



The New Zealand
Native
Orchid
Journal

117



1-3: *Pterostylis emarginata* Col.?
See "The type locality"



4: Wilma Fitzgibbons p.13



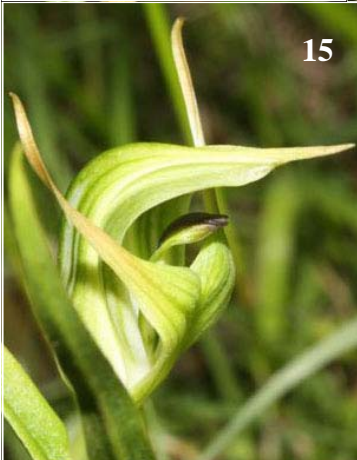


***Pterostylis venosa*
variations (p.19)**

Figs 5 Arthur's Pass (Gordon Sylvester); 6 Mt Taranaki (IStG);
7 *Pterostylis humilis* (IStG Whakapapa); 8, 9 Otago (IStG);
10 *Pterostylis trifolia* (Mike Lusk, Ruahines);
11 Temple Basin (Maurice Sinclair).

The N.Is forms appear to have wavy edges to rather smaller
leaves; the flowers appear similar.





Gary Pennial's collection (see p. 19, & p.15 for key))



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The type locality: Ian St George

12. *Pterostylis emarginata** Col. and Hampden.

William Colenso described *Pterostylis emarginata* in 1883. Cheeseman lumped it (along with *Pp. auriculata*, *speciosa*, *patens* and *subsimilis*) into *P. banksii*. W.r.t. *P. emarginata*, all others so far have followed suit.

Colenso's description

Pterostylis emarginata, sp. nov.

Stem stout (nearly as thick as a goose-quill), erect, reddish (light brickred), 10–16 in. high, 3–4 scarious bracts below, leafy in the upper half; *leaves* 6 in number, membranous, glabrous, shining, slightly spreading, alternate, 5–7 in. long, ½ in. broad, linear-acuminate, obscurely 2-nerved longitudinally, a little shorter than the flower, sessile, vaginant, very stoutly keeled, midrib thick 1 line wide, reddish. *Flower* membranaceous, striped white and green, rather large, 2–2¼ in. long including tails of sepals but excluding ovary, erect, lower lip of perianth ascending, ½ in. broad below furcation, ending in two long and fine red tails 1¼ in. long, dorsal sepal with a very long red caudate apex much longer than the petals, and but a little shorter than those of the lower lip; *petals* somewhat falcate with a sharply produced abrupt angle on the upper edge, shortly acuminate and red-tipped, but without tails; *labellum* included, or but slightly exerted, oblong, emarginate, deflexed, 7 lines long, 3 lines broad, glabrous, membranous below and thickest at tip, striped green and white longitudinally with a dark red central line running towards tip, and there ending in a thick red callus not extending to margin; *appendix* more than 2 lines long, curved upwards, flat, bifid, and rather largely fimbriate (not villous), fimbriæ penicillate at tips; *column* taller than lip, wings large, each produced upwards in a long erect subulate point at the front angle, and downwards in an oblong auricle finely ciliated on the inner margins, white with a green transverse band. *Ovary* large, 1–1¼ in. long, sub-cylindrical, green, strongly 6-ribbed. *Tuber* large, white, rotund but

much pitted and irregular, nearly an inch in diameter, resembling a very small and young round potato; rootlets several and stout, some proceeding from the stem 2 in. above the base.

Hab. In low forests, banks of streams descending from the east flank of Te Ruahine Mountain Range, 1847–1852; *W. C.*: also, in the forest at Te Aute, 1882; *Mr. C. P. Winkermann*: and also in the forests at Hampden, 1882; *Mr. S. W. Hardy*: all localities in the Hawke's Bay district, North Island.

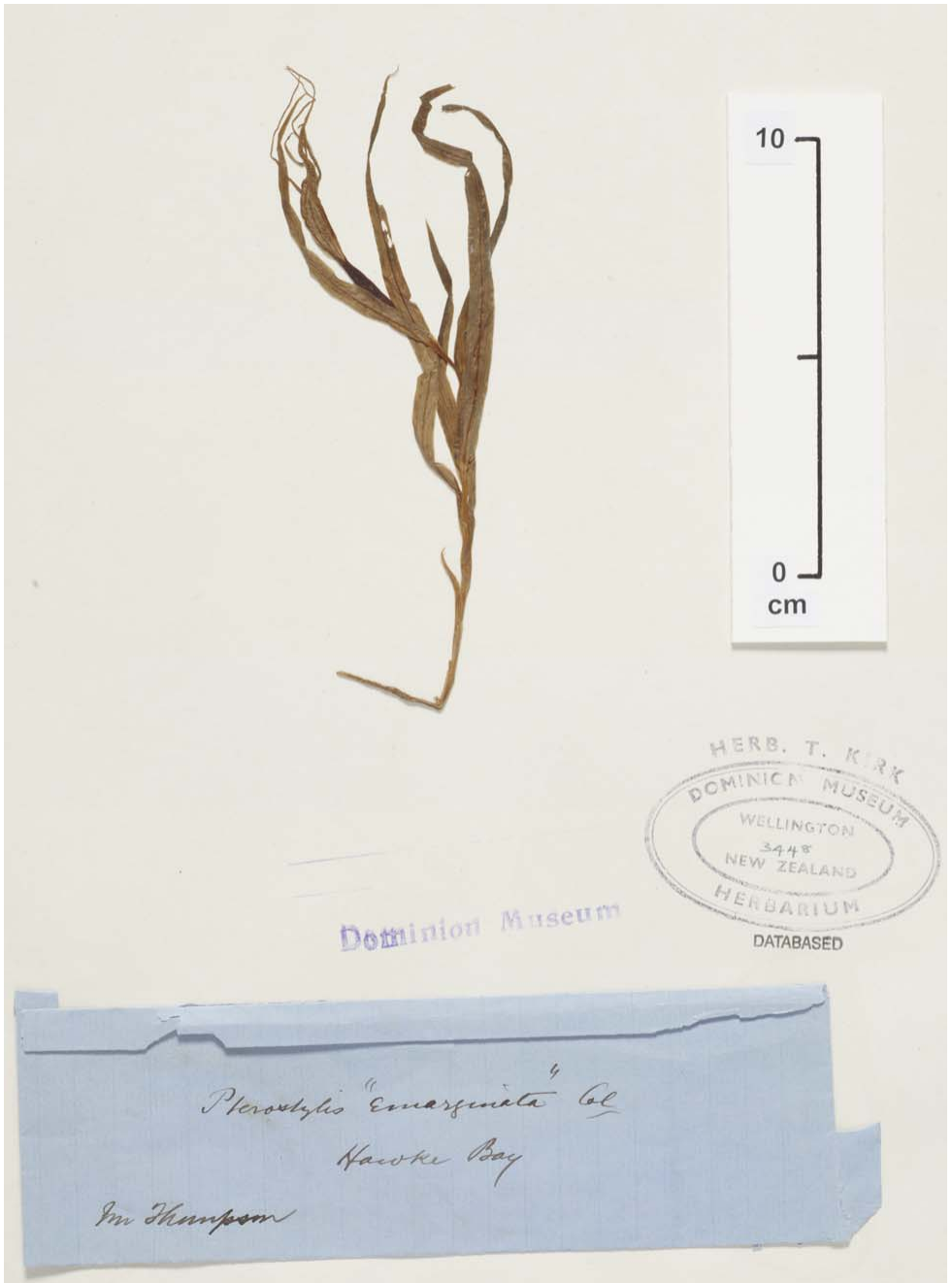
Obs. I.—A truly fine species having affinity with *Pt. banksii* (and long overlooked as belonging to it), but differing from that species in several important particulars—such as "*Pt. banksii*—*leaves numerous, produced much beyond the flowers, narrow, grassy; lip linear narrow; sepals and petals produced into very long filiform tails*"—FLORA N.Z.: and "*labelli lamina obtusa*"—BROWN, LINDLEY, CUNNINGHAM, etc., etc.

Obs. II.—The whole of this truly natural genus, as represented in New Zealand, wants skilful revision from living specimens, or from good floral specimens preserved in spirits; particularly with reference to the formation, etc., of the delicate wings of the column, which vary in the different species; and which, while well worked-up by Sir J. D. Hooker in his *Flora Tasmaniae* (and subsequently by Bentham in his *Flora Australiensis*), seems to have been overlooked in both the *Flora N.Z.*, and the more modern "Handbook."

Herbarium specimens

A scruffy specimen (opposite) in Herb Kirk WELT 3448 was collected in "Hawke Bay" by "Mr. Thompson". It was probably collected for Kirk, as there is no recorded instance of a "Thompson" collecting for Colenso. This is therefore unlikely to be from the original collection. Nevertheless Kirk was corresponding with Colenso in the early 80s, so may well have known Colenso's plant.

* "Emarginate" = notched, referring to the labellum tip



The little plant identified by Kirk as Colenso's *P. emarginata*.
Reproduced with permission of the Museum of New Zealand Te Papa Tongarewa.

There is a specimen sheet at Kew (p.9) which has a range of plants from different places, but, importantly, two plants lectotyped by Brian Molloy as *P. emarginata*. They bear a label in Colenso's hand, "Pterostylis emarginata, W. Colenso", above which has been written, in another hand, "P. Banksii", and below "Coll. W. Colenso New Zealand 9/83". Colenso sent specimens of *P. emarginata* to JD Hooker via the "Ionic" in June 1883, and noted in a letter dated 7 September that a telegram from London had told him of her safe arrival there.

Another label, apparently in Kirk's hand, appears to refer to the plant at lower left on the type sheet: "Pterostylis emarginata Colenso.... near Dunedin. T. Kirk. From descrn. only: I have seen no authenticated specimen."

Colenso agreed in the original description above that *P. emarginata* was close to *P. banksii*, but noted of his new plant that (1) the lateral petals did not end in filiform points, (2) the labellum was broad and its tip was notched, (3) the leaves did not overtop the flowers.

None of those characteristics is obvious from the Kew specimen, and all could be found in *P. banksii*.

What is obvious, though, is that both these collections were of much smaller plants than *P. banksii*.

The type localities

He found it "In low forests, banks of streams descending from the east flank of Te Ruahine Mountain Range," during his early missionary years (1847-1852). Those famous Ruahine crossings, for the sake of pastoral visits to the villages of Mokai Patea, are summarised in Colenso's 1884 "In memoriam. An account of visits to, and crossings over the Ruahine mountain range, Hawke's Bay, New Zealand; and of the natural history of that region; performed in 1845-1847: *cum multis aliis*." (*Daily Telegraph* Office, Napier. iv, 74 p.), and it can be seen that he visited many rivers and streams flowing from the east side of the Ruahines.

• 1847, December.—Outward and homeward

journeys via Ruahine (Waipawa and Makaroro rivers).

- 1848, November.—Outward journey via Southern Ruahine, Pohangina, Oroua and Rangitikei River valleys; homeward via Ruahine.
- 1849, November.—Outward journey via Ruahine; homeward via Taupo and Tarawera.
- 1851, October.—Outward journey via Ngauroro River and Kuripapango; homeward via Ruahine.
- 1852, February.—Outward journey via Tutaekuri River and Kuripapango; homeward via Ruahine.

There is no forest near Te Aute (where Charles Winkelmann found it) now.

Present-day Tikokino was called Hampden (where SW Hardy found it for Colenso) in those days, and the Sunrise track at Wakarara is nearby, as is the Makaroro river, Colenso's frequent route to the Ruahine.

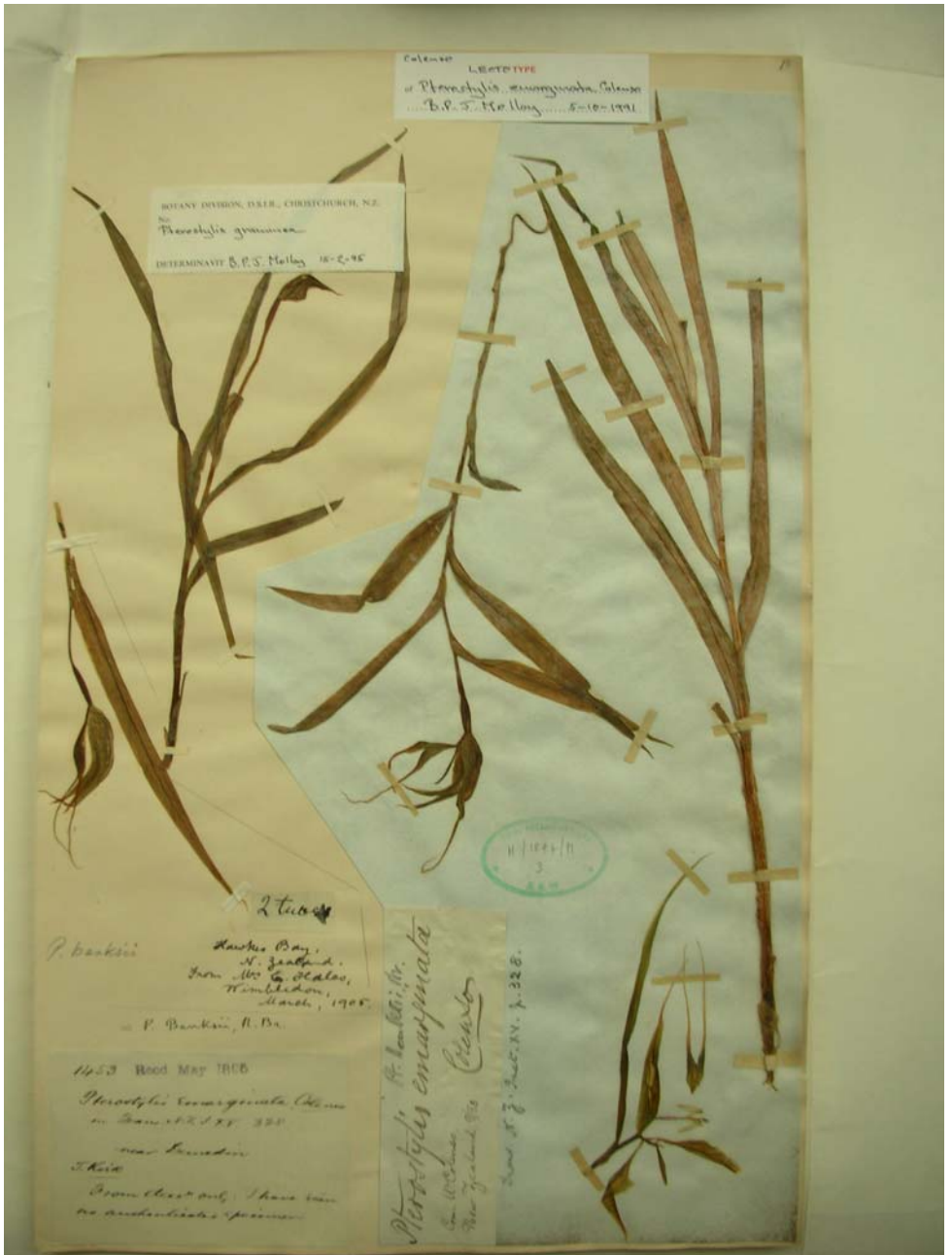
What is it?

Note the size of *P. emarginata* compared with the *P. graminea* on the same Kew sheet. It is not as big as *P. banksii*. Is it the smaller *P. aff. banksii* that I have reported previously from Airlie Rd near Plimmerton? (which, by the way, appears to be "Pterostylis media" of HB Matthews's manuscript [see "NZ orchids in black and white." *NZNOG Hist. Ser.* 17: 38]).

On 24 November 2009 I looked again at that colony (**Fig.1**), and I believe it may be *P. emarginata* Col. The labellum tip is consistently emarginate (**Fig.2**); the petals acute but not filiform (the trident form shown from above in **Fig.3** illustrates this well); it is a smaller plant (note the dandelion next to it in Fig.1); the flower often overtops the leaves.

I have yet to find similar plants in the Ruahine, but I will be looking this season.

Perhaps a couple of good starting points will be the Sunrise Track, the Makaroro, or even Wimbledon, where a Mrs G. Hales appears to have found the plant at lower left and sent it to Kirk, who sent it with a rather tentative identification to Kew in 1905, six years after Colenso's death.



Pterostylis emarginata: Colenso's type specimens at Kew, labelled in his hand, are the three at right. The specimens at left are from different collections—one is identified as *P. graminea*, and is only marginally smaller than the *P. emarginata* plants.

Eponymous orchids: Val Smith

George Caley (1770-1829) & *Caleana minor*

George Caley, the son of a horse dealer, was born on 10 June 1770 at Craven, Yorkshire, England. After a formal education of only four years at Manchester Free Grammar School, he left to work in his father's stables. In order to learn more about farriery, the practice of horse-medicine, he studied botany, and encouraged by the celebrated Dr William Withering, became associated with the Manchester School of Botanists. In 1795 he approached Sir Joseph Banks, and after working at Kew and other gardens, he was sent by Banks to New South Wales, Australia, as his first residential botanical collector in the colonies.

Caley arrived in Sydney in April 1800 and was allotted a house at Parramatta where he could keep his specimens and plants. He devoted the next ten years to exploration and the collection of natural history specimens, keeping a record of each excursion in a journal, and sending enormous quantities of dried specimens, living plants, seeds and descriptions to his patron. He also investigated the complexities of the *Eucalyptus* genus by following up the different Aboriginal names of similar looking trees, and through his excursions and friendly contact with the Aboriginal inhabitants, he acquired an intimate knowledge of the countryside.

An astute observer, Caley was energetic and diligent, with an insatiable desire to explore and collect. However, he had a stubborn independence, a quick temper and lack of tact, and his frank and impartial comments and criticisms were less appreciated by his contemporaries than they were by later historians. His response to instructions was to do nothing at all, but when left to his own devices he exceeded expectations. It was said in New South Wales at the time that Caley and the common hangman were the only two people who did as they pleased!

In 1807 Banks terminated Caley's appointment, but offered him a small pension, and agreed to his remaining in New South Wales if he wished. Mail services were slow, and it was May 1810 before Caley left for England. He lived there until 1816, when he was appointed superintendent of the botanical gardens at St Vincent, in the West Indies. Harassed in his work by the residents, and suffering from a tropical illness, he resigned at the end of 1822. He returned to England and lived at Bayswater, London, until his death on 23 May 1829, predeceased by his wife whom he had married in 1816. They had no children.

George Caley's work in New South Wales received little recognition, other than several plants named after him. When the celebrated botanist Robert Brown was in Australia as naturalist on Matthew Flinders' historic *Terra Australis* expedition, he joined Caley on some botanical excursions, and was impressed with the nearly fifty species of *Eucalyptus* Caley had studied and collected around Port Jackson. Ironically, it was a sensitive and irritable genus of orchids that Brown named *Caleana*! (Now *Sullivania*, here drawn by Bruce Irwin).

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Pterostylis patens—some thoughts

by Gordon Sylvester

While I was rereading J115 prior to checking the mapping information, the article on the type locality attracted my attention. As was Ian's intention!

In my wanderings about the Hokitika/ Kumara/ Taramakau areas I have noted several strange species of the *Pterostylis* persuasion, in particular with severely bent back lateral sepals. I have recorded these as Mahinapuna Forest (Sandstone), Taramakau River (Fowlie) and a couple of other nondescript locations (The Pt. Fowlie site has been seriously modified by the cow cocky stripping all of the ground cover off and piling it up in huge heaps and converted it to grazing). I am now wondering if they are in fact the true *Pterostylis patens* as described on page 9 column 1. Hmmm some work needs to be done here.

While on mapping matters I have a strange location for *Pterostylis irwinii*. Charleston!

Charleston is on the coast at an elevation of about 20m. The landscape is seriously altered by gold mining. The vegetation is scrub 2nd regeneration. While I had no other reason to look into this record, I decided to look at the other known sites with attention to altitude. No surprises there all were within 100m of each other. Erua (Type locality) is 740-760m above sea level. Takaka Hill (Bob's Lookout) 760-780 m. And finally Arthurs Pass location is about 850m above sea level. It would clearly indicate a preference for high altitude conditions temperature etc.

This of course now leaves us with a conundrum: just what was observed at Charleston on the coast? And given the observed characteristics of *Pt. irwinii*, this now leaves the door open for other similar looking plants to step up to the mark.

Hopefully the recorder (Kendyll) took some photographs of her discovery; to resolve this particular issue the publication of those photos

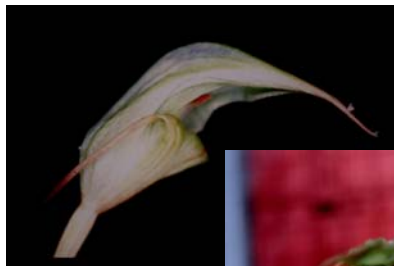
will be of enormous value to us all. I am now altering the data base to reflect this argument.

Having obtained and "translated" the records kept by Tony Druce of his identification of plants especially in scenic reserves, I have now added these to the database. There is one list of huge value to us, that for ER 26 Moawhango Waiouru (an area of mystery in almost all of our maps).

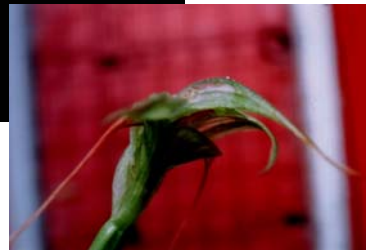
The other important data came to me from Graeme Jane's computer while we were at Arthurs Pass. I have to record my thanks to Graeme for spending a lot of hours sorting out his list for my purposes and then transferring it to a zip drive to enable me to update the whole data base.

As a result of both of these activities, we now have in excess of 37,000 records of orchid locations. While a lot of Tony Druce's records are pre-Field Guide, it is no real difficulty to make the necessary corrections. Suffice to say the NZNOG orchid list has now achieved some importance as a repository that is not equalled anywhere in the country.

Anyone wishing to obtain a copy of these data needs "Microsoft Access", and the ability to read a data DVD. As you can appreciate the list is always going to be dated as soon as new information arrives.



← *Pterostylis*
"sandstone"



Pterostylis
"Fowlie" →

Nelson notes

Georgina Upson

It has been an interesting and rewarding season in the Nelson area despite low snows in October and only the rare sunny day.

Revisiting some of the *Linguella puberula* sites I found that one large colony of approximately 70 plants had vanished over a three year period. They seem highly sensitive to any drop in light levels from the growth of surrounding vegetation. Only one colony had increased in size although even these plants had shifted significantly or died and replaced themselves. It appears that they are compelled to live a very mobile existence on the edge of open spaces. No wonder they are rare!

A mid October foray up the Killdevil track ER46 seemed rather a fruitless mission with only two orchid flowers seen. One, a *Petalochilus* initially appeared to be a *chlorostylus* until the grey cells activated to the point of registering that it was a trifle too early for them in this area. The bright orange midlobe calli demanded attention and a rather surprised person spent some time photographing *Petalochilus alatus*, a single plant that has set seed. A first South Island report

October was *Nematoceras* month with ongoing discoveries. *Nematoceras* “pollok”, or variables, turned up in three sites showing differing quantities of red and internal patterns. *N. “kaimai”* was found by the random *N. “whiskers”* pick method in ER47. *N. longipetalum* comes in a variety of forms with more than one at most sites. One rather “whiskered” form is notably interesting. More time and sites are required to better evaluate all these *N. rivulare* agg. Taxa.

A check on *Thelymitra aemula* brought an unwelcome surprise. There had been plantings of more attractive trees and shrubs in the scrub over winter with a tourist picnic or rest site in mind. There appeared to be three plants still there but the weather was unsuitable and a return visit not made. Yes, D.O.C. had been notified of the find.

November was *Stegostyla* “minor” month, a must do ably reported by Mark Moorhouse. I will comment here on the possible pink *Petalochilus chlorostylus*. A slip of the pen I’m sure but they are like *P. aff. chlorostylus* with red glands on the tepal backs. I feel uneasy that they are simply a pink *P. aff. chlorostylus*. The tepals are planar, not cupping, one flower had obtuse lateral sepals, the lateral sepals may be basally fused and the dorsal sepals were very upright. Most of these things are found sometimes in *P. aff. chlorostylus* but further study is warranted. It seems extraordinary, with *P. aff. chlorostylus* being a common, widespread species that pink plants should only be found at one site in all these years barring perhaps the mysterious *Caladenia minor* described by J.D. Hooker, the description of which closely matches these plants. Sparse *Petalochilus bartlettii* are found in the vicinity and these plants could conceivably be a hybrid although the same question arises as to why they haven’t been seen elsewhere.

While on the subject of *P. chlorostylus* and its *aff.*, what is one to call the “*aff. chlorostylus*” to be found? You know those in-between models that have only a few glands, usually toward the apex of the dorsal sepal. They are not uncommon in some areas and can have greenish or white tepals.

Our cool sunless spring leads me to another observation, this time in regard to *Pterostylis* species. While late to emerge, the foliage was lush with the leaves noticeably broader than usual. *Pterostylis aff. montana* looked decidedly like *P. silvicultrix*. Some *P. graminea* had *P. banksii* type foliage. It is possible that some of the reported “new” taxa may be simply explained by differing climatic conditions.

Oh, one other thing that should be mentioned, not because it isn’t known about these parts but nobody has reported it. We do have *Cyrtostylis oblonga* growing down here by itself and in mixed colonies with *Cyrtostylis rotundifolia (reniformis)*. It seems to be a single species with lack of light or nutrients causing the oblong leaf formation. I

have seen oblong leaves on quite a long stem in a deeply shaded spot. They are seen throughout ER46.

December is time to make the acquaintance of *Hymenochilus tanyпода* in our alpine and subalpine zones. At around 25mm height they are not easy to find in rocky sparsely vegetated areas or among short grasses and moss. Some were in flower by mid month. They are not restricted to the montane areas mentioned in field guides.

January found me looking for further evidence of a strange *Thelymitra* that had come to my attention the previous year. Curiosity got the better of me when I noticed a malformed bud on a four flowered stem and found that the column was unlike any that I had previously seen. The cold spring had taken its toll on *Thelymitra* numbers and two searches in different areas brought no result. A third search finally gave joy. The principle difficulty with these is that they do not appear to open. If they do it would be rarely, only on the hottest, most humid of days. I was not able to induce a flower to open even partially naturally. Could they be cleistogamic? The weather this year hasn't been the most propitious either.

Here is a brief description for *Thelymitra* "Cobb"; Habitat; 1000m altitude in open, short, subalpine scrub and Manuka in an exposed site. Leaf; 4-8mmx 100mm long, beginning to die back at flowering. Some (all?) red stained at base. Flowering height, 150-250mm. Usually 2 sterile bracts, Peduncle and all bracts reddish. 1-5 flowers commonly 1-3. Ovary, green. Tepals, a strong medium blue to slightly purplish with a few small dark spots on the petals. Very few spots if any on the dorsal sepal. Longitudinal slightly darker blue lines may be (are? found on all examined flowers) present on the sepals. Column; white to marginally pinkish. Post anther lobe a truncate, usually rounded rim, shallowly toothed, dorsally very shallowly ribbed. Column collar is a deep violet to almost blackish blended on the lower side with a yellow apex. Column arms: obliquely erect, not in-bent with mop-like cilia. Finer cilia may

continue down the upper side of the column arms to the column. The anther has what seems to be a long, slender yellow connective but this appears to divide to become an anther wing with the crumbly pollen falling from the area between onto the stigma. Is this usual? It seems odd. I am reporting what I believe I saw making no pretense to understand it. Was it the result of the rather vicious forcing necessary to get any view of these flowers? Malformations of the flowers appear relatively common although this could be a seasonal effect. Buds are distinctive in the late stages being a bluish grey. Finished flowers are recognizable by their red stems and green ovary with dark floral remnants. Around 50 plants were seen that could reasonably confidently be assumed to be this taxon. The distribution showed that the plants seem to be reproducing successfully.

If this description is lacking, blame it on the fact that it is difficult to study something that refuses to open. I consider it fortunate that under extreme duress I was able to get the few photos that I have. It is obviously part of the group connected with *T. ixioides* or its affiliated members. There are two Australian species, *T. simulata* and *T. truncata* (*T. ixioides/pauciflora* agg. hybrid) along with our own *T. nervosa/decora*, all of which bear resemblance to these plants.. All have some aspect of their descriptions that do not correspond to these leaving one to ponder whether these are just another version of one of them or something new. **Fig 29** What you are likely to find. **Fig 31** A slightly immature column although dropping pollen already. **Fig 30, 32** Forced flower.

In the area where these are found there are *T. cyanea*, *T. pulchella*, *T. longifolia*, *T. hatchii* and *T. formosa* all of which had the decency to partly or fully open. I have seen no *T. aff. ixioides* at this altitude although they are present some miles away at lower levels neither have I seen any *T. pauciflora*.

Does Nelson specialise in pink oddities? When investigating *Thelymitra ixioides* and its *aff.* I was surprised that neither species is reported to be pink. **Fig.34** is a pink flowered

specimen from the Killdevil track taken season before last. It seems to be *T. aff. ixioides* despite having larger spots as it does not match the large spotted Australian *T. juncifolia*. Spotted *T. aff. ixioides* plants are also to be found.

Another pink *Thelymitra*, that I lost patience with, was found in the Baton some years ago. See **Fig 33**. There is some possibility that it could have been a hybrid between *T. longifolia* and *T. carnea* that were both to be found in the area. A kindly pig removed the offender thereby solving the problem.

This year we have the possible pink *Petalochilus aff. chlorostylus*, and last but certainly not least I was able to gain permission from Garry Lewis of Collingwood Area School to send his photographs of pink *Singularibas oblonga* **Fig 35** that he found in that area, for publishing in the Journal. Many thanks Garry. Garry has been studying the biodiversity of the north-western portion of Golden Bay.

Colenso's collections

including the unpublished
work of the late
Bruce Hamlin
on William Colenso's
New Zealand plants
held at Te Papa

compiled
by Ian St George
412 pages + searchable CD
\$35 includes postage in NZ
(enquire about cost of overseas postage)

From Brian Tyler, 4 Byrd St,
Levin. BandJ.Tyler@xtra.co.nz.

The New Zealand Native Orchid Journal

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Gary Pennial's collection (see p.4 & p.19)

Figs 12 *Pt. graminea*;
13, 14 *Pt.* "pulchragalea"; **15** *Pterostylis* sp. ?
montana; **16** *Stegastyla atradenia*;
17, 24 *Drymoanthus flavus*; **18** *Chiloglottis*
cornuta; **19** *Nematoceras macranthum*;
20 Twin headed *Singularis oblongus*;
21 *Petalochilus variegatus*;
23 White/pink *S. oblongus*;

25:



26: The European ghost orchid, p.13



25-28: Mike Lusk, p.14



27



28 29





30 31



32



29-35: see
Georgina
Upson's
"Nelson
notes", p.10

33



34



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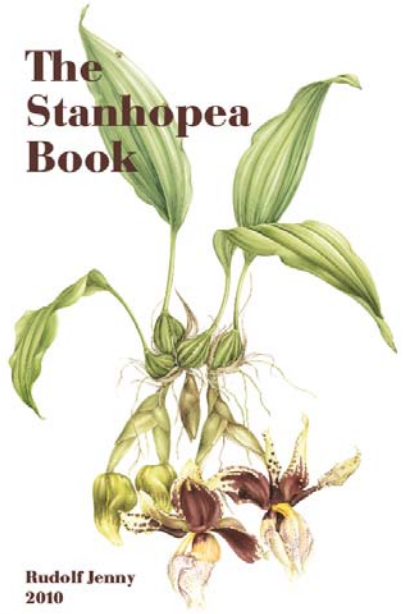


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The Stanhopea Book



Rudolf Jenny
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36: p.20

37: *Serapius cordillera* p.23



Notes etc

Wilma Fitzgibbons emailed with a photograph of a *Drymoanthus* (Fig.4), growing on a 30year old avocado tree in Browns Rd, Te Puke. A piece of plywood was nailed onto the tree to stop the chooks eating the plant.

Maurice Sinclair emailed (16 March), “I have attached an image (Fig.11) of a *Pterostylis* seen at Temple Basin over the last two summers. Although I have been accompanying school biology groups to the area for nearly 20 years, I only looked critically at the particular habitat last year in March. I resolved to come back in January to see the flower but didn't manage it, having to be satisfied with another March view. I don't have much intuition when it comes to orchids but it is probably one of two which occur on Colin Burrow's Arthurs Pass list for this kind of habitat and having the plant form as shown: - *humilis* or *venosa*. The leaf colour in the image is typical of all the plants seen (about 12) spread through 4 separate sites.

I sent the image to Gordon Sylvester, who responded, “*Pt. venosa* was identified by Alan Ducker from the site he found it at near the twin Creeks Bridge (53.02) It was also seen at the Bealey Chasm track. The flower was past its best but a bright crimson red with a bright crimson red labellum” (Fig.5). That is a stunning image; I have also included photographs of *P. venosa* from other locations for comparison: Otago (Fig.8, 9), Ruahines (*P. trifolia*, Mike Lusk Fig. 10) and Taranaki (Fig.6). *P. trifolia* seems to me to be typical of montane orchids—short stem, cupping leaves. Note the smaller, wavy-edged wrinkled leaves of the Taranaki and Ruahine plants, compared with the broad, smooth (even shiny) leaves of the southern forms. The southern leaves are more like those of *P. humilis* (Fig. 7), but the stigmas (at least of the Otago flowers I examined) are flat—Ed.

Gary Penniall sent further photographs from his journey before and after the 2009 AGM at Sika Lodge [J116: 13]. Eric Scanlen and Gary and I have identified them as follows: **Figs 12** *Pt. graminea*; **13, 14** *Pt.* “*pulchragalea*”; **15** *Pterostylis* sp. ? *montana*; **16** *Stegostyla atradenia*; **17, 24** *Drymoanthus flavus*; **18** *Chiloglottis cornuta*; **19** *Nematoceras macranthum*; **20** Twin headed *Singularis oblongus*; **21** *Petalochilus variegatus*; **23** White/pink *S. oblongus*; **22** *Nematoceras trilobum* agg.

The shapes of the leaves in the *Nematoceras trilobum* aggregate seem endlessly variable. This colony in the Twelve-Mile creek near Queenstown, well past flowering in March, had shovel-shaped leaves, perhaps apt in a goldmining area.



Britain's rarest plant, the leafless European “Ghost orchid” *Epipogium aphylla* (Fig.26), has been found again after 23 years' absence, and the declaration that it was extinct in Britain. See <http://www.independent.co.uk/environment/nature/so-there-you-are-britains-rarest-wildflower-the-ghost-orchid-returns-from-the-dead-after-23-years-1923853.html>.

NZNOG member Rudolph Jenny will be publishing *The Stanhopea* book this year: if you are interested in such exotics, email him at RJOorchid@gmx.ch (see p.18)

Mike Lusk sent (14 April), “A couple of pics (of *Earina autumnalis*) from the Makororo and one from the Mangatewainui (Figs 25-28). Quite a marked difference in the distribution of yellow pigment, but I presume that's just variation within the species?” -Yes, I agree—Ed.

The Colenso Society has been incorporated and now has 35 members, with Peter Wells secretary, Gordon Sylvester treasurer and Ian St George convenor. Members represent a wide range of interests—botany, printing, linguistics and religion among them. The Hawke’s Bay Museum and Art Gallery will be holding a Colenso Conference around 7 November 2011, the 200th anniversary of his birth. A newsletter is in its fourth issue.

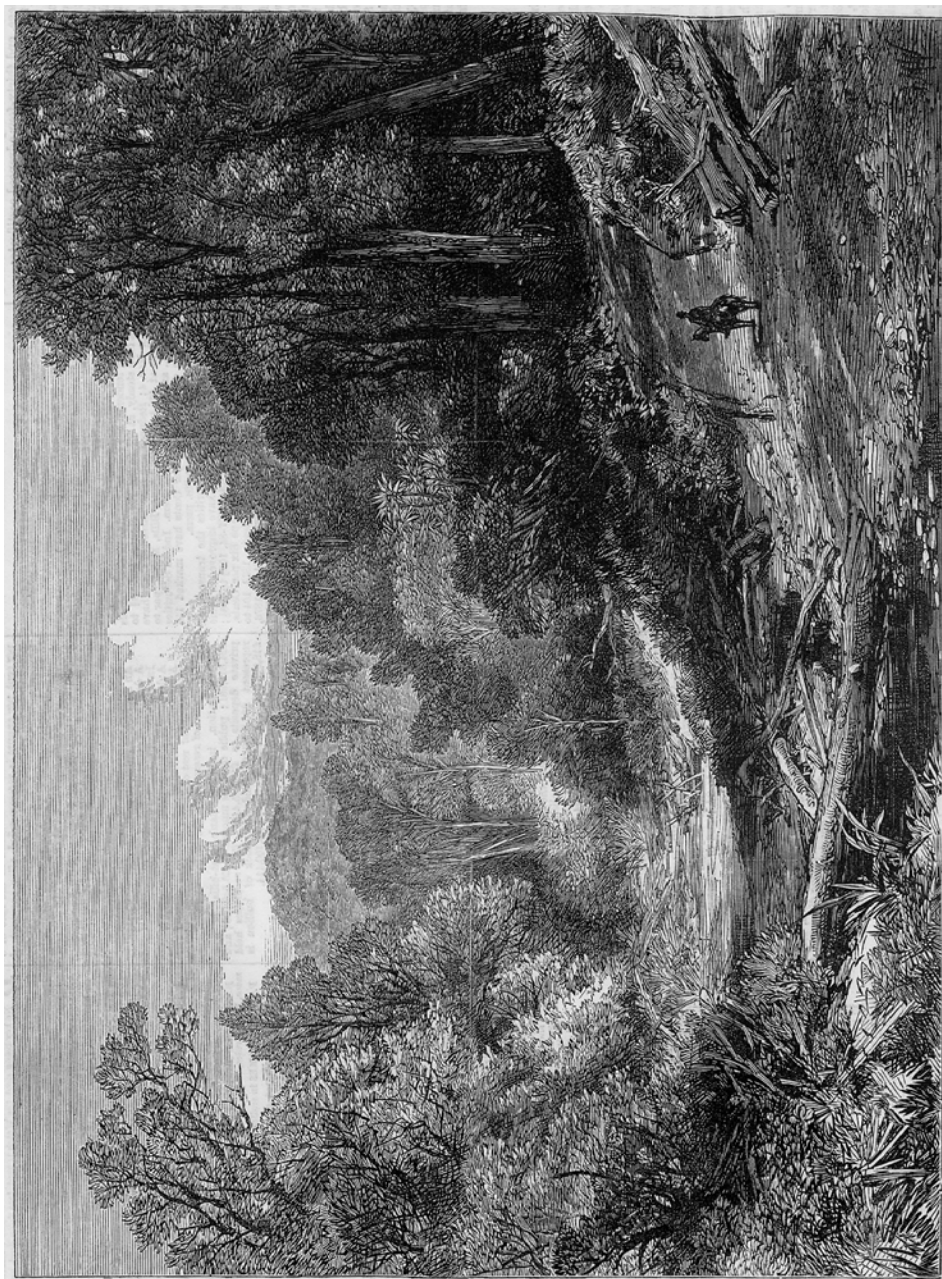
Here is the statement of the Royal Society at the beginning of the volumes of its *Transactions*, about the grounds for accepting material for publication in the 19th century: “The grounds of [the Society’s] choice are, and will continue to be, the importance and singularity of the subjects, or the advantageous manner of treating them, without pretending to answer for the certainty of the facts, or propriety of the reasoning, which must still rest on the judgment of the respective authors.” *We agree – Ed.*

Murray and Gwenda Lister of Ashburton were members of the Arthurs Pass Camp; they sent Gordon Sylvester a new record for *Diplodium alobulum* at Okiwi Bay in May. Murray commented on its small size (+/- 60mm) and that the colony was in several states with mature flowers as well as seed pods (Fig.36). This is a new record and starts to fill in the gap between Rarangi Bay and Banks peninsula, the nearest known locations for the species. ED is 45.01.

Pat Enright pointed out a Scottish website advertising a page from the 23 October 1869 *Illustrated London News*, with pictures of the Wairarapa, one of them showing the Kahurangi Stream, stopping-place for Colenso on his journeys and Type locality for *Nematoceras trilobum*, and a good many other plants besides. As shown in J106, the Kahurangi is a degraded drain now, and it is good to have a glimpse of its former glory. (No, we don't think the tiny chap on the horse is Colenso). The text reads...

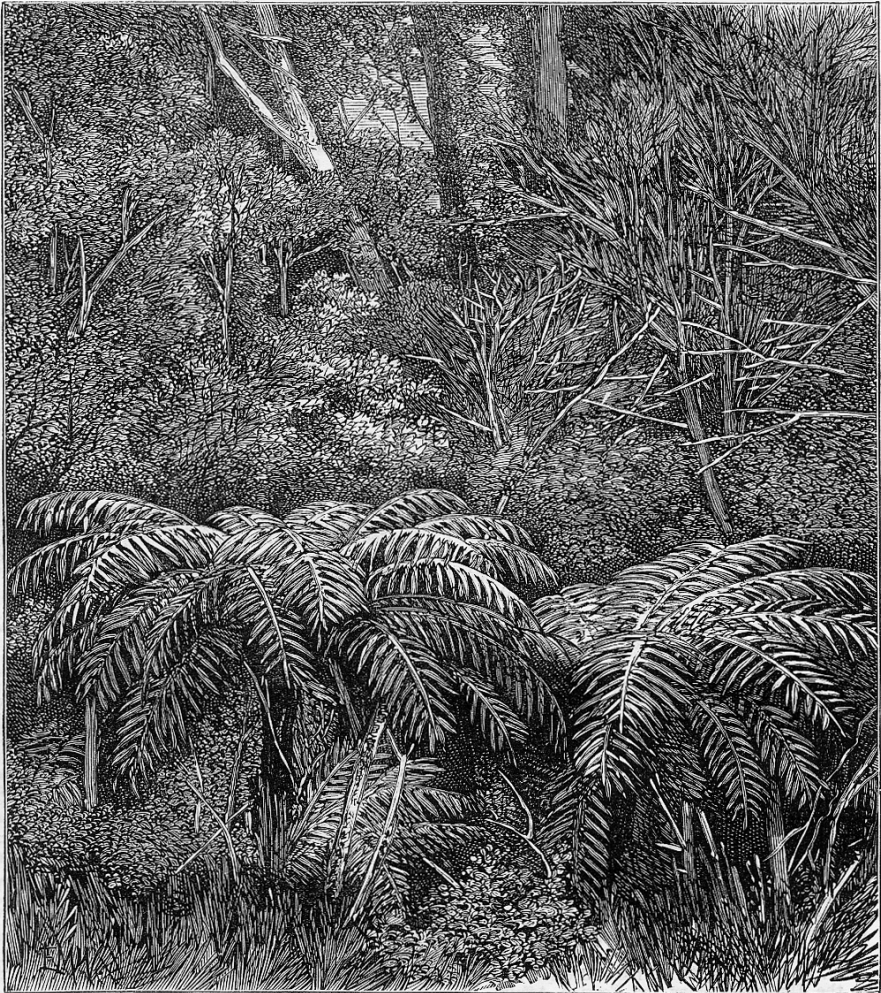
WAIRARAPA, NEW ZEALAND.

The views of New Zealand scenery which we have engraved, from two of the photographs sent us by our correspondents at Wellington, were taken in the Wairarapa Valley, a fine grassy district in the north-east part of that province, extending from the head of Palliser Bay sixty miles inland. The view of the Kauminga creek is characteristic of the bush country, at certain seasons of the year. Wairarapa is one of the most valuable tracts of land in the whole colony for pastoral and agricultural uses; and the province of Wellington, containing, besides this district, those of Wanganui, Matawatu, and Rangitiki, with the Hutt river, and the noble harbour of Port Nicholson, has more abundant elements of permanent prosperity than any other in the Northern Island. Its central situation, commanding the passage of Cook’s Strait between the two principal islands of New Zealand, has caused it to be preferred to Auckland, the former metropolis; and we trust the removal of the seat of Government will be fully justified by the future political harmony of the colony, when its present financial and military difficulties shall have been overcome. If a good understanding prevail between Wellington, the leader of the northern provinces, and Canterbury, which has some claims to a corresponding social eminence among those of the neighbouring island, the remaining six or seven provinces of New Zealand must suppress all local and sectional jealousies and combine their efforts in a closer union for the common welfare.



KAHUMINGI CREEK, WAIRARAPA.

The Kahumingi stream crossing, as it was in Colenso's day, and where he discovered *Nematoceras trilobum*. From *The Illustrated London News*, 23 October 1869.



IN THE BUSH, WAIRARAPA.

This is how the “Seventy Mile Bush” must have looked in Colenso’s day.

NZNOG Historical Series: #16: Colenso to Balfour

Orchid extracts from William Colenso’s letters to his collector David Balfour: \$10 in NZ

#17: Orchids in Black & White: Fifty important monochrome halfplate photographs of NZ native orchids by HB Matthews. \$22 in NZ from Brian Tyler, bandj.tyler@xtra.co.nz.

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(republishing the 1999 *Nature guide* and the
2005 *Field guide* on one CD: \$10)

and from NOSSA (editor R. Bates)

Western Australian Orchids

and

Orchids of South Australia

Through the generosity of the Native Orchid Society of South Australia (NOSSA) NZNOG members pay only the cost, plus \$5 to NOSSA: send \$15 for the DVD of these two, to

Brian Tyler bandj.tyler@xtra.co.nz.

Researchers led by Xiang Lin, University of Hong Kong, have reported a protective effect of *Dendrobium officinale* polysaccharides on experimental Sjogren's Syndrome. Sjogren's syndrome (SS) is a chronic inflammation which results in xerostomia (dry mouth) and xerophthalmia (dry eyes). Discovery of a family of water-specific membrane channel proteins, the aquaporins, provides an interesting molecular mechanism of water permeability and transportation which were found abnormal in tissues of SS patients. The team established an autoallergic mouse model, and a human salivary gland cell culture. Polysaccharides of *Dendrobium officinale* (DP) were

administered as treatment and reversed the pathological changes in both the animal and cell model. Thus, DP may be a promising candidate for the treatment of SS. [Lin, Xiang; Sze, Stephen Cho-Wing; Tong, Yao; Zhang, Zhangjin; Feng, Yibin; Chen, Jian ping; Ng, Tzi Bun; Lin, Xiao; Shaw, PC; and Zhang, Kalin Yanbo (2010) "Protective Effect of *Dendrobium officinale* Polysaccharides on Experimental Sjogren's Syndrome," *Journal of Complementary and Integrative Medicine*: Vol. 7: Iss. 1, Article 14. DOI: 10.2202/1553-3840.1342. Available at: <http://www.bepress.com/jcim/vol7/iss1/14>].

Your editor had only a light tourist camera when (from the car) he spotted *Serapius cordillera* on a roadside verge in northern Spain in May (Fig.37). It is an uncommon southern European orchid, which has been found rarely in England—the last record being 3 plants in a Kent chalkpit in 1997. It has a large labellum protected by a hood formed by the other 5 tepals. The Greek Dioscorides named the genus in 50-70 A.D.; Daniel Solander thought our *Thelymitra longifolia* was related when he found it here in 1769, and in his manuscript called the *Thelymitra* "Serapius regularis", the regular-tepal Serapius.

Anne Fraser's MSc thesis, "Population Ecology of *Thelymitra matthewsii* Cheeseman Orchidaceae, in Northern New Zealand" can be read at <http://adt.waikato.ac.nz/uploads/approved/adt-uow20080313.161353/public/02whole.pdf>.

The European slipper orchid (*Cypripedium calceolus*) is so rare in England that it is now protected by Police at one site. A newspaper clipping sent by H. Waite described how the Lancashire Constabulary had planned to protect its golf course site during this year's flowering: it is circled with crime scene tape, and will be observed by CCTV cameras to keep a 24-hour watch. PC Thomas said, "People are often overcome with emotion at the sight". Collectors will pay up to 5000 pounds for cuttings, so the risk is very real.

Aussie notes: David McConachie

At the 5 February 2010 meeting of ANOS Victoria, Dr. Mark Clements from the Centre for Plant Biodiversity Research and Australian National Herbarium, Canberra spoke on “An Update on the Genus *Pterostylis*” during which he explained, in depth, various aspects of taxonomy and the reasons behind the proposed name changes.

A modified version of the abstract of my paper summarising the major points.

by Mark Clements [*ANOS (Vic) Bulletin March 2010 Vol. 42 No.8*].

The Commonwealth heads of Herbaria chose not to accept or adopt the proposed reclassification of Jones and Clements (2002) on the basis that there was not supporting DNA data published with this work, and because they argued there was not need to recognise more than one genus as this is how it historically had been treated. Comparison of the published results of other closely related orchids such as genera within the Spiranthinae or Goodyerinae reveals that the interpretation of data and classification of these orchids is very inconsistent. A new study to evaluate the monophyly of subtribe Pterostylidinae (Cranichideae: Orchidaceae), using DNA sequences from nuclear ribosomal ITS region (256 taxa) and plastid matK (subset of 34 taxa), was therefore undertaken.

Results of these analyses plus morphological data provide strong evidence for understanding the evolutionary history and relationships of the Pterostylidinae and provides the basis for a re-classification. There is strong support for the monophyly of Pterostylidinae and for recognition of three major groups therein, groups (= clades) A, B and C. These three groups are supported by and correlate with possession of unique morphological characters. Clade A comprises two major, very strongly supported groups on comparably long branches. One branch contains species of *Speculantha* and *Petrorchis* and the other contains several

genera clustered into a single large unresolved polytomy containing seven lineages. Here, there is no support for continued recognition of *Taurantha*, *Crangonorchis*, *Linguella* and *Eremorchis* all of which are embedded within the broader strongly supported monophyletic *Diplodium*. Clade B contain *Pterostylis* s.s. and is possibly derived from a hybrid event between elements of the other clades. Clade C contains the genera *Oligochaetochilus*, *Hymenochilus*, *Plumatochilos*, *Bunochilus*, *Stamnorchis*, *Pharochilum*, *Urochilus* and *Ranorchis*. Whilst group C is clearly monophyletic with very strong molecular support, internally its component parts are morphologically very disparate.

Lack of internal node support for major lineages identified in Clade C is suggestive of a rapid morphological radiation or slow rate of molecular evolution of the group at or near its inception. These results provide a basis for a greater understanding of Pterostylidinae as a whole but in particular the possible evolutionary history of species in the subtribe, as well as providing new sights in to relationships between species. The results will serve as a basis for reconsideration of the classification of the group as proposed by Jones and Clements.

Acknowledgements: Australian Orchid Foundation, David Jones, Kirsten Cowley, Siobhan Duffy, Tara Hopley, Anna Monro, CSIRO, Brian Molloy, New Zealand, Chris French, John Riley and other associate collectors.

The Column: Eric Scanlen

1. Stewart Island orchid field trip November 2010

Anyone wishing to spend six night on Stewart Island, 11 Nov to 17 Nov. 2010 for a native orchid field trip, please register with the writer, Eric Scanlen at 4 Sunny Park Ave, Papakura 2113, with a deposit of \$50, before 1 September. Email eascanlen@ihug.co.nz. Member Peter Tait, of *Sails, Guided Walks and Tours*, knows the most suitable orchid sites, especially Ulva Island and is organised to take or send us to selected sites as part of his business. Water taxis are available to a range of sites which will be outlined on participant's acceptance sheets. The first ten to register will be included. Gloria and I are already in.

Two Piper Cherokee aircraft from Stewart Island Flights are being chartered from Invercargill to Oban at \$85 each, one way, for a full load of five passengers and the same for the return trip. Luggage should be essentials only but any overweight for take-off load will be brought over on a subsequent flight. Participants to find their own way to Invercargill airport for departure at 12:20 pm on 11/11/10 and will be returned there by 9:00 am on 17/11/10. Flights will be held for a reasonable time in case of late arrival of connecting transport.

Accommodation has been pencilled in at Pania Lodge for eight at \$40 per night each plus one on a truckle bed and one mattress on the floor. Pania Lodge has three bedrooms - one double room, one twin room, one bunk room (sleeps 4), plus spare mattresses. All linen and condiments (i.e. flour, sugar, tea) are supplied. There is gas & electric cooking, and radiator central heating. There is a microwave, fridge, freezer, automatic washing machine, drier, telephone, TV, video, radio and CD player.

Provisions will be at Stewart Island as per healthy menu which will be sent to registered participants and food costs will be divided proportionally upon completion of the field trip. Volunteer cooks please. Arrangements will be available for some special dietary needs.

What are we going to see? The most comprehensive list is Peter Tait's from his website www.sailsashore.co.nz. It includes Hugh Wilson's 30 [1] from 1982 and Peter de Lange's extra seven [2] from 2000 plus seven more of Peter Tait's. Some orchid names from the early lists have been interpreted and Hugh's flowering dates are appended. Don't expect to see them all but note that November is the best month. Nine taxa of particular interest, for this field trip are in bold type.

Acianthus aff. *sinclairii* atypical roundish leaf with crenate margins. Too late, in April.

Aporostylis bifolia abundant, low level to subalpine; leaves often brown blotched. Nov – Jan.

Caladenia chlorostyla

C. minor

Caladenia aff. *variegata* low level to montane in manuka. Two rows of disc calli. Nov – Feb.

Chiloglottis cornuta Common but only the yellow-green flower in Hugh's list. Nov – March.

Drymoanthus adversus on coastal and low level trees. November.

D. flavus

Earina autumnalis Feb – May.

E. mucronata Late Oct – Dec.

E. aestivalis.

Gastrodia cunninghamii. Late Dec – Jan.

G. "long "column". February.

G. "long column black"

G. minor. Jan – Feb.

Ichthyostomum pygmaeum rare & local, coastal trees and rocks. Dec – Jan.

Microtis oligantha. February.

M. unifolia Feb – March

M. "B"

Nematoceras acuminatum with acuminate leaf but an atypical droop snoot dorsal sepal. Dec – March.

N. iridescens

N. macranthum agg. flower ±level with leaf. Oct – Dec.

N. orbiculatum

N. aff. rivularis dorsal sepal long, acuminate and drooping; very long scape. Sept.

Prasophyllum colensoi may include other forms. Montane to subalpine. Dec – April.

Pterostylis auriculata

Pt. australis including some bizarre forms with ribbed, almost dentate leaves like *Pt. micromega*

Pt. banksii

Pterostylis "Bluff" outstretched lateral sepals. Nov – Jan.

Pterostylis montana holotype from here; *Pt. aff. montana* forms also likely. Nov – Jan.

Pt. paludosa

Pt. "slender" common, low level, shorter leaves than *Pt. graminea*. Nov – Jan.

Pt. venosa Mt Angle & Little Mt Angle, subalpine, too late in January.

Singularlybas oblongus, round labellum opening, may include *S. "aestivalis"* Oct – Dec.

Stegostyla lyallii agg. Four rows of disc calli, 1-2 flowers rarely more! December.

Thelymitra cyanea abundant low level to subalpine, white or yellow centres. Nov – Dec.

T. formosa

T. hatchii no mention of fimbria colour. Nov – Feb.

T. intermedia

T. longifolia pray for a hot sunny day. Nov – Feb.

T. pulchella shown with upstanding column arms and unstriped labellum. Oct – Dec.

Townsonia deflexa Uncommon. January – March.

Waireia stenopetala common, montane and subalpine. Nov – March.

Winika cunninghamii Jan – Feb.

References

1 Wilson, Hugh D. *Stewart Island Plants* 1982

2 de Lange, Peter, *Stewart Id. and Waikato orchids*, Journal 74:13, March 2000.

2. *Thelymitra* "stag-horn"

Kevin Matthews sent the Column a pic of *Thelymitra pulchella* "stag-horn" (Fig. 38) from Peria ER5, 3 Nov 2007. The "stag-horn" tag referred to the short yellow fimbria on erect, single column arms per side, not at all common in the far north. The peduncle and

ovary are purple with green tinges, flowers were striped blue-mauve but it didn't get published then. The Column filed it as another of the unusual *T. pulchella* agg. for which Kevin is justly renowned. Recently, that filed pic stirred some dusty corners of the Column's

forgetory. The more he looked, the more similar taxa began to figuratively jump out of the records.

Steve Reekie, for instance, sent that bluer flower (**Fig. 39**) than Kevin's, with erect, single column arms per side but with short white fimbria and a green peduncle (J104:28,32) from Cave Creek near Westport, 23 Dec of the same year. Note that *T.*

pulchella agg. usually have two column arms per column wing. The Column called it *T. fimbriata* Col. because it had fimbria on the erect column arms but he did not connect it then with Kevin's *T.* "stag-horn" from some 777km north, at Peria.

Graham Dickson's *Thelymitra purpureo-fusca* Col. from ER68, the Lammermoor Range near Lawrence, had flowers indistinguishable from *T. longifolia* into which species, several taxonomists have lumped it, despite its diminutive stature, all purple stem, buds & bracts, growing in clumps and flowering a month or two later. At the same time in the Lammermoors, Graham also found *T. cyanea* with green tinged purple stem and a *T. purpureo-fusca* look-alike (J113:29.32) but only when in bud. It was a blue striped *T. pulchella* agg. (**Fig. 40**) which the Column — the model of consistency.— also called *T. fimbriata* Col. because of the short yellow fimbria on the erect, single column arms. It was another *T.* "stag-horn", wasn't it? All three were in flower on 14 Jan. 2009.

Jeremy Rolfe's detailed pix (**Figs. 41 & 42**) of erect, single column arms per side, with short yellow fimbria on their ends, dark blue striped, blue and white flowers on green stems tinged with purple, at Wi Tako Reserve, Upper Hutt, 16 Dec 2007, definitely tweaked the Columns forgetory strings. Jeremy reported that this was the common form of *T. pulchella* agg. around the Wellington area which means that *T.* "stag-horn" is a successful taxon hereabouts and has been around for a considerable time. But it has distinct similarities with sterile *T. X dentata* which could then be a back-cross between *T.* "stag-horn" and parent *T. cyanea*, couldn't it? So the Column hunted around and did find his

own *T.* "stag-horn" pix hiding in 3-D Realist mounts, from Ian St George's Puffer Track field trip of 5-7 Dec 1997. It too had been pointed out as *T. X dentata* which the Column had never seen so he grabbed some 3-D photos of it, then found to his dismay that it was only an early opening and boring old(?) form of *T. pulchella* (agg.). Which meant that it got only brief mention, in J66:24 before being filed, along with other salvaged pix, in 3-D mounts! See **Fig. 43**, the erect, single column arms per side with short yellow cilia, reinforce what Jeremy had said about it being common around the Wellington area.

Would *T.* "stag-horn" then be the mental type specimen for *T. pulchella* Hook. f. by Wellingtonian orchidologists? If it is, remember that the holotype of *T. pulchella* s.s., bore no fimbria and the species is relatively uncommon even in its northern territory but a dozen and one different fimbria-bearing forms have been reported.

Do not be dismayed! T.F. Cheeseman described *T. pachyphylla* with fimbria on the column arms, in his 1925 Manual, after he had disallowed William Colenso's *T. fimbriata* also with fimbria on the staminodia or column arms. Re *T. pachyphylla*, Cheeseman wrote, amongst other things, "lateral lobes [column arms] ...erect or pointing forwards" so it seems he had lumped erect column-armed *T.* "stag-horn" with other forms of the *T.*

pulchella agg. from Nelson and Westport (W. Townson) and Kumara (J. W. Brame). Moore & Edgar, in the 1970 Flora II, lumped *T. pachyphylla*, *T. fimbriata* and others back into *T. pulchella*, at a time when lumping was "de rigueur" as Dan Hatch (pers. comm.) once remarked.

So what is this distinctive *T.* "stag-horn" with single, erect column arms each side of the column, adorned with short fimbria at their ends? There are some clear clues in the above. Undoubtedly it is a *T. pulchella* agg. (J112:5) going by the blue striped flowers, with the occasional alba-form, and fimbria on the column arms. Molloy & Dawson [1, 2] found that *T. pulchella* (2n=66 chromosomes) was an amphidiploid hybrid of *T. cyanea* (2n=40)

and *T. longifolia* (2n=26). Initial sterile crosses (2n=33) could well have been pollinated by the black *Thelymitra* *Thrips* which turn up in many, if not all, *Thelymitra* species from north to south, often carrying a few grains of friable pollen. But the doubling of chromosomes, to achieve viable amphidiploids, seems to be a unique *Thelymitra* trait amongst NZ orchids. The plethora of forms in *T. pulchella* agg. suggests that crosses have occurred numerous times between different forms of the parents. *T. cyanea* usually has yellow column arms, sometimes white, hence the usual yellow fimbria, sometimes white, on *T.* “stag-horn”. There are other *T. cyanea* variations such as wide or narrow tepals, purple or green peduncle, curled or just curved column arms either bifid at the tips or rarely acuminate as are some in the far north. The numerous forms of endemic *T. longifolia* agg. indicate ancient lineage from some as yet un-determined Aussie parent but *T.* “Whakapapa” (high subalpine, diminutive, very late flowering), *T. purpureo-fusca* (diminutive, clump forming, purple peduncle, late flowering) and *T. aff. longifolia* (up to 20 scented flowers opening easily) are just three which are particularly notable.

If *T.* “stag-horn” were an hybrid of purple stemmed *T. purpureo-fusca* and one or other of the *T. cyanea* forms, one could expect traits from both parents such as purple to purple-green peduncle, depending on the local form of *T. cyanea*, and later flowering than the general run of *T. pulchella* agg. The Lammermoor putative parents, *T. purpureo-fusca* and *T. cyanea*, have purple or green tinged purple stems so *T.* “stag-horn”’s, purple stems there are to be expected. Not surprisingly, Graham did not report any other form of *T. longifolia* from that ±920m altitude. In fact the commoner forms of *T. longifolia* don’t normally occur as high as that, especially at this southerly latitude. With *T. purpureo-fusca* now having been reported from the Lammermoors to the Hunuas, (J113:29) it is entirely possible that it also occurs around Peria, to account for Kevin’s *T.*

“stag-horn” specimen — which is where we came in.

Does anyone have a chromosome count on *T. purpureo-fusca* please? and do all the varied forms of *T. cyanea* have 2n=40 chromosomes? What is the chromosome count for *T.* “stag-horn”?

Do please keep an eye peeled for *T.* “stag-horn” and its putative parents *T. purpureo-fusca* and *T. cyanea*. If and when you find them, do please get the info to Editor along with your best photos of them.

Reference

1. Molloy, B.P.J., & Dawson M.I., 1998, Speciation in *Thelymitra* (Orchidaceae) by natural hybridism and amphidiploidy. *Miscellaneous Series, Royal Society of New Zealand* 48, Wellington, 103-113.
2. Dawson, M.I., Chromosomes of New Zealand native orchids ~ Part 1 of 2, NZNOJ 108:16.

Illustrations

Fig. 38; *Thelymitra* “stag-horn” from Peria, 3 Nov 2007 by Kevin Matthews. Note mauve colour, green tinged purple stem, erect single column arms per side with short yellow fimbria at the ends.

Fig. 39; *T.* “stag-horn” from Cave Creek, 23 Dec 2007 by Steve Reekie. Note blue flowers, erect single column arms with short white cilia at their ends

Fig. 40; *T.* “stag-horn” from the Lammermoors by Graham Dickson, 14 Jan 2009. Note purple stem, blue flowers. erect single column arms with short yellow fimbria at the ends.

Fig. 41; Close-up frontal view of erect single column arms with short yellow fimbria at the ends of *T.* “stag-horn” from Wi Tako Reserve, 16 Dec 2009 by Jeremy Rolfe.

Fig. 42; Rear view of erect column arms from Wi Tako Reserve by Jeremy Rolfe, 16 Dec 2009.

Fig. 43; Blue *T.* “stag-horn” still opening, from the Puffer Track 6 Dec 1997 by the Column. Note erect column arms with short yellow fimbria at the ends.

Illustrated guide to New Zealand sun orchids, *Thelymitra* (Orchidaceae)

by Jeremy Rolfe and Peter de Lange

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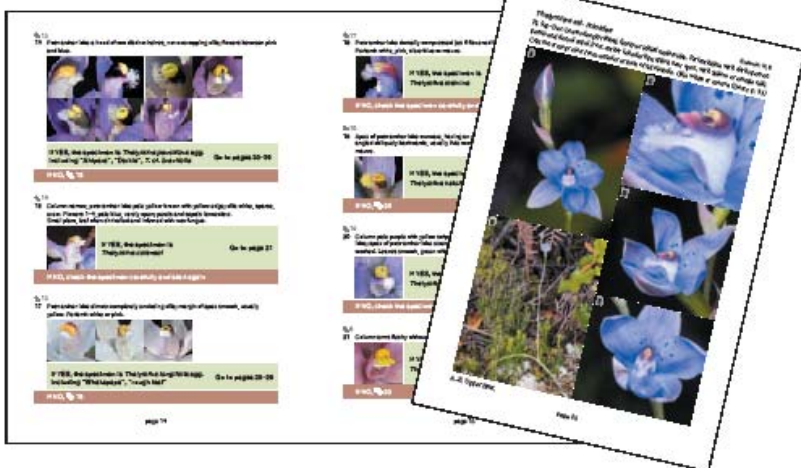


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