pukepoto west of Kaitaia yesterday and found an unusual *T. aff. longifolia* with deep purple/black post anther: 2 plants only; very similar to Eric’s tagged *T. tholinigra* which he has recorded at Te Paki and Manukau with a total of 5 or 6 plants seen.” Kevin emailed a few days later about greenbacked column *Thelymitra*, and his photographs demonstrate to doubters just how close *T. colensoi* (aka *T. intermedia*) (Fig.15) and *T. sanscilia* (Fig.16,17) really are.

I have recently seen the typesheet for *Caladenia minor* Hook.f. carrying a print of Fitch’s drawing of it (reproduced in monochrome opposite: I acknowledge the Board of Trustees of RBG Kew for permission). I have zoomed and cropped the photograph to show the open flower in true colour in Fig.13. The 150-year old dried specimen miraculously retains some of the pink Hooker described in his protologue, and shows the horizontal aspect of its lateral sepals and petals—features typical of *Caladenia* aff. *chlorostyla*, *C. bartlettii* and *C. aff. pusilla*. *C. minor* has been identified with *C. chlorostyla*, but that is true only of *C. chlorostyla sensu lato*, which includes the taxon Bruce Irwin split off, and we recognise as *Caladenia* aff. *chlorostyla*.

Georgina Upson emailed (31 October), “This is to let you know that I have found *Pterostylis puberula* in North West Nelson again after many years absence. DOC has been notified of the find. Mark Moorhouse and I went back several days later and managed to find around 120 plants with approximately 40% flowering after searching for around two hours. These plants had almost completed flowering at the end of October. Here they are to be found tucked under the

outer edges of short scrub (up to 600cm) on the edges of bare areas.” An excited Mark Moorhouse added, “Georgina Upson has discovered *Pterostylis puberula* alive and well in Golden Bay after what we ascertain is at least a 25yr gap since the last report (my last sighting) from Kakariki Creek in the Nelson region. That site was utterly modified by pine plantations and rapidly became quite unsuited to the orchids’ needs over 20 years ago. There are at least three colonies and a rough head count of about 120 plants, forty of more of which were flowering or in green capsule stage. But this was over a relatively small area of DOC land, so even with such encouraging numbers of seeding plants, it remains precariously endangered, as a small change in the growth of covering scrub or a fire could easily cause its extinction. *P. puberula* appears to associate with dry clayey soils and short manuka, likes plenty of light, and apparently the seed strikes on small moss tufts fairly readily when conditions are right. DOC officers here have been notified and it appears that they had had a botanist searching for it for some time without success. So that’s a feather in our Group’s cap. Well done Georgina!”

Andrew Townsend emailed, “... the **A**rchid from the Coromandel is definitely a *Dendrobium/Thelychiton* (depending upon whose taxonomy you follow) of some sort – it looks very similar to seedlings of Australian species I have grown. The few small pseudobulbs, which get progressively larger as the plant advances in age, and development of several leaves at about the third year are typical. The photographed plants look to me to be about 4 years old (if they were in cultivation), but in the wild, they may be quite a lot older than that... The plant looks typical to me of a common Australian natural hybrid (*D. x delicatum* = *D. speciosum* x *D. kingianum*), although flowering material will assist in clinching it, especially if it is a hybrid that doesn’t naturally occur in the wild! The question now is are they a natural vagrant, adventive or were they planted there?”



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# Australian notes: David McConachie

## *Pterostylis aenigma*

by Mike Duncan

From ANOS (Vic) Bulletin 39 (11), June 2007

Many orchid species flower profusely after a bushfire, but wildfires are not always good for orchids. The Great Alpine Fire of 2003 burned for 59 days and devastated 1.2 million hectares of bushland, including the only known site of *Pterostylis aenigma* in the Omeo hills. Before the fire, the orchid occurred in a broad, flat, seasonal creekline. At the last survey before the fire, 80 individual plants were recorded when they flowered in December.

The wildfire that swept through the area in January 2003 was a very hot burn that decimated all the undergrowth and turned the soil into a very fine, powdery dust. In March 2003, a very severe thunderstorm occurred, dumping 80mm of rain in less than an hour. The powdery soil was washed down the hillside and deposited a mass of sediment up to one metre deep in the creekline. While in the vicinity of the *P. aenigma* colony, the sediment was about 20cm deep. (The creek has since cut itself a new path.)

So what happened to the *P. aenigma* colony? Surprisingly, many rosettes appeared in November 2003, and 50 flowering plants were recorded in December. However, in 2004, only ten plants appeared and no plants were seen in 2005 or 2006.

Why did this rapid decline occur? Well, in the tons of sediment that rolled onto the site were thousands of seeds of both indigenous and weed species. This led to vigorous, thick regrowth along the creekline, which is probably smothering the *P. aenigma* plants. Weed species such as blackberries and English broom have been particularly problematic. Intensive, fine-scale weed management is ongoing at this site to try and give *P. aenigma* a chance to flower again.

## Orchid research since 1978 in South Australia: a numerical study

by R. Bates

From *Nossa Journal* October 2007.

In the 1978 *South Australian Flora* edited by J. Jessop, the Orchidaceae were written by J. Weber and R. Bates and illustrated by L. Dutkiewicz. Weber was a keen lumpner of species (1) and consequently there were only 110 species listed by Weber and Bates. There were such unlikely combinations as *Caladenia huegelii* var *reticulata* and *Thelymitra carnea* var *rubra*. Weber had actually planned more of these 'lumpings' hoping to reduce the number of South Australian orchids to one hundred but was talked out of it by his junior partner.

By the time of the 1986 *Flora of South Australia* most of the lumping had been undone and the number of species rose to more than 130.

In 1990 Bates and Weber in *Orchids of South Australia (the Pink Book)* treated several undescribed orchids and took the number of species to more than 150. The illustrations in the pink book were done by amateur artist Erika Stonor and were therefore much improved on those of 1986.

In the 1993 census of South Australian plants Bates and Weber accepted 175 species and included such unlikely combinations as *Burnettia nigricans* for what had been *Lyperanthus* and is now *Pyrorchis!*

Bates in the 2005 census of South Australian Plants has 225 species of orchid including a few undescribed ones.

Since then twenty additional South Australian orchid species have been named by DL Jones and an additional fifty undescribed species have been recognised so that the latest CD of South Australian orchids put out by

NOSSA in July 2007 has over 300 species.

1: footnote; a *lumper* is a taxonomist who reduces the number of species and a *splitter* is one who increases the number of species. Using this definition the author would have been denounced as a *lumper* in 1985 and as a *splitter* in 2005; however my concept of species has never changed so the fact that the number of orchid species in SA has risen from 110 to 310 is a result of research both in the field and in the laboratory, thereby taking us closer to the truth and that is what Science is all about!

## A new discovery of the rare sun-orchid, *Thelymitra matthewsii* on Kangaroo Island

by D.A. (Andy) Young

From *Nossa Journal* October 2007.

I have great pleasure in announcing to N.O.S.S.A members the discovery of the rare and enigmatic orchid, *Thelymitra matthewsii* or the spiral sun-orchid. More excitingly, perhaps, is the fact that the find is of what would appear to be a stable colony. The find was made by Kangaroo Island botanist Bev Overton and Trish Mooney, the Bush management adviser for the K.I. Department of Environment and Heritage. The location is being kept secret, to aid in the preservation of the colony, however it can be revealed that it lies within a conservation area on the north coast of the Island and the plants are growing along a cleared path within an area of Eucalyptus shrubland, on a lateritic soil.

Having previously been shown Trish's photo of the two plants in bud that Bev and her had initially noted, on Tuesday the fourth of September this year, I accompanied Trish and Dave Taylor, Threatened Species Officer for the K.I. Department of Environment and Heritage, along with Sarah Jones of DEH, to do a quick survey of this site for further plants. I was of the opinion that having two plants

growing adjacent to each other of this rare species was exceptional. On arrival at the site I was hoping that a wallaby or goat hadn't decided to have a quick bite at our expense and have made the journey out to the location a waste of time. Sure enough, the plants were still present, though one had suffered a chewed bud. This allowed a peek at the beautiful mid purple colour exposed at the base of the chewed dorsal sepal. While photographs of the budding plants were being taken, Dave noted a small spiral leaf just adjacent to the plants we were looking at. Before long all members of the party were searching along either side of the path and over the next forty minutes twenty-two plants were found. Four plants, including the original two, were in bud. All of these plants were growing along a stretch of track about 30-40 meters long, within a shallow depression at the top of a hill. The specific bush block had not been burnt for some time, however it may be significant that a section of bush close to the site had burnt recently and the area would have been subjected to quite a considerable amount of smoke during this event. The burn area was uphill from the area, so water that would have gathered in the hollow would have been tainted by burn products. While paths in the general area were quickly surveyed, the soil type and character of the area where the plants were located was found to be quite distinctive and no further plants were observed.

As it has been noted, to avoid any interference of this exceptional site, the number of people "in the know" is being kept to a minimum. There has been a consensus that some D.N.A leaf clips will be taken from the flowering plants once seed has been successfully set, but that photographs should be sufficient to confirm the presence of this distinctive species, and therefore a voucher specimen is not necessary in this case. The possibility of attempting to actively restrict access to the site and of promoting further expansion of the colony is being explored.

How exciting!!!

# The Column: Eric Scanlen

## 1. *Nematoceras* “Motutangi”

Who has heard of *Nematoceras* “Motutangi”? You haven’t? Never mind, not many have. The Column indexed it then forgot about it, when Bruce Irwin coined the tag-name in Journal 83:19, June 2002. Bruce of course had inside information, having drawn it in 1988 and 1989 as you can see in his book [1] of magnificent orchid drawings. Doug McCrae had found it at Motutangi, north of Kaitaia and had it flowering in his shade house near Peria, in September 1988. So Bruce pickled some flowers for drawing back at home. His 1989 drawing is more vibrant and looks as though it was taken from live specimens.

Harking back 109 years to 10 Oct 1898, it seems from his letters, that RH Matthews (RHM) sent TF Cheeseman this orchid from Kaitaia, where he found it whilst looking for *Anzybas rotundifolius* [1]. Cheeseman identified it, following T Kirk’s error, [Nsltr 17:3], as *Corysanthes rotundifolius* thus lumping it with what is now *Nematoceras rivulare*. It flowers in late Oct/Nov, not Sept. Compare Bruce’s drawing with **Fig. 18**, *N. rivulare*, with its extended labellum tube. Clearly related aren’t they? but differing both in structure and flowering time. The Column was puzzled by RHM’s Sept flowering orchid when compiling ref. 1 and used RHM’s list of 27 Dec. 1898 to tag it in absentia as *Nematoceras* “Sep”. But it has to be Bruce’s *N. “Motutangi”*, doesn’t it? What else?

It seemed to be commoner than *N. rivulare* in 1898, because RHM referred to it as “the rotundifolius” in his letters. Wayne Cribb and the Column hunted for it in 2005, up RHM’s Okahu Creek (now Tarawhaturoa Stream) but found only *N. rivulare* [J98:38]. Kevin Matthews sought it at Motutangi in early Sept

2007 but found that previously good orchid country there had been drained and developed into good farm land; anathema to orchids. The Column, en route to Kaitaia, sought *N.*

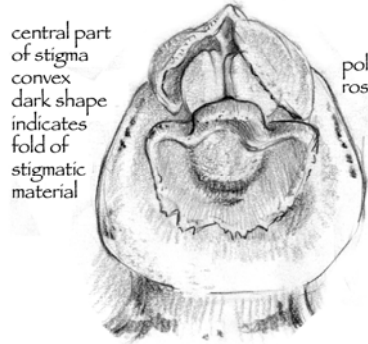
“Motutangi” on the banks of the Mangamuka Stream on 11 Sept but kept finding only mats of tedious *N. rivulare* with early buds like specks, plus a huge clump of *Earina mucronata* in mature flower; so early! The Kevin/Column duo hunted for *N. “Motutangi”* up RHM’s Okahu Steam where they had no trouble finding an old, very dead pig, but no *N. “Motutangi”*. They tried a likely stream at Pukepoto and another at Tauroa on the south end of Ninety Mile Beach but the dripping stream banks, beloved of *N. rivulare* agg, were not in evidence in the lower reaches. All that turned up at Tauroa, was a healthy colony of *Pterostylis agathicola* with no present-day kauri within coo-ee. Their emerald green looked like *P. graminea* but the short leaves, right twisted labellum and inflated base to the galeas could only be *P. agathicola*.

Elva Shine had months earlier discovered violet-like leaves on the shore of Lake Waikaramu at Kaimaumu but on 13 Sept, the level was too high for the duo, flooding back into the rapidly spreading *Acacia longifolia* and of course, covering sign of any *N. “Motutangi”*. However, a bug eaten, unstriped blue *Thelymitra* “sansfimbria” was trying to open on a dryish track NW of the gorse-covered landing strip, along with three lonely and pale pink *Caladenia alata*. Nearer the beach, *Cryptostylis subulata* was in evidence along a flooded DoC vehicle track. At least one robust plant was in full flower — in September?! Kevin was jubilant; this reinforced his claim that odd plants flower all year round in the winterless(?) north, not just in November.



*Nematoceras aff. iridescens*

Corybas "A" ex Motutangi cultivated by Doug McCrae 4 Sept 1989



central part of stigma convex dark shape indicates fold of stigmatic material

pollinia shows through rostellum

pollinia and rostellum intact

dorsal sepal and most of labellum removed to show column and entrance to it from above

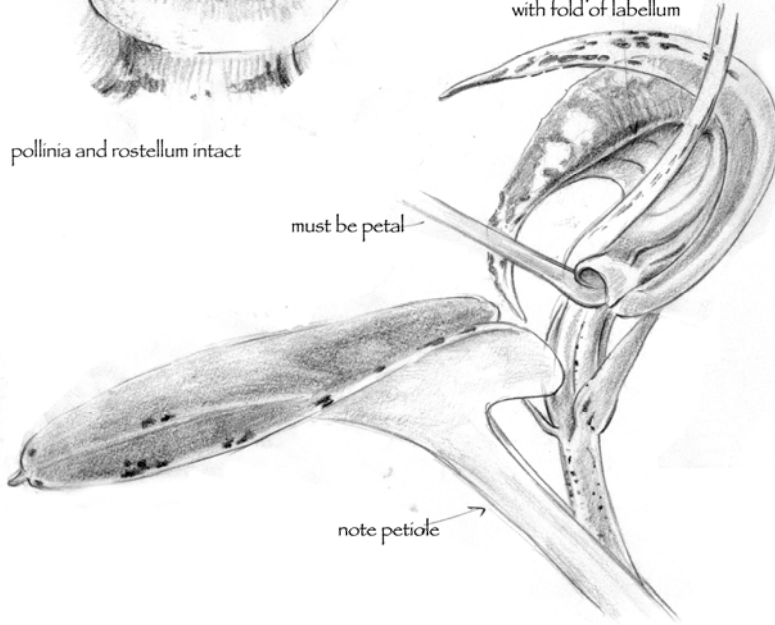


labellum cut just outside midline to show small ledge. in this case barely projecting into entrance of column

one side of labellum removed - cut almost through centreline.

clear stripe coincides with fold of labellum

must be petal



note petiole

ledge in this flower barely projecting back to constrict throat.

***Nematoceras* "Motutangi"**  
from Bruce Irwin's 1989 drawing.

*Nematoceras* “Motutangi” now seems to be either rare or extinct! In the hope that it is only rare, it is herein publicised so that anyone near a dripping, moss covered stream bank in the Kaitaia region will know what to look for, early in any September.

#### References

1. Tyler, B. St George, I.M. *Bruce Irwin's drawings of New Zealand orchids*, NZNOG 2007
2. Scanlen, E.A. Matthews and Son on orchids, *NZNOG Historical Series* 14, 2006.

## 2. *Orthoceras*: coat of many colours from Diggers' Valley

Gary Little & Asta Wistrand (see p.17) have a Forest Homestay at Diggers Valley just south of Kaitaia, and they organise fitness programmes in their piece of bush. Just incidentally, they have the most remarkable collection of unheard of horned orchid (*Orthoceras*) colour forms. Other native orchids are there including a September flowering *Singularybas oblongus* with a palest green dorsal sepal but normal coloured labellum. More about that another time. Gary has captured a range of *Orthoceras* with his camera. Are they *O. novae-zeelandiae* or *O. strictum* or both including hybrids?

To help answer these questions, we once called all our NZ horned orchids *Orthoceras strictum* until 1989 when Australian taxonomists David Jones and Mark Clements wrote that NZ didn't have *O. strictum* and that ours should rightly be called *O. novae zeelandiae*, borrowing from A. Richard who named NZ's species, *Diuris novae-zeelandiae*

in 1832. Since then we have found that Australia and NZ both have both forms with

**A.** rounded labella and short floral bracts, taken to be *O. novae-zeelandiae*,

**B.** acuminate labella, long floral bracts and earlier flowering, taken to be *O. strictum* plus combinations of these characters in different colour forms. All are happy under the common name, horned orchid which the taxonomists have no mandate to change.

Dan Hatch classified the green one as *O. strictum* R. Br. forma *viride* Hatch, in 1946 but it has not been widely accepted on the premise that it is only a colour aberration lacking anthocyanin. The Column has pix of a khaki aberration (**Fig. 19**) from Tapuwae near Benneydale but Gary has aberrations in yellow, green, wine, purple and mixed colours with the combo of characters depicted as in the illustrations. What do you think?

#### Inside Back Cover

**Fig.18:** *Nematoceras rivulare* Mangamuka Gorge, 28 Oct 2004

**Fig.19:** Horned orchid from Tapuwae roadside, 21 Jan 95, acute labellum, medium length floral bract; hybrid?

**Fig.20:** Horned orchid, Diggers Vly, 9 Dec. 06, medium floral bract, rounded labellum green form. Photo G. Little.

**Fig.21:** Horned orchid, Diggers Vly, 24 Dec. 06, short floral bract but acute labellum, yellowish green. G. Little.

#### Outside Back Cover (by Gary Little)

**Fig.22:** Horned orchid, Diggers Vly, 24 Dec. 06, medium bract, acute labellum, well known purple form.

**Fig.23:** Horned orchid, Diggers Vly, 24 Dec. 06, short floral bract, acute labellum, wine coloured but look at the drooping, crazy long pedicel on the next bud up the peduncle.

**Fig.24:** Horned orchid, Diggers Vly, 16 Feb. 06 long floral bract, acuminate labellum, purple form, very late *O. strictum*?

**Fig.25:** Horned orchid, Diggers Vly, 24 Dec. 06, long floral bract, acuminate labellum, late yellow form of *O. strictum*?



IB

