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## From the Chairman David McConachie

### Taranaki Orchid Society Summer Show 13–14 January 2018

There was a special theme of “Native Orchids” at this year’s Show. Local club and NZNOG members and other visitors provided slabs and pots of *Dendrobium cunninghamii*, *Earina* and *Drymoanthus* for a large display. There were also many photographs in a Photographic Display focussing on the Iwitahi Reserve and the orchids growing there. John Dodunski took a group to his place to have a look around and then to a local reserve. On Sunday morning Bill Liddy gave a presentation on the past, present and future of Iwitahi, looking at the current work being supported by the Orchid Council of New Zealand. We also took copies of the *Pocket Guide* to the show and virtually sold out the 1<sup>st</sup> Edition. I would like to thank everyone that assisted with the weekend.

### Hatch Medal

At this year’s AGM we will present the tenth, and final, of the Hatch Medals struck in memory of ED “Dan” Hatch to “recognise someone who has made an outstanding contribution to New Zealand Orchidology, as outlined in the Group’s Aims”. Therefore, the Group needs to give some thought to how to

proceed. The first option would be to discontinue the award; this is not an option I favour but it needs to be considered. Another option would be to get another set of, say 10, Hatch Medals struck. The final option to consider is retiring the Hatch Medal, replacing it with a new Medal to be called the Bruce Irwin Medal. I have seen a possible design for the Medal featuring a flower of *Pterostylis irwinii*. The criteria would be as for the Hatch Medal, with the proviso that past recipients of the Hatch Medal would be ineligible. I look forward to hearing members’ opinions about this and I hope to come to the AGM with costed options for the consideration of the meeting.



### 2018 AGM

At Picton last year it was proposed that the AGM be held in Wellington— either the weekend of 17–18 or 24–25 November with the option of extending for additional field trips on the following Monday. We might arrange a visit to see behind the scenes at Te Papa as well as possibly Eastbourne or Palliser Bay. Another highlight will be recognition of the 150<sup>th</sup> issue of the Journal this year.

# The inbox

Observations, opinions, illustrations, arguments are always welcome....

## **Caladenia “Bacon Creek”**

Mark Moorhouse emailed, “ Georgina Upson and myself led a party of 22 Nelson Bot Soc members onto Georgina’s Clarke Stream property on 19 Nov 2017. We were fortunate to catch this specimen freshly opened with another flower a day or two off. The plant was a robust specimen standing close to 25cm tall with the flower the usual width, ie., about halfway between the standard size of a *C. chlorostyla* 'red stem' and the larger *C. lyallii*. Habitat open maturing kanuka forest. This specimen about 2m from one we observed for several years but had not seen flowering for 3 yrs. There is convincing evidence from other years observations that this taxon is fertile and reproduces its own kind. It is notable that the dorsal apex is not like either of the putative 'parents' which have been 'responsible' for these plants. Perhaps also worth noting, maybe irrelevantly, is that the rock strata of this area are particularly mixed and some of them the most ancient travertines on record for NZ—perhaps a unique environment as it supports 55 spp of orchids on property under 100 ha. We added *Theymitra nervosa* to this list on Sunday.”

*Caladenia* “Bacon Creek”: image by Don Pittham ►



Jan Kelly emailed (9 December 2017), “I found these classic bugs on a *Prasophyllum colensoi* on Lindis Pass last week, looking so much like something a child might draw”. ▼



Gordon Sylvester emailed (31 December), “The trip this year was to Lake Taylor, Lake Sumner Forest Park ED 52.04. On our first evening we searched along the 4WD track. The only orchids spotted were *Corybas*, *Microtis*, and *Pterostylis*.”

*Corybas* were moderately common. Very few seed pods seen (6) in total; leaf shape indicated *C. macranthus*, *trilobus* agg and mauve spotted margins and central lines; no flowers were observed.

A little further on *M. oligantha* was seen on a dry bank at head height. Seedpods forming. Juneville *Pterostylis* were seen in a damp area with a seed pod forming. As it was getting late the decision was made to abandon the search due to low light levels. So carried onto Lake Sumner and Loch Katrine. Returning next morning we were frustrated by 4WD vehicles wanting to drive past us.

Returning later in the evening we relocated the *Pterostylis*, a little further on up the hill a fresh seed pod was noted just below it were two dried plants. The specimens noted had leaves resembling the *alobula/trullifolia* group. The flower is too big. Later a fresh flower was spotted and resembled *Pt. areolata*. The flower is about half the size of *P. areolata*. ▼▼▼





John Barraclough posted some images at <http://naturewatch.org.nz/observations/1034170> of aphids on *Gastrodia* seed heads (Lake Hawea). ▲ ►

Murray Dawson emailed, “The aphids have distinctive markings on their backs and may be of interest”.

Pat Enright followed up with green aphids near Featherston. ►►

Gary Backhouse has for sale two new e-books on Australian orchids—<https://bushorchids.weebly.com/ebook-details-and-purchasing.html>.

The Western Australian Regional Orchid Organisation was successful in its bid to stage the 24th World Orchid Conference in Perth, Western Australia in September 2023.



## *The New Zealand Native Orchid Journal*

The main aim of the New Zealand Native Orchid Group is to improve knowledge about native orchids, so we allow others to copy material published here, provided the source and author are acknowledged. Authors should note this as a condition of acceptance of their work.

The editor and other members of the Group may not share authors' views.

Chair: David McConachie, 42 Titiro Moana Rd, Korokoro, Lower Hutt, [pleione@orcon.net.nz](mailto:pleione@orcon.net.nz).

Secretary: Pam Shearer, 7 Ring Terrace, St Marys Bay, Auckland. [pam@insidetrack.co.nz](mailto:pam@insidetrack.co.nz).

Treasurer: Judith Tyler, 4 Byrd St, Levin, [bandj.tyler@xtra.co.nz](mailto:bandj.tyler@xtra.co.nz).

[Subscription NZ\$15 email, \$30 post, \$45 overseas].

Books and publications: Brian Tyler, 4 Byrd St, Levin, [bandj.tyler@xtra.co.nz](mailto:bandj.tyler@xtra.co.nz).

Webmaster: Michael Pratt, [www.nativeorchids.co.nz](http://www.nativeorchids.co.nz), [Michael@nativeorchids.co.nz](mailto:Michael@nativeorchids.co.nz).

[The website posts journals six months after original publication].

Editor: Ian St George, 32 Hawkestone St, Thorndon, Wellington 6011 [istge@yahoo.co.nz](mailto:istge@yahoo.co.nz).

[The *Journal* is published quarterly from February, and deadline for copy is the first of the month beforehand. Please send copy by email, or typed on paper].

## In reply to “Getting the facts right—not *Caladenia minor* again!”

by Georgina Upson

The taxonomically tumultuous time began well before 1998. During the 1980s Clements examined many collections of possible *C. minor* from various herbaria. In Kew there are 9 collections attributed to *C. minor*, one identified by both Clements and Molloy as *Caladenia lyalli*. He checked J.D. Hooker's sheet containing Fitch's illustration in 1983. It was not until 1987 that he examined other sheets and there is no indication that he reviewed the first. A perusal of the sheets shows that he had a broad concept of *C. minor* not always shared by Molloy who examined them in 1991.\*

However in 1989 he published: *Caladenia minor* JD Hook, *Fl.nov.zel.* 1.247,t,56b (1853) Type N.Z. Northern Island dry clay hills Edgerly s.n. (lectotype specimen (a) K! Here designated". He included *Caladenia variegata*, *Petalochilus calyciformis*, *Petalochilus saccatus* and others within his *C. minor* concept.

There appears to be a problem with this designation. Each specimen at Kew has a collector and either the collector's specimen number or s.n. (sans no.). No specimen under *C. minor* attributes Edgerley as col-

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\* The specimen sheets can be selected and viewed by googling “RBG Kew Herbarium”, entering “*Caladenia minor*” and clicking on the little camera icons—*Ed*.

lector nor are there any *Caladenia* species in his collections. Three specimens have s.n. as collector number, two of which Kew records as type sheets. K000364478, collector J.D. Hooker s.n. has a pencilled specimen (b) possibly added by Molloy to indicate *Caladenia alata* in 1991. Clements selected no type specimens from this sheet but Molloy at a later date felt it to be the lectotype for *C. minor*. K000079098 W. Colenso s.n. contains specimens of *C. variegata* sent by him which Clements determined on inspection in 1987 were the Type for *C. minor* but later abandoned. There is no designated specimen (a). The third is a collection by Sinclair of a much larger species. K000079096 W. Colenso 409 is specimen (a) on a sheet containing 22 specimens. Clements noted at the time; Lectotype, this is the only specimen from this collection that matches the species illustrated by Hooker. *C. minor* Hook JD (a). There are possibly three names mentioned on sheet K000859096, the sheet containing the above specimen, including Edgerley. When more than one collection is placed on the same sheet at Kew the collector normally has their name and details written below or sometimes beside their specimens. There are no specimens identifiably belonging to Edgerley.

It appears there is no match correlating to Clements's stated designation. Perhaps this was realised and along with Molloy's differing opinions it was decided that... The taxonomy of N.Z. *Caladenia* was in a state of confusion and N.Z. taxa required revision. A plethora of species was described, reinstated or species rank lifted throughout the 90s. They published three new species, *C. chlorostyla*, *C. nothofageti* and *C. at-radenia* in 1997. This might explain the total lack of reference to *C. minor* or any Kew specimens and the rather odd species comparisons. All types were selected from N.Z. material. The specimen photographed from a Kew type sheet, of *C. chlorostyla*, by Eric Scanlen has been identified from the Cheeseman specimens (in the inset) of *C. minor* and one might contemplate why it was not considered for a type specimen. Hooker considered all specimens on all sheets as *C. minor*. Today they are considered to be from several species therefore his description and drawings take on extra significance. The detailed sketches

came from a specimen taken out of spirits the rest modelled on Hooker's own specimens, note floral positions.

Between Hooker's commentary and Fitch's illustration much can be gleaned. The Fitch illustration confirms and adds to the key points raised by G. Jane.

- 1) erect labellum position
- 2) short "fat" densely pilose ovary
- 3) Apically rounded labellum sidelobes
- 4) disc calli short and globose,
- 5) midlobe calli short, somewhat globose,
- 6) Labellum wider than long, ie a short midlobe

Of pink taxa in New Zealand *Caladenia alata* and "nitidosa rosea" have acute tepals. *C. variegata* is a taller more robust species with larger flowers. Apically, tepals tend to be "pinched" rather than apiculate, acute or obtuse. Labellum midlobes usually lack calli tending more toward crenulate. This leaves *Caladenia bartlettii* or the putative *Caladenia pusilla* as possible *C. minor*. *C. bartlettii* is poorly described, any morphological differences between it and "putative pusilla" are yet to be defined, if any.

The writer has long believed that the "putative pusilla" J147 pg5 was that meant by J.D. Hooker as *C. minor*. To add to "putative pusilla",

- Flowers smaller than *C. chlorostyla* with yellow calli and midlobe tips.
- The labellum can be either white or pink.
- The lateral sepals often appear basally fused
- Lateral tepals are usually held in a rigid planar fashion.
- Plants agree in all other respects to Hookers description and Fitch's illustration
- They are an early flowering Sp. Oct-early Nov in the South Island finishing as *C. chlorostylus* begins to flower. Sparse and localised but widely distributed across the northern South Island. They grow on poor soils with high light levels as individuals or extremely loose colonies at up to 450m altitude.

## The Type of *Caladenia minor*—again

By Graeme Jane and Ian St George

When Hooker described *Caladenia minor* the International rules for defining the types did not exist and sometimes authors did not clearly identify a type specimen. Sometimes the issue is easily resolved by a single signed specimen but sometimes it becomes quite messy.

The type of *Caladenia minor* Hook f. 1853 has been selected twice from the material available at Kew. Clements (1989) lists the first typification along with an extensive list of synonymy based on his examination of the specimens in September 1987. The second was by Molloy in 1991 but remains unpublished.

The type description Hooker (1853) is quite brief but supplemented with an illustration. Although Hooker describes and cross compares two other *Caladenia* (*C. lyallii* and *C. bifolia*), *C. minor* is not compared with any other species. Hooker attributes the collection to “Edgerley etc”.

The situation is complicated by the type sheets containing many specimens of *Caladenia alata* yet the accompanying lithograph is clearly not that species. Also, *Caladenia alata* had already been described from Tasmania by Robert Brown in 1810.

### The specimens

The relevant collections at Kew include 4 sheets:

(i) A sheet prepared by Hooker, containing the Fitch lithograph and 3 specimens marked by Molloy as the Lectotype (type not identified in the original description) of *C. minor*. The sheet is undated and the collector not identified. It was possibly prepared by Hooker at some date later than 1853 as a definitive example of the type. He has signed the second specimen – which has a flower that resembles the sketched full flower – with "JDH N. Zealand".

(ii) 2298/3: A sheet of several specimens annotated as "409 *Caladenia* New Zealand ED -W Colenso Edgerly" by JD Hooker. Most specimens are *C. alata* but also includes other currently recognised species. One specimen has been selected as an Isolectotype (part of the original collection) by Clements and several others as isolectotypes by Molloy.

(iii) 2298/1: Clearly from at least 2 collectors one labelled 1945 Colenso from Castle Point, 1848 is selected as a syntype/paralectotype by both Clements and Molloy.

(iv) 2298/2: A sheet of very mixed labelling but probably prepared after 1885 with three collectors Sinclair, Colenso and Ralph acknowledged. One specimen is annotated by Clements as the type of *C. minor* and noted (Clements 1989) as the type of *C. minor*. Molloy has annotated it as an isolectotype of *C. variegata* as labelled by Colenso.

The last two sheets appear to have been composed of several collections. The second sheet 2298/3 satisfies two criteria. It appears to be one collection and the collector is named at least in part – Edgerley as acknowledged in the type description.

### The collector

Although the first sheet (i) is signed JDH, Hooker makes no specific mention in his diary (St George 2018) of collecting *Caladenia* while in Bay of Islands between August and November 1841. Also Hooker being new to New Zealand would have been under the guidance of Colenso for the identity of species while in Bay of Islands.

Edgerley was in the Hokianga between 1835 and 1841 but prior to Hooker's arrival. ED (Ernst Dieffenbach) apparently acted as a courier for some specimens. Colenso became resident in the Hawkes Bay in 1845 so made no further collections in Northland.

Colenso first made contact with Sir William Hooker in February 1840 with a small collection. The only collection over the period 1841 to 1844 was dispatched in 1844, probably timed to arrive after Hooker arrived back in that year.



That included "409 an Orchis" for which Hooker has noted collectors as "E D ( Ernst Dieffenbach) W Colenso Edgerley" but Colenso elsewhere notes the collection as "Temateatai, Wangaruru Bay; Octobr. 1841". This was from a trip between 17 September and 12th October, while Hooker was in the Bay of Islands. So it is possible that Hooker viewed the specimens in New Zealand while they were relatively fresh.

Hence the collector was probably Colenso and the type locality Whangaruru.

### The taxa

The mix of taxa on the herbarium sheets means Hooker did not distinguish *C. minor* from *C. alata* (perhaps *C. chlorostyla*, and *C. bartlettii* were also included, though there is no evidence for that). Nor did Colenso because his collections included both *C. alata* and *C. minor*. Colenso had a keen eye for differences but did not distinguish *C. variegata* till 1885, stating then that it differed considerably from *C. minor* of the North. It was not till much later around 1900 at Matthews's insistence that *C. alata* (then *C. minor* var *exigua*) was separated (Cheeseman 1905).

The relative abundances of all these taxa may have been quite different in 1840–1844 but the four collections indicate that *Caladenia minor* was even then much less common.

### Conclusions

The type collection is mounted on sheet

2298/3 and the "type sheet" (i) has been compiled from the same set.

The collector was probably Colenso (noting his annoyance in not getting the attribution).

The type locality is high open grounds near Temateatai, Wangaruru Bay; October 1841. This was while Hooker was in the Bay of Islands but before Colenso departed for the Hawkes Bay on 19 November so Hooker could have seen the original plants.

Thus both Clements and Molloy have selected a specimen on that sheet as the isolectotype.

Perhaps the attribution in the type description to Edgerley was to acknowledge his original identification of the species?

### References

- Brown R 1810: *Prodrum. Florae Novae Hollandiae et Insulae Van-Diemen* 2. p 180.  
Clements MA 1989: Catalogue of Australian Orchidaceae, *Australian Orchid Research* 1: 1-160.  
Cheeseman TF, 1906: *Manual of the New Zealand Flora*. Govt Printer.  
Hooker JD 1853: *Botany of the Antarctic Voyage on Erebus & Terror; II. Flora Novae Zealandiae* Pt 1:247.  
St George IM, 2018: Hooker in the Bay of Islands. Supplement to *eColenso*, March.

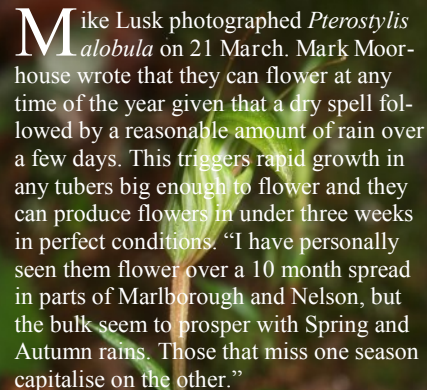
*For a different idea of the identity of Caladenia minor and related matters see "The Column" in this issue—Ed.*

## Digitising Te Papa's collections faster

The Accelerated Collections Digitisation Programme (ACDP) was launched in August last year as a way of creating greater online public access to Te Papa's vast and significant collection.

"Alongside photographing the collection items in high-resolution we are also clearing rights and adding contextual information to the records like names, locations, and subjects to make the items more discoverable online."

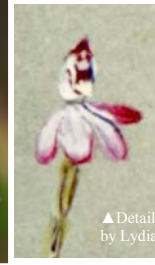
Carlos Lehnebach reports that nearly all the orchid specimen sheets have been photographed and will soon be available online.



Mike Lusk photographed *Pterostylis malobula* on 21 March. Mark Moorhouse wrote that they can flower at any time of the year given that a dry spell followed by a reasonable amount of rain over a few days. This triggers rapid growth in any tubers big enough to flower and they can produce flowers in under three weeks in perfect conditions. "I have personally seen them flower over a 10 month spread in parts of Marlborough and Nelson, but the bulk seem to prosper with Spring and Autumn rains. Those that miss one season capitalise on the other."



Are *Caladenia bartlettii* and our *C. pusilla* (= *C. minor*?) really the same plant? My concept is that each is a hairy pink flowered plant, the pink on the rounded tepals fading to white proximally, with a yellow labellar midlobe and yellow-topped calli in 2 rows. I think of *C. bartlettii* as larger but finer, its yellow midlobe more oblong than the triangular shape of that of *C. pusilla*. But what do others think?—*Ed.*



▲Detail from watercolour by Lydia Blumhardt



▲Photograph by Roger Thwaites

**Research news:** just published in the *NZ Journal of Botany*...

**Phylogenetic affinities and in vitro seed germination of the threatened New Zealand orchid *Spiranthes novae-zelandiae*.**

Jonathan Frericksa , Andrew Munkacsi b , Peter Ritchie b , Yi-Bo Luo c and Carlos A. Lehnebach a

a Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand; b School of Biological Sciences, Victoria University of Wellington, Wellington, New Zealand; c Chinese Academy of Sciences, Institute of Botany, Beijing, People's Republic of China.

**ABSTRACT** The New Zealand “ladies’ tresses” *Spiranthes novae-zelandiae* is a terrestrial orchid currently classified as Threatened – Nationally Vulnerable. Although considered endemic to New Zealand, morphological similarity with the widespread Eurasian *Spiranthes sinensis* has cast doubt on its taxonomic and biogeographic status. Habitat destruction is the main threat to the survival of *S. novae-zelandiae*. Unfortunately, lack of information regarding its symbiotic fungal associates and technical expertise within New Zealand with symbiotic seed germination techniques have hindered its propagation from seed. In this study we examined the phylogenetic affinities of *S. novae-zelandiae* using nuclear (internal transcribed spacer) and chloroplast (trnL, trnS-G and matK) DNA sequences. We also explored the diversity of fungal symbionts associated with *S. novae-zelandiae* and identified the fungal symbiont that promotes seed germination and seedling development using DNA

sequences and in vitro seed germination experiments. Bayesian Inference analyses showed that *S. novae-zelandiae* is nested within *S. sinensis* along with *Spiranthes australis* and *Spiranthes* aff. *novae-zelandiae* (CHR 518297; Motutangi), a morphological variant of uncertain taxonomic status from northern New Zealand. These results support earlier suggestions that a broader concept of *S. sinensis* is needed to include *S. novae-zelandiae* and many other taxa segregated from *S. sinensis*. Nine fungal Operational Taxonomic Units were isolated from the roots of *S. novae-zelandiae* but only one promoted seed germination and seedling development. DNA sequence analyses confirmed that this isolate was a strain of *Tulasnella* (anamorph: *Epulorhiza*); a widespread mycorrhizal fungus previously found in *S. australis* and *S. sinensis*. Lastly, we describe the germination process and the steps we followed to obtain flowering plants after 2 years of seed inoculation.

**A new study states**, "... we provide evidence that moa and prehistoric kakapo consumed ectomycorrhizal fungi, suggesting these birds played a role in dispersing fungi that are key to NZ's natural forest ecosystems." Link: <http://www.pnas.org/content/early/2018/02/06/1712337115>



21<sup>st</sup> Australian Orchid Council Conference & Show 18–22 July 2018. <http://aocc2018.orchidsocietynsw.com.au>

# The type locality Ian St George

## *Pterostylis porrecta* at the Hackett (& Elsthorpe)

At Labour weekend in 1984 Ross Nightingale was visiting school friends (his father had been the teacher at Elsthorpe school) in southeastern Hawke's Bay, and decided to take a look at the Elsthorpe Reserve. He saw some *Pterostylis* in bud and thought they "didn't look right" so went back the following weekend with David McConachie. The flowers were now open and David "had never seen anything like them" either, so took a specimen to Dorothy Cooper who thought they must be a deformed *P. graminea* and suggested they go back the following year.

They did go back and found the plant just as strange, so in 1986 David photographed it and sent specimens to Brian Molloy who remarked that they were the same as a new species he had found at Hackett Creek Scenic Reserve, Nelson in December 1985.

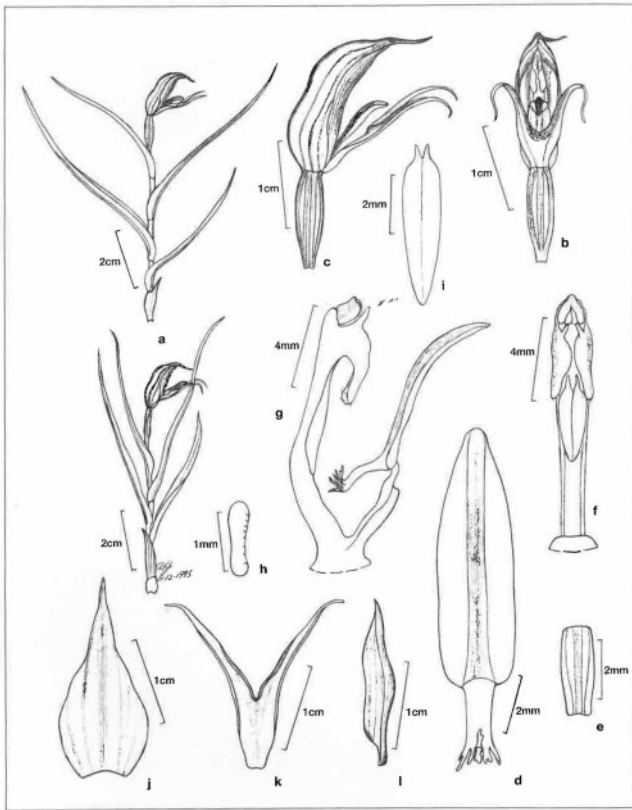
David sent specimens to Bruce Irwin in 1990 and Bruce drew them: the drawings were published as "*Pterostylis* aff. *graminea*" in our *Field Guide* in 1996.

In 1997 David Jones, Brian Molloy and Mark Clements described six new New Zealand pterostylises, including this as *Pterostylis porrecta* [*Orchadian* 12(6): 272 (1997)]. The editor got a little mixed up and printed the wrong illustration, but published the right drawings in the following issue (see next page).

Had it been seen in the past? Probably. A specimen (Colenso's No. 2348) at Te Papa, collected by William Colenso in November 1848 between Castle Point and Cape Palliser (not far from Elsthorpe and close to recent finds) and named in manuscript "*Pterostylis intermedia*", looks rather like it (or it could be *P. irwinii*?). He sent a specimen to Kew (see next page) but the Hookers ignored it. When Cheeseman was annotating Herb. Colenso he identified the ones Colenso kept as *P. banksii*. This is smaller though—intermediate, one might have thought in those days, between the known *P. banksii* and *P. graminea*.



Colenso's *Pterostylis* "intermedia" at Te Papa.



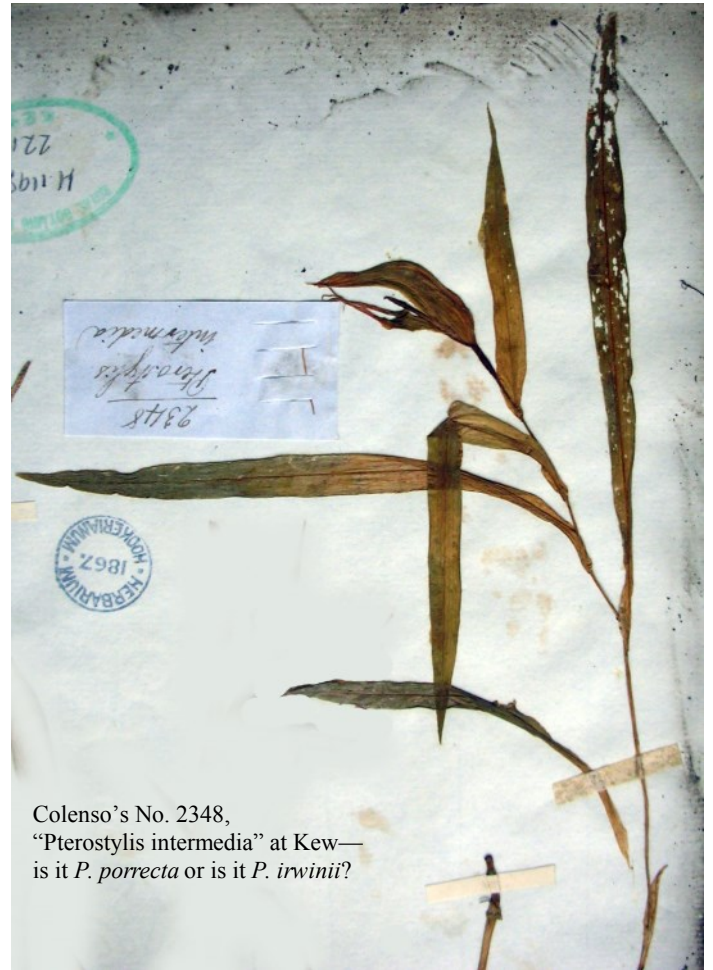
***Pterostylis porrecta*, Elsethorpe, Hawkes Bay - New Zealand.**

(B.P.J. Molloy) Fig. 5.

[REFER PAGES 272,273 & 279 of *The Orchadian*, December 1997 (Vol.12, No. 6)]

- a. plants; b. flower from front; c. flower from side; d. labellum from above, flattened out;  
 e. labellum hinge; f. column from front; g. column and labellum from side; h. pollinium;  
 i. stigma; j. dorsal sepal, flattened out; k. lateral sepals, interior view; l. petal.

Drawing 6/12/1995 by D.L. Jones.©



Colenso's No. 2348,  
 "Pterostylis intermedia" at Kew—  
 is it *P. porrecta* or is it *P. irwinii*?

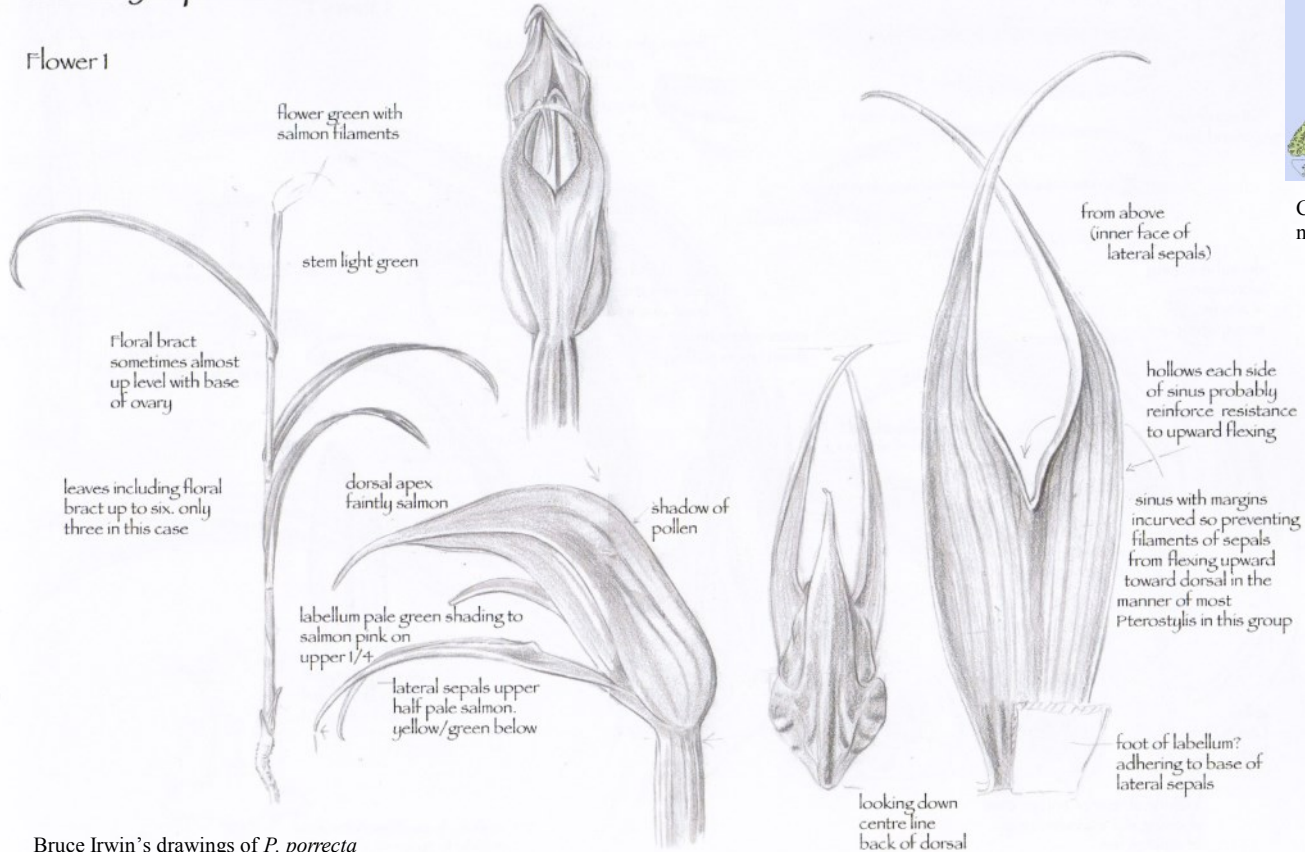
# Pterostylis porrecta

Pterostylis sp.nov. from Elsthorpe sent by David McConachie Nov 1990  
Drawn 21 Nov 1990



Currently recognised distribution

## Flower 1



Bruce Irwin's drawings of *P. porrecta*



*Pterostylis porrecta* at its type locality, Hacketts Creek Reserve. Photographed by Mark Moorhouse



## Orchids in 3D

Eric Scanlen

# Editorial Ian St George

## Wild orchids in the Wakatip\*

Two colour forms of *Gastrodia cunninghamii* grow in the beech forests near Kinloch at the head of Lake Wakatipu. One is almost black, the other yellow-fawn, the tubular part of the flowers pale green. There are intermediate coloured plants in various shades of grey-green. I could find no differences structurally, but on the day I examined them (18 December 2017) the fawn-green one smelled strongly of stale urine and the black one didn't. In full flower the scape is almost oval with flowers held out horizontally, but becomes more linear as the stems turn upward in fruit.

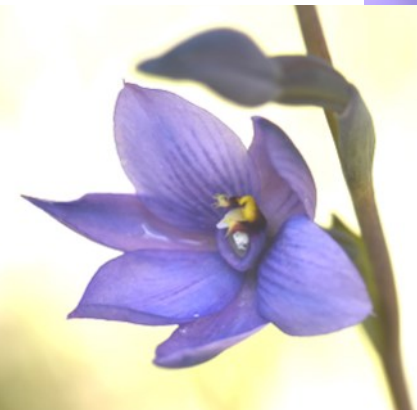
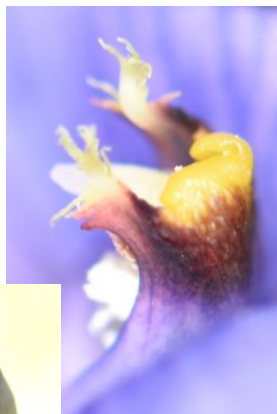


\* Ngai Tahu sometimes drop the last syllable from te reo place names, as do other iwi: hence Te Whiti = “Te Wit”; Waiuku = “Waiuk”; Wairapa has been written as “Waiderop”; and Wakatipu = “Wakatip”. The usage is not just lazy pakeha slang.



2 A strange *Corybas macranthus* grows in deep shade at the entrance to a gold sluicing tail race near Sam Summers's hut up the Twelve Mile Creek on the Queenstown-Glenorchy road. It flowered middecember 2017, when most orchids were a month early. The leafstems have elongated to as much as 15cm as they reach for better light. Curiously, though – and less understandably in terms of survival – the dorsal sepal is also straight & elongated. Has this been observed elsewhere? ▶

3 The thelymitra that school inspector Donald Petrie sent school inspector William Colenso from Southland and Colenso described as *T. fimbriata* in 1888 has been included in *T. pulchella* which is regarded as a variable amphidiploid. Colenso described a column that was “truncate, with small toothed wings shorter than stamino-



dia; staminodia largely fimbriate; fimbriæ spreading, irregular, flat, flexuous, sometimes forked at their extreme tips”. That fits a plant at trackside in the Twelve Mile.



4 This December there was a considerable flowering of *Prasophyllum colensoi*, by far the most common orchid in the tussock grassland up the Twelve Mile Creek and around Lake Onslow near Roxburgh (you couldn't walk without treading on them). Mostly they were the slender form with separated lateral sepals. Stem colour ranged black to yellow green, with everything between. ▶▶▶



5 I was surprised at the scarcity of *Microtis* down here this year. Come to think of it I have never seen in Central Otago the robust November flowering northern plant that is *Microtis unifolia* s.s. and the only plants I did see this December were of the more delicate and later flowering sp. with a rather plainly oblong labellum and less turned-up dorsal: "*M.* 'B'" (or is it *M. longifolia* Col.?). ▶

6 I think there are five forms of *Thelymitra longifolia* s.l. around Queenstown. (a) There is the tiny, almost nongreen, beech forest plant with wiry 2mm U-section leaves, unnamed. It may just be a small form of (b) *T. purpureofusca*, which looks the same and shares the same habitat but has green as well as brown-purple plants (photo at far right ▶▶). (c) A third is a green, one or two flowered beech forest 15cm plant with an 8mm arched U-section leaf.

(d) The fourth is a 5-10cm grassland plant with purple stems and tepal backs and a U-section leaf (photos next page). All of these have a notched column midlobe. (e) The fifth is the more robust *T. longifolia* s.s., not very common down here, with its entire midlobe and wide, ribbonlike, 3-ribbed prostrate leaf.





7 At Manapouri (just over the swingbridge at the start of the Kepler)  
I found *Pterostylis australis* s.s. The leaves were big: some 25 x  
3cm. Half the flowers had the unzipped trident deformity. ▼



# The Column Eric Scanlen

## 1. *Journal* 147 proof-read,\* benefits and errors

The Column's *Journal* 147 arrived by snail-mail on 10 December.

**On the benefit side**, *Caladenia pusilla* at Picton, on p. 4, by the editor, was an eye opener and it looks just like the 2006 Jeanes & Backhouse, Langwarrin "A" specimen, provided it is single flowered. N.B. all ID photos of *Caladenia* need also to show ovary, some stem and the number of flowers per stem clearly.

Also Graeme Jane's colour copy of Fitch's *Caladenia minor* drawing is a first for the *Journal*. However, Fitch showed far too many disc calli so one has to suspect he was working imaginatively from a mutilated, pressed and brown specimen. So the stem, ovary and tepal colours can be seriously doubted too, I hope.†

Then Graham Randle's back cover *Pterostylis* "coiler" looks like a new taxon for us to catch up on provided Graham approves the tag name for indexing and identification purposes.

**On the error side**, in the Column's opinion,

- 1, front cover, has to be *Chiloglottis* "khaki calli". This colour form is the norm at Diggers Valley, but is rare elsewhere.
- 2, p.6. Fig. 1 is *Caladenia* "red stem" with the all-red ovary, not *C. chlorostyla*.
- 3, p.6. Fig. 2 is *Caladenia* "green stem", provided those are a green ovary, on a green stem; it is not *C. chlorostyla*,
- 4, p.6. Fig. 4 is *Caladenia* aff. *variegata*, lacking any of the stray disc calli which Colenso specified for *C. variegata* s.s.
- 5, p.7. Fig. 5 is a quintessential *Thelymitra decora* (Cheesm.) and it will have a ridged post-anther lobe for sure. *T. nervosa* is plain blue, sometimes spotted or pink but always with a warted p.a. lobe.

6. p.9. Figs. 19 & 20 descriptions have been inadvertently switched.
7. p. 10, Fig. 22, *Pterostylis* "pallid" has a short floral bract, a straight dorsal sepal and a pale colour so it is being indexed in *Pt. banksii* alba form. Who else has seen it? what is its distribution?
8. p.11. Fig. 23, is *Caladenia* "red stem" as is Fig 1, p.6, not *C. chlorostyla*.
9. p15. Fig. 31, is *Caladenia* "green stem" not *C. aff. chlorostyla*.
10. p. 22. Anaglyph 3-D screws up pink colours. *C. barlettii* is pink, not purple.

\* Usually "The Column" reads a proof of each journal before it is printed, offering a range of comments that may or may not reach the final version. But the editor – who now apologises – somehow missed that safeguard for the February issue—Ed..

† Fitch's lithograph is attached to JD Hooker's specimen sheet at <http://apps.kew.org/herbcat/getImage.do?imageBarcode=K000364478>. Fitch's lithographs were coloured by others (not Fitch), presumably at Hooker's direction, in a limited number of copies of "Flora Novae Zelandiae". See papers in this issue for various views on *C. minor*.—Ed.



## 2. *Caladenia pusilla* & the *C. chlorostyla* clan

**Preamble:** Graeme Jane did us a favour in Journal 147, p. 16, by indicating the similarities between Gael's pink *Caladenia* "pupu" from Waikoropupu River and JD Hooker's *C. minor*. But *C.* "pupu" (Journal 75 pp. 11 & 36,) was dark pink and its dorsal sepal curled close to the column as in the *C. pusilla* seen at Picton (J147:5) but sepals were too narrow for that. It has not been reported since. There are also similarities between *C. pusilla* and *C. minor* but also distinct differences, as the Column has reconfirmed in the interim. During the process, Ian St George kindly obtained photos of four *Caladenia minor* specimen sheets from Kew, including Fig.1, which is one of the three which Ewen Cameron at AK borrowed from Kew for the Column to photograph, back on 21 Jan. 2005. Thank you Georgina Upson for spotting this. So the vexed definition of *C. minor* became clearer, under the spotlight, as did its recent unwanted lumping in the Journal with *C. aff. chlorostyla*, along with *C.* "green stem" and *C.* "red stem". These four taxa are distinct, as indicated and illustrated below, so lumping them previously has only confused the issue, for all of us, especially in the Journal index.

***Caladenia minor* definition.** It was inadequately described in 1853 [1] by J.D. Hooker, from specimens brought to him in the Bay of Islands by John Edgerly and William Colenso. There are some eight *Caladenia* taxa in the far north from which those two perspicacious gentlemen would have collected their specimens, yet Hooker described only one species from them, *Caladenia, minor!* how many of those taxa did he lump into that one species? Among the eight recognised far north *Caladenia*, *C. bartlettii*, *C. aff. bartlettii*, *C. alata* and *C. pusilla* are pink, so JDH put *C. minor* as "pink". Thus subsequent definers have usually started, in error, with "pink" as a prime trait. Not so fast; the other four taxa are basically white, although *C. atradenia* has a dark red labellum and creamy inner tepals. Back at Kew, WH Fitch got the job of drawing the Type from a specimen preserved in spirit, i.e. bleached white. He did a magnificent, if imaginative drawing, as can be seen in Graeme's article in J147:17. However, Fitch's flower is pale mauve (none of the eight is mauve) instead of white, the stem is green instead of red and the yellow disc calli which numbered 22, instead of about 12, are red legged, either white or yellow topped. He would not have been able to see clearly into the speci-



Fig. 1: *C. minor* type sheet K000859095

men's labellum so made some ingenious guesses here. Consequently we have to view with distinct caution, both Hooker's lumped description and Fitch's imaginative drawing, leaving us with only the pressed Type specimens for best identification; therein lies another story.

Fig. 1 had been made a Syntype for *C. minor* by Mark Clements in 1987 but was upgraded to a Lectoparatype at Kew, after re-examination by Brian Molloy in 1991. Kew do not lend out accredited Lectotypes. However, the best specimen, second from bottom, enlarged and rotated in blurry Fig. 2, is the one that the Column



photographed on 21 Jan. 05, at AK, as can be seen by comparison with Allan Ducker's montage of it with a modern *C. minor* in Fig. 3. In 2005, this best specimen

on the sheet had apparently broken off (from whose collection?) then been tucked into a pocket at the bot-

tom. Kew staff have since trimmed off the stem behind and covered the specimen under clear film, along with other casualties, for all to see. Brian and Mark Clements had differed as to

which specimen was the Lectotype, amidst a number of other species on the sheets. Their varying identifications give little confidence as to the true *C. minor*, however the Column sees no reason to doubt Fig. 3 as *Caladenia minor* s.s. which is well known in the north.

What do you think? Note that photographing the specimen directly, by far improves the image clarity from that enlarged from a 2mB photo of the whole specimen sheet.

*Caladenia pusilla* (W.M. Curtis) [2] in NZ is somewhat variable,



from north to south but in all its variations, comes close to and may have originated from, the Australian species at either Langwarrin or Killawarra [3]. Jeannes and Backhouse depict six forms therefrom, all are single flowered, dorsal sepals curled down over the column and obtuse to sub-obtuse lateral sepals. Two are white, four have green stems and ovaries. The stem in the NZ look-alike, is red and the ovary is green with red ridges just as in *C. minor* and *C. bartlettii*. Winfred Curtis' brief description [3] of the King Island(?) Lectotype echoes the NZ specimens but she also mentions some with conjoined lateral sepals and occasional white ones in Tasmania and King Island.

### Identifiable distinguishing traits among the four taxa

**Preliminary:** the "greenish-white" *Caladenia* "green column": was tagged by Doug McCrae in Journal 35: p32, Sept. 1990. Brian Molloy latinised it in 1997 to *C. chlorostyla* in his Type description. Doug's *C. "green column"* however included three taxa as he showed Allan Ducker and the Column at Albany Scenic Reserve on 18 Nov 1993. The three included,

*C. chlorostyla*, *C. "green stem"* and *C. minor*. These three taxa, as well as related *C. "red stem"*, keep getting called *C. aff. chlorostyla*, but in error, possibly in honour of Doug's sterling early efforts in NZ orchid identification, but it's no excuse! The first three above, all have the following traits which are not mentioned in their particular treatment below,

- 1, usually twin flowered, sometimes single;
- 2, stem ovary and bud all hairy, hairs usually with tiny red glands atop.
- 3, tepals acute, white on the inner side;
- 4, dorsal sepal semi-erect;
- 5, labellum is three lobed, lateral lobes erect, white, red barred inside, the midlobe is acute and entirely toothed but naked on top. The labellum disc has two parallel rows of round headed calli.

There, the resemblance among these three ends.

1, *Caladenia chlorostyla* D.L. Jones, Molloy & M.A. Clem: **Fig. 4.**



and [4]. Beware; the Type description covers two forms, Brian Molloy's from Tinline River, Marlborough, a specimen with red ribs on a green ovary (a trait that the Column has yet to see) and one from far north Parau (where Doug McCrae once lived) being David Jones' included drawing. The latter is the widespread common form mentioned below. Also included is HB Matthews' rare *C. chloroleuca* with up to five *C. chlorostyla* flowers. It has been left in limbo due to insufficient good specimens or photos.

- a, Stem, bracts, ovary and bud are green.
- b, Labellum midlobe is white, yellow toothed on the margins.
- c, Labellum disc calli have white legs and yellow heads, 16 in all, the bigger back four are in a cluster.
- d, Column is plain green on top with dark red bars below; inside is red, white barred in the wings.

2, *Caladenia* "green stem" A Ducker, **Fig. 5,** had been lumped with



*C. minor* in *Colour Field Guide 3*, 2011, but Allan Ducker's study of interspersed colonies of the two taxa, at the back of Waikumete Cemetery, showed them to be distinct, with flowering times only ten days apart and few if any hybrids.

- a, Stem, bracts and ovary are green but the bud shows scattered red glands, especially on the dorsal sepal. Tepals have an outer, light red, midrib.
- b, Labellum midlobe is white, toothed pale yellow on the margins.

- c, Labellum disc calli are yellow topped and have either white legs, when standing on a white bar or red legs when standing on a red bar, so both may occur in one flower.
- d, Column is green on top, white and red barred inside.

3, *Caladenia* "red stem" G Sylvester, **Fig. 6,** occurs from the Puffer

Track, Kaitoke, Picton and south, so was never in Doug McCrae's far north. *C.* "green column" group but is clearly related. It is 2 to 4 flowered at the Puffer Tk. but Allan Ducker has seen single flowered specimens at Bealey Spur. At Picton, see J147, p. 11, Fig 23 by Murray Dawson. Also J147:6, Fig. 1 is *C.* "red stem" twin flowered but annotated in error as a *C. chlorostyla* variation. It is far from *C. chlorostyla*!



- a, Stems, bracts, ovary and bud are dark red. Stems are crowded with red topped, clear hairs.
- b, Labellum midlobe is yellow tipped, white at centre, dark red barred at the rear. Marginal calli are yellow topped and yellow legged at the tip but red legged at the base.
- c, Labellum disc calli in 2 rows have dark red legs and yellow tops.
- d, Column is green with rows of red spots on top, white inside with red spots.
- e, tepals are acute, white inside with longitudinal red ribs showing through from the outside.

4, *Caladenia minor* **Fig. 7,** the northern, form, is illustrated here.

Mark Moorhouse has it in Nelson but note that Georgina Upson has a pink tepalled colony at Baton Valley and Kendyll Levy has a three flowered form at Charleston.

- a, Stem and floral bract are red, ovary is green with red ridges and the bud is loaded with red glands.



Fig.7: *Caladenia minor* Shenstone, Far North, 13 October 2002

- b**, Labellum midlobe is white with pale yellow (rarely white) marginal calli.
- c**, Labellum disc calli are red legged, yellow topped. N.b. Kendyll's three flowered and Georgina's pink tepalled forms, have white legs as do some of Mark's Nelson specimens.
- d**, Column is green on top with various red patches, white and red barred below.

**4, *Caladenia pusilla* WM Curtis, Fig. 8**, varies somewhat between the far north and Picton either from different seeds arriving in the jet-stream from Oz or from millennia of minute mutations as plants migrate across the area. Fig. 8 is from Shenstone Block, Te Pahi. Salient differences from *C. minor* are underlined below.



- a**, Always single flowered, stem is red, ovary is green with red ridges but,
- b**, Tepals are obtuse not acute tepals are pink shading to white at the base, not all white. The toothed labellum midlobe is all yellow.
- c**, The dorsal sepal curls down close to the column.

**Conclusion:** do please use these established tags and species names when writing up or discussing these taxa. Yes, they are under the “chlorostyla group” in the *Pocket Guide* except for *C. “red stem”* which was omitted there for brevity but do avoid including “chlorostyla” when naming them. The Journal’s index and its users can do without these tedious, time consuming, double entries.

#### References

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