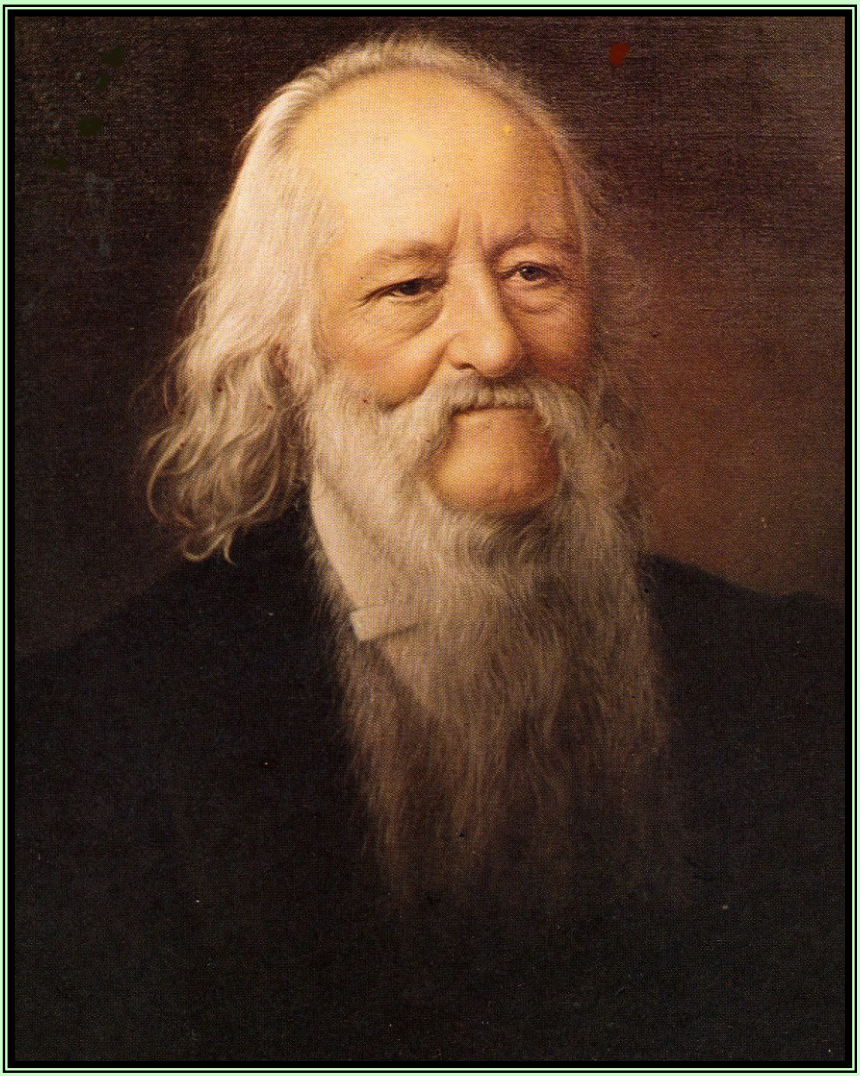
The New Zealand Native Orchid Journal



William Colenso 1811–1899

No.122, November 2011: Bicentennial issue

Thelymitra nervosa habitat, flowers and column—see page 8 *et seq.*

Contents: No. 122

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Editorial: Ian St George

Colenso's orchids

William Colenso, printer, missionary, botanist, politician, writer, naturalist, ethnologist, linguist—a nineteenth century polymath—will be 200 years old on 17 November. He was a fastidious and almost obsessional worker who managed to get offside with almost everybody, and, to an extent, that difficulty in his personality has led lesser men to criticise his work rather than his person.

This was a giant of New Zealand's colonial history, one who has left a huge legacy in his many fields of expertise. Almost 100 species bear the epithet "colensoi", two orchids among them.

He learned his botany from Allan Cunningham, NSW Colonial Botanist, who visited the Bay of Islands in 1838, and JD Hooker in 1841. He travelled widely in the North Island, but as a busy missionary printer could do little more than collect plants for others: he sent his first 600 specimens to WJ Hooker at Kew in 1842. The relationship between the colonial collectors and the "Home" experts is explored sensitively by Endersby (http://www.jimendersby.com/PDF/Endersby_No_Herbarium.pdf): suffice to say, Colenso, with growing botanical confidence, suggested names for his new taxa, but was almost always overridden by WJ Hooker, who either lumped them with named species (usually wrongly, at least in the case of orchids), shelved them for examination by JD Hooker's return from his travels, or named them himself.

Colenso often expressed frustration at such treatment, but continued to send specimens to Kew—over 6000 of them (http://blog.tepapa.govt.nz/2009/03/26/colensos-collections/)—from his missionary journeys from Hawke's Bay around his huge parish in the southern half of the North Island.

In 1852 he was dismissed from the church, and in the ensuing years became a land speculator, public servant, educationalist, local and national politician (he was Napier's first Member of the House of Representatives, and sat in both the Auckland and Wellington parliaments). In 1878 he retired as School Inspector and returned to botany—spending weeks each year in the Bush districts, staying at local hotels, collecting specimens in the Ruahine foothills.

Now he was confident enough to begin naming his own taxa, and there followed a great number of botanical papers to the *Transactions*, describing his finds (and those of others who increasingly recognised his authority and sent him specimens).

He was affronted when James Hector, editor of the *Trans.*, rejected one of his papers; he responded with tolerance to Thomas Cheeseman (no orchidologist) who lumped five of his *Pterostylis* species, and he was probably unaware that his good friend JD Hooker had expressed the wish to Hector that Colenso had never put pen to paper.

And what do we think of his botany now? Patrick Brownsey, fern expert at Te Papa, says , "Colenso had an eye for variation and was a good field botanist. Unfortunately, however, I think he was very definitely a splitter, didn't have a good understanding of the modern concept of a species, and described every minor variant that he found." (*Brownsey P: pers. comm. 1 July 2009*).

To an extent that could also be said of Colenso's orchids, and in the past it has been. Modern taxonomy, however, has reinstated many of Colenso's species lumped by subsequent botanists, and when we look at the lists of orchids associated with William Colenso we can only be amazed.

Hooker's orchids found by Colenso	**Sites (Flora N-Z & Handbook)**
Sarcochilus adversus	Bay of Is. Wairarapa
Prasophyllum colensoi	E. Coast + interior
P. tunicatum	E. Coast
P. pumilum	E. Coast
P. nudum	Port Nicholson + Taupo Lake; E. Coast, clay hills, Te Hawara,
Spiranthes novae-zelandiae	Northern Island
Thelymitra imberbis	Bay of Islands etc.
T. pulchella	N. and Middle Is.
T. pauciflora (T. colensoi)	N. Is.
Cyrtostylis oblonga	Moist woods and shady banks, N. Is.
C. rotundifolia	Raukawa Ridge, Hawkes Bay + Cape Kidnapper; E. Coast
C. macrophylla	N. Is. E. Coast (Incl in *C. rotundifolia*)
Adenochilus gracilis	B ay of Plenty
Pterostylis graminea	E. Coast
P. micromega	E. Coast+ bogs near Wairarapa
P. foliata	E. Coast + Ruahine mountains
P. trullifolia	Bay of Is.
Nematoceras oblonga	N. Is. Mountains of interior
N. macrantha	Wet woods, bogs, E. Coast
N. triloba	E. Coast + interior; Cape Palliser, Cape Titiokura etc
N. rotundifolia	Clay banks, Manawatu

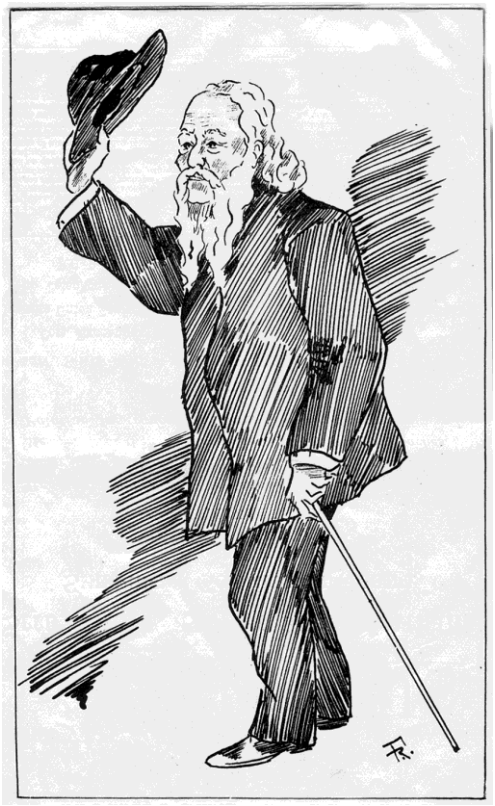
Orchids described by Colenso	Found by	Sites
B. ichthyostomum	H. Hill	Forest near Kumeroa, R. Manawatu, County of Waipawa
B. tuberculatum	A. Hamilton	Forest near Petane, Hawkes Bay; Woods near Palmerston
Caladenia macrophylla	A. Olsen	Ruahine mountain range, E. side
C. variegata	WC	Top hill near Norsewood
Corysanthes hypogaea	WC	Norsewood
C. orbiculata	H. Suter	Black Bush Creek, Mt Cook
C. papillosa	Balfour	Hawkes Bay and Glenross
Dendrobium lessonii	WC	Norsewood, Cape Turakirae
Earina alba	WC	Banks of R. Maungatawhaiwi
E. quadrilobata	WC A.Hamilton	Norsewood Heights Mt Kaweka
Gastrodia leucopetala	WC	Norsewood, Dannevirke
Microtis longifolia	WC	Norsewood, Dannevirke
M. papillosa	CP Winkel-mann	Kaipara Heads
Orthoceras caput-serpentis	H. Hill	Near R. Moawhango, E. Taupo
O. rubrum	WC	Hiils between Napier and Mohaka
Prasophyllum pauciflorum	WC	West of Napier
P. variegatum	Balfour	Glenross
Pterostylis auriculata	? Petrie	Fortrose
P. emarginata	WC Winkelmann SW Hardy	Ruahines Te Aute Hampden
P. patens	WC Balfour	Norsewood Glenross
P. speciosa	H.Hill	Near Mt Tongariro, E. Taupo
P. subsimilis	A. Olsen	E. side Ruahines
P. polyphylla	H. Hill	Near Mt Tongariro, E. Taupo
P. rubella	RW Rawson	Whangaroa, Manganui

P. trifolia	A. Olsen	E. side Ruahines
P. tristis	H. Hill	Waipawa
P. venosa	A. Olsen	E. side Ruahines
Sarcochilus breviscapa	WC Balfour	70 Mile Bush Glenross
Thelymitra alba	Balfour	Glenross
T. cornuta	Winkelmann	Pouto Point, N. Kaipara
T. nemoralis	WC	70 Mile Bush
T. purpureofusca	WC	70 Mile Bush
T. formosa	WC	Waipawa
T. concinna	A. Hamilton	R. Mohaka
T. nervosa	Collie	Ruapehu
T. fimbriata	? Petrie	Fortrose

The type locality: Ian St George

Ngauruhoe : Thelymitra nervosa Col. & T. decora Cheesem.

In 1887 William Colenso described *Thelymitra nervosa* from plants found in the "high lands at the base of Mount Ruapehu (Tongariro range), whence specimens were brought by a visitor in 1879" [1]. Molloy has pointed out that the type specimen has a column identical with that of *T. decora*, described by Cheeseman in 1906. Scanlen has used the name *T. nervosa* for plants whose petals have no spots, also finding differences in the post-anther lobe of the columns he has examined.



William Colenso in 1884: sketched by FR Rayner.

I have examined herbarium specimens of *T. decora* and in drying the spots have disappeared. Colenso was describing ten-year-old specimens—any spots, like all colour, would have faded to reveal the underlying venation (hence "nervosa").

Curiously, Colenso had seen the plant before. He had collected his specimen No. 1934 from a river bank near Eparaima (was WNW of Wallingford) and sent it to Kew in 1848. There is also a specimen in Herb. Colenso at Te Papa labelled 1934, identified by Cheeseman as *T. longifolia*, but actually *T. nervosa*.

Colenso's description [1]

***T. nervosa*, sp. nov.**

Rather slender, straight, erect, 9–10 inches high; a white glossy sheath at base, 1 inch long, transparent, veined, truncate, margin entire with a long narrow linear mucro; 2 distant sheathing cauline bracts each 1½ inches long, acute, adpressed. Leaf single, 6 inches long, 3 lines wide, linear-acuminate, submembranaceous. Scape very slender almost wiry at top, bearing 3 distant flowers; floral bracts coloured, very broad, ½ inch long, acuminate with a long mucro, veined, minutely papillose on tips at outside, the upper flower having 2 bracts opposite, the inner one much smaller; pedicels slender, ¼ inch long. Perianth purple, 1 inch diameter, spreading, all segments much veined, veins branching; dorsal sepal oblong apiculate; lateral sepals ovate-acuminate apiculate; lateral petals subobovate apiculate; labellum broadly oblong-

lanceolate, obtuse; column black-purple above, largely bifid, each lobe 1-notched, incurved; the two appendages each on a long slender arm arising from below as high as the column; largely plumose at top in a globular ball; hairs very flexuous, sub-moniliform, twisted, their tips obtuse and rounded; anther broadly ovate, obtuse, apex below top of column. Ovary lanceolate, ½ inch long, coarsely ribbed.

Hab. High lands base of Mount Ruapehu (Tongariro Range), County of East Taupo; whence specimens were brought by a visitor in 1879, and given to me with some other plants (*sps. nov. supra*).

Obs. This is another small neat-looking species, with large dark-coloured flowers, their segments much veined (as also are their coloured bracts), the lower lobe or labellum being larger than the others. The number of the flowers on a plant vary, usually 3, but in one of my specimens 2, and in another only 1; each of these two plants being also smaller. A striking character is the low branching of its slender staminodiæ or lateral lobes of its column which are also elongated, and their peculiar wavy moniliform hairs. There may be more basal sheaths belonging to the plant, as my specimens do not include their roots or tubers.

Who was the collector?

T. nervosa was one of only three of Colenso's orchid descriptions in which he did not identify the collector [2]. Happily, in a paper written six years afterwards he did identify him as William Collie [3]. He wrote

> … on my remembering a few nice botanical specimens collected at Tongariro by Mr.Collie, and given by him to me (some of them—*Dracophyllum rubrum, Pimelea stylosa*, and *Thelymitra nervosa*—being novelties, were described by me and exhibited here before this society in 1887); and also in looking over my album and noticing therein some of the fine photographic views taken by him of Tongariro and Ruapehu….—I determined on writing a short paper—a résumé of Mr. Collie's repeated visits to that locality: especially, too, as he had done what no one else has done, either before or since—descended into the crater of Tongariro and spent a night within it.

The *Marlborough Express* of 3 November 1900 carried a notice of Collie's death: it is the only biography I can find.

> An old settler who played a not unimportant part in earlier affairs of Blenheim passed away recently at Barral, a township of New South Wales. Though it is nearly thirty years since he left Blenheim, many will remember Mr William Collie. He ... was to the fore in getting the name of our town changed from "Beaver" to Blenheim, urging that it was appropriate that the capital of a province named after one of England's greatest generals should commemorate his most famous victory…. Deceased's own name is perpetuated in "Collie's Hollow," by which the depression running through the centre of the town is known. Mr Collie lived in Blenheim for about 17 years, leaving in 1874 for the North Island. He was at Napier for some time, then went to Auckland, and during the Melbourne Exhibition crossed over to Australia, in search of a climate more suitable for the rheumatic affection from which he suffered.

In Marlborough Collie photographed Ernest Rutherford and his family; his photographs of the White Terraces at Rotomahana are in the Te Papa collections; I can find no record of surviving Tongariro/ Ngauruhoe photographs, although it is clear from Colenso's account [3] that many were taken.

Those "high lands" are a pretty vast area to go looking for an orchid, but there are some clues to refine the search. Collie described his December 1877–January 1878 trip in the *Transactions* [4]. He went up there to photograph the Tongariro (Ngauruhoe) crater:

> "In the pleasant, if sometimes arduous, pursuit of art-photography, the writer camped for weeks close to the main volcanoes and geysers of the colony, enjoying excellent opportunities for search into the origin and working of these marvellous and attractive exhibitions of nature's powers."

He described a night spent in the crater, but he made no mention of plants.

His companion FE Lys later wrote that they camped in the bush between Ruapehu and Ngauruhoe, and also 20 miles away at Mamoe-

nui [5], a stream on the Waiouru-Tokaanu road.

In 1886 Colenso collected another Thelymitra on whose label he wrote, "fl. of Thelymitra. *Dry* Parsonsia hill. Petals broadly ovate obtuse with mucro — sprinkled with blue. Sep. lanc. ovate purple brown. Anther heart shaped. Column dark purple hooded. 2 staminodia longer than col & densely plumose on long appendages. Stigma obtusely trifid, 2-notched in front of gland. Perianth rarely open.... Parsonsia hill. Thelymitra Decr. 10/86". Cheeseman catalogued it as Herb. Colenso 24274A. (Parsonsia Hill is one of Colenso's pet names for places he visited frequently in Central Hawke's Bay, in this case near Matamau). I have examined the specimen in Herb. Colenso and I believe it is *T. nervosa* (though not easy to tell in the dried state).

Colenso did not publish it, perhaps because he regarded it as the same as Collie's plant. Finding it may have jogged his memory of the latter and led to his describing *T. nervosa* formally.

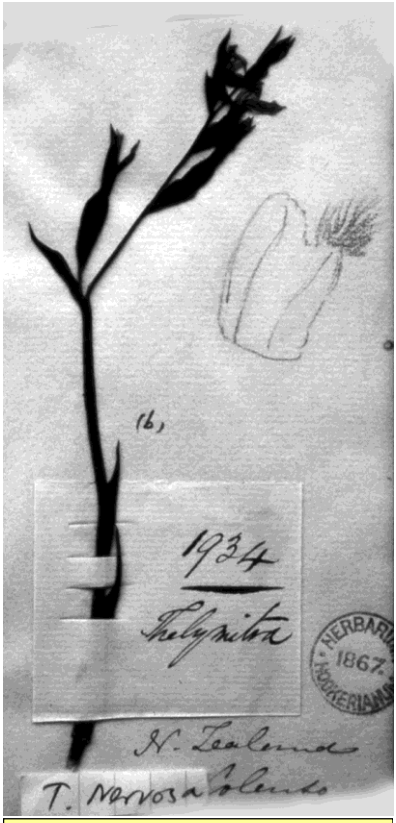
What did later botanists think of it?

Cheeseman wrote that *T. nervosa* was "unknown to me" and went on to describe *T. decora* (with spots on the petals) from Taupo and "hills near the base of (wait for it!) Ngauruhoe, alt. 2000-5000ft". Hatch ignored it completely. Moore wrote that the name *T. nervosa* Col. "remains unresolved".

Brian Molloy (*pers. comm.*) identified *T. nervosa* Col. with *T. decora* Cheesem. by examining the original specimens.

Eric Scanlen has used the name *T. nervosa* for unspotted, and *T. decora* for spotted forms. He (*pers. comm.*) says of spotted forms, "Back of the p.a.l. is almost black and always minutely warted. Unspotted *T. nervosa* … (has) back of the p.a.l. striated not warted." He notes other differences [J109: 29, 36].

I on the other hand think there can be little doubt that *T. nervosa* = *T. decora*. Some unspotted but similar forms may not be *T. nervosa*



A *Thelymitra* sent by Colenso to WJ Hooker in 1848 and since identified as *T. nervosa*

but may represent an undescribed taxon.

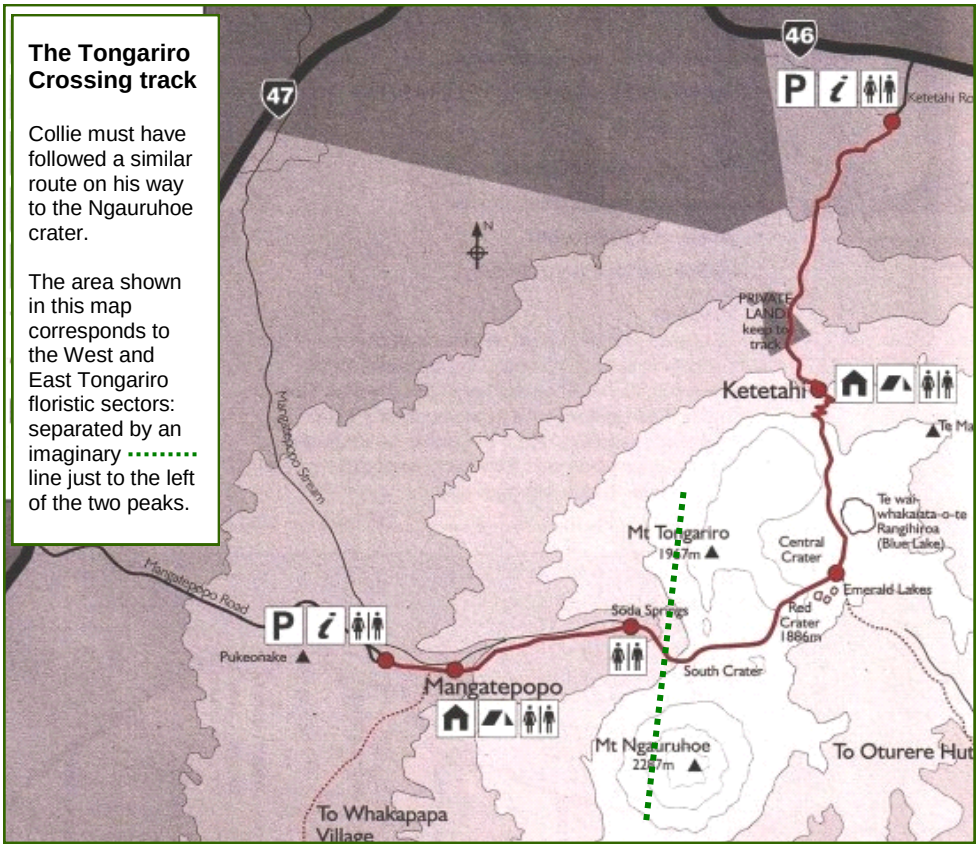
What's there now?

Tony Druce divided the Tongariro National Park into five floristic sectors: East, West and South Ruapehu, and East and West Tongariro (see map preceding page). *Thelymitra decora* appears in his plant lists for all except the South Ruapehu sector – with plant frequencies given as "few" for East Tongariro, and "many" for West Tongariro. The current *Check-list of Indigenous Vascular Plants recorded from Tongariro National Park* equates *T. decora* with *T. nervosa* and repeats that information [6].

The Tongariro Crossing track

Collie must have followed a similar route on his way to the Ngauruhoe crater.

The area shown in this map corresponds to the West and East Tongariro floristic sectors: separated by an imaginary ····· line just to the left of the two peaks.



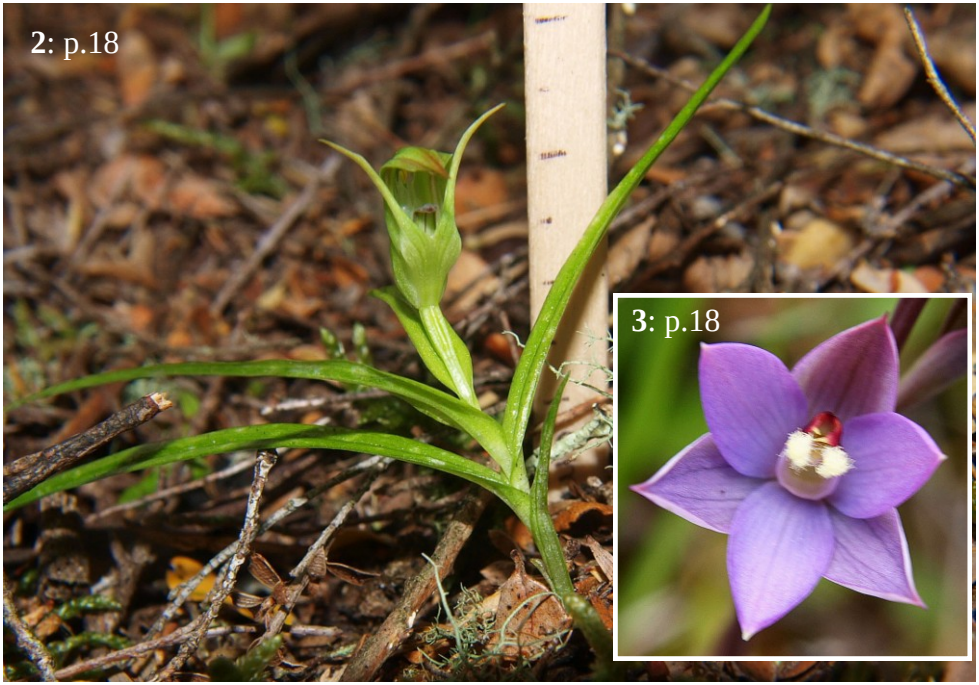
The Tongariro Crossing bears 65,000 visitors annually. We joined them on 4 December 2010, walking in from the Mangatepopo road end—and in the unhappy expectation that we would not be likely to find the orchid in the crater, regretfully abandoned the temptation to ascend the mountain and spend a night there.

T. nervosa had been in full flower at sea level (Queen Charlotte Sound) three weeks earlier, but at the altitude of the Crossing the plants were only in bud. On the way out, however (our passage along Mangatepopo road punctuated by pauses to peruse patches of *Pterostylis patens*) spots of blue led us to plants matching Colenso's description, in full flower. They all had spotted petals **(inside front cover)**.

References

1. Colenso W 1887. On new phænogamic plants of New Zealand. Transactions of the New Zealand Institute 20: 188-211.
2. St George I 2010. Fortrose: *Thelymitra fimbriata* Col. & *Pterostylis auriculata* Col. NZNOJ 121: 6.
3. Colenso W 1893 "More Last Words": being an Appendix to several Papers read here during Past Sessions on the Volcanic Mountain-range of Tongariro and Ruapehu, with its adjoining District. Transactions of the New Zealand Institute 26: 483-498.
4. Collie W 1879. Remarks on Volcanoes and Geysers of New Zealand. Transactions of the New Zealand Institute 12: 418-420.
5. Lys FE 1893. Mr Collie's camera. Letter to the Editor, *Hawke's Bay Herald* 10 June.
6. http://www.nzpcn.org.nz/publications/Tongariro%20National%20Park.pdf.


1: p.18
Photo by Phil Bendle


2: p.18
3: p.18


4: p.19


5


6


7

Original papers

Te Henui walkway

by Gordon Sylvester

Recently (August) while surfing the net looking for illustrations of my favourite orchids, I came across a site claiming to have *Dendrobium kingianum* growing on trees within its area of interest.

Looking over the photographs, sure enough there was a photo of a mature *D. kingianum* with several pseudobulbs attached to a host tree. There were also photographs of several other species of purely New Zealand orchids.

I emailed the contact for the group asking about the *D. kingianum*. It was ultimately confirmed that the plant had been transplanted by an unknown person into the track area. In a further email I was asked to identify another orchid and a photo was supplied **(Fig.1, p.12)**.

While looking further at a map of the site, I noted it was both a prominent stream system and a walkway with some associations with the botanical gardens within the precincts of New Plymouth.

The photograph was sent to several members with more knowledge of the genus than I have, and an identification was made. It was however not to be a new record for the area, as the Group had already identified the species on their website.

I then asked my contacts if we could record their information on our database. The answer was in the affirmative. The contacts were John Dudonski and Phil Bendle, Phil took the photographs using a Sony Cybershot 7.2mb dsc w35 Macro focus 2cm

There is some good orchid photography, check out the website of the friends of the Te Henui Walkway.

The plant list:

Adelopetalum tuberculatum
Corybas cheesemanii
Diplodium alobulum
Dendrobium kingianum
Drymoanthus adversus
Earina aestivalis
Earina autumnalis
Earina mucronata
Gastrodia cunninghamii
Gastrodia "long column"
Ichthyostomum pygmaeum
Microtis unifolia
Nematoceras aff. *rivulare* “Te Henui” (tag named “Taranaki” in the NOG Index)
Nematoceras iridescens
Nematoceras macranthum
Nematoceras papa
Nematoceras trilobus
Orthoceras novae-zeelandiae
Pterostylis banksii
Pterostylis aff. *montana*
Singularybas oblongus
Thelymitra longifolia
Thelymitra pauciflora
Winika cunninghamii

I am informed that there are possibly two species of *Microtis* “and John hasn’t checked but he had noticed two different flowering times, and *Thelymitra* (two unknown species) no ID yet”.

Australian notes: David McConachie

Managing digital photographs

by Robert Lawrence, reprinted from NOSSA vol.35 (7) August 2011.

Since I obtained my first digital camera in 2005 I have photographed many species of plants that I encountered with my work and on orchid excursions with NOSSA. Having thousands of photographs named and filed systematically enables suitable photographs to be found when wanted. Others may be interested in the simple method that I use.

I have a folder that I use for storing all of my plant photographs. It is called „Virtual Herbarium.. This name has the advantage of coming near the end of the alphabet so it is always at the bottom of my list of folders. This makes it easy for me to find photographs if required for a publication, display or competition.

In this folder I have folders labelled by location. I put all of the photographs from a particular location in the one folder. I simply name all of my photographs with the botanic name. If a photograph has more than one plant species of interest I make a copy and label it with the other species. (Sometimes I photograph fauna such as lizards or even arthropods. I make a separate folder for these and label with the common name of the animal and also file these in the folder with the appropriate location. If I find a species name I will use this to label the photographs. Having them in separate folders stops me wondering what sort of plant it was.)

The attached screen is an example of the filing and naming system that I use on my computer.

The advantage of this system is that I automatically have the location information with the photographs. I can search all of my photographs for a particular genus or species. Alternatively, I can find all of the plants photographed at a particular site.

Using Windows 7 makes it very easy to name photographs; one simply selects all of the photographs of a particular species and right-click and rename all at once. Word automatically adds a number for each picture/ file.

For the system to work requires that photographs are labelled and filed as quickly as they are taken. My view is that a photograph is not worth taking if there is no time to label and file it. A high priority has to be given to this task and time needs to be planned following each outing at which photographs are taken.

I would add that this task was more difficult prior to having Windows 7. Each photograph had to be labelled and numbered individually. I did a search of all my files before labelling a species so that I could have a unique number for each file. A helpful trick is to create a new folder and put all of the photographs of one species in it. These can all then be labelled together. One can tab to the next file and paste the botanical name.

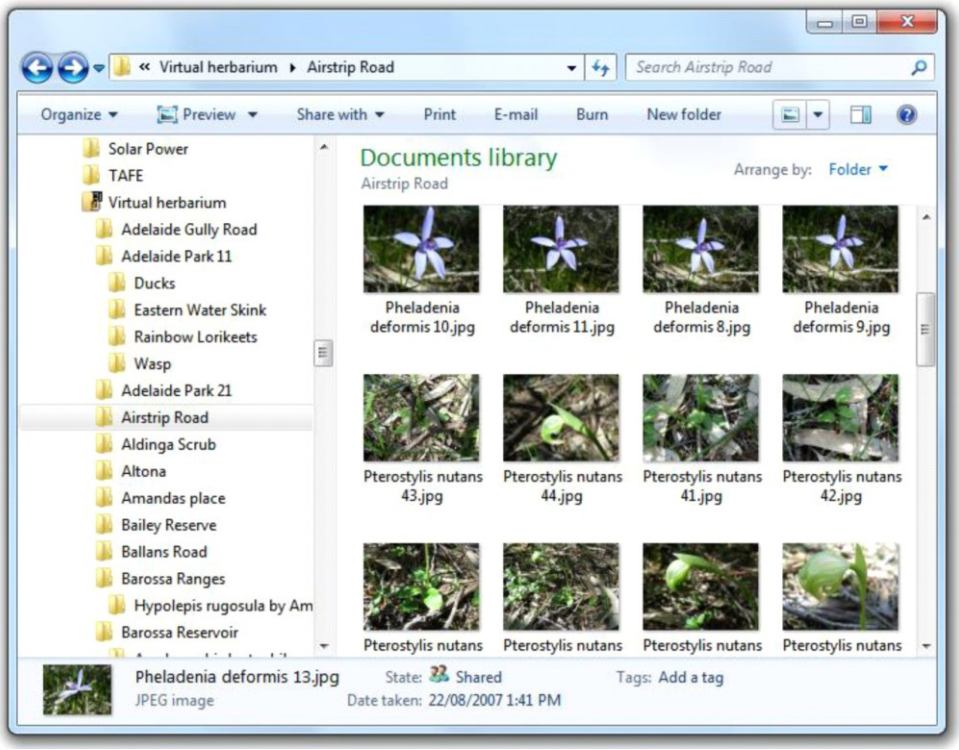
When labelling a species, it is often worth looking through old photographs already labelled.

Often I have had more experience since the older photographs were taken and I recognise that some need to be relabelled. By looking through the photographs I get to see the variation within a species. This helps me learn to identify the plants that I encounter.

It is also a good idea to have a separate folder

for copies of favourite photographs. These might be suitable for printing and framing, for screen savers, wallpapers, publishing or for competition.

Others may have systems that may be useful to others for managing photographs. Please write a description and send it to the Editor of this Journal *(ie, NOSSA Journal—Ed.)*



Notes etc

Peter Tait (Stewart Island) emailed, *"*... a post script on *Pterostylis* "bluff". You might remember I sent you a photo some time ago, as I was unsure of it, never having seen it before and it not appearing in any of my books at all. You wrote back and told me it had been discovered on Bluff hill the previous summer and you thanked me for extending its range to Stewart Island. Well last summer I was honoured to be asked to speak at the memorial service of Joan Kirtlan (nee Leask). The Leasks are a very old Island family. I was somewhat astonished to find the ashes casket covered with *P*. "bluff" blooms. The older Island families used to regard such things as normal. Anyway I asked the four daughters about them, and they told me they had always called them Kaka Beak orchids. Without researching it further I would be very surprised if Dorothy Jenkins had not painted them. Dorothy is long gone, but was well known as a highly talented flower artist. And there I was thinking I had 'discovered' something new."

Mike Lusk sent the curious photograph of the *Thelymitra* with the horned anterior margins of the midlobe, flowering in early December in the Ruahine foothills: another example of the polymorphism of the amphidiploid *T. hatchii* **(Fig. 3, p.18).**

Mike also sent the photograph **(Fig.2)** of a very dimunitive *Pterostylis* of the *P. graminea* group.

A number of new books on William Colenso are advertised in the October 2011 issue of *eColenso*, the newsletter of the Colenso Society. Back issues of *eColenso* are available at http://www.colensostudy.id.au/.

The New Zealand Native Orchid Journal

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Chair: David McConachie, 42 Titiro Moana Rd, Korokoro, Lower Hutt, pleione@orcon.net.nz.

Secretary: Gary Penniall, 637 Otaraoa Rd, RD 43, Waitara, Taranaki gary.p@clear.net.nz.

Treasurer: Judith Tyler, 4 Byrd St, Levin, bandj.tyler@xtra.co.nz: subscription NZ$42 + post overseas.

Books and publications: Brian Tyler, 4 Byrd St, Levin, bandj.tyler@xtra.co.nz.

Webmaster: Michael Pratt, www.nativeorchids.co.nz, Michael@nativeorchids.co.nz.

Editor: Ian St George, 22 Orchard St, Wadestown, Wellington 6012, istge@yahoo.co.nz.

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The Column: *Eric Scanlen*

Defining three subalpine greenhoods

Pterostylis venosa, Pt. trifolia, Pt. humilis and *Pt. confertifolia* have been confused from the word go by the acknowledged experts and informed amateurs alike. The Column set out to clearly define each species and try to determine why the confusion.

***Pterostylis venosa* (Fig. 4)** set off the enigma when William Colenso described it from two dried and pressed specimens from the eastern Ruahines, donated by Mr A. Olsen in 1896 [1]. Only one specimen was dissected but inner details could not be ascertained so were not mentioned in the description. The stem was 2½in. (63.5mm) tall, somewhat short for the species as known today and it had only two leaves where there are usually three. The leaves were "sub-orbicular-oblong, 1¼ in. long, 1 in. wide". Now we expect that it would have had the slender, linear stigma, typical of predominantly insect pollinated plants, where any of its own dislodged pollen falls clear of the stigma, thus largely avoiding self-pollination. The acuminate labellum, with a slightly rounded tip, bends through 90º and its surface is covered with tiny brown hairs, only visible with a x 20 magnifier or microscope. (pers. comm. G. Upson). Its preferred habitat is the high subalpine under beech canopy. This is one of the few Colenso species that T.F. Cheeseman accepted.

***Pterostylis trifolia* (Figs. 5 & 7)** was described by Colenso, just three years later, in 1899, from a single, withered specimen, also from Mr A. Olsen. [1]. This plant was rather tall for the species at 2½ in (63.5mm), leaves were "broadly oblong, 1½ in. long, 1 in. broad, tips very obtuse-rounded …", seeming remarkably close to those of his *Pt. venosa*. Hold it right there: the pix that Vic Vercoe (J73:**28**) and Mike Lusk (J109:**36**) have been sending us, from under high sub-alpine leatherwood scrub, in the southern Ruahines, are shorter and have sub-acute leaves with an acute floral bract having undulate margins on the lower half. Somewhat different wouldn't you say? The similarities between holotypes for *the two species* could explain why Lucy Moore and T.F. Cheeseman considered *Pt. trifolia* to be in fact *Pt. venosa*. The *Pt. trifolia* holotype sounds like a hybrid! Why didn't Colenso mention differences and comparisons between his two species, described only three years apart, as he normally did with his other species? Flower descriptions also match reasonably well; perhaps he had doubled up on one species but didn't realise until too late to withdraw? Not at all, read on.

In 1926 [2] L. Cockayne and H.H. Allan described a short, three leaved greenhood found "On margins of subalpine scrub and in lower subalpine herbfields, about 1,200m altitude, Ruahine Mountains, near Apiti." Their fairly full Latin description has been word-by-word translated from the Latin by Mark Moorhouse with syntax construed by the Column, as follows:—

"Pterostylis confertifolia Allan sp. nov. Terrestrial herb ±7cm tall; *stem* erect and *tuber* pea-shaped ±7mm diam. *Leaves* crowded, clasping the stem, the lower ones scarious, scale-like and obtuse, the upper ones, usually three, erect to spreading, pale green. Somewhat thick, but thin when dry. *Leaves* 3-5cm long, 1.5-2cm broad, elliptic to ovate, obtuse, *veins* indistinctly netted, *margins* somewhat incurved, bases sheathing, broad, off-white and narrowing. *Flower* solitary, green with red *veins*, barely overtopping the leaf and rising when in seed. *Flower* ±2cm long, not including obovoid *ovary* ±1.5cm long. *Galea* is erect for ±12mm then curved, ending abruptly in a short point. *Lateral petals*,

lower part, nearly all on one side of the mid-rib, linear-oblong in upper part, falcate, acute. *Lateral sepals* fused for ±8mm then in two lobes ±1.2cm long. rising erect and acuminate. *Labellum* thickish, dark brick-red, linear-oblong, margins very finely serrated, with an elongated groove, tip minutely notched, narrow, somewhat protruding. *Appendage* curved with two long points and ornamented with short, moderately broad filaments. *Column* slender, helmet part evenly erect, lateral lobes parallel, with upper lobes broadly triangular with short acuminate points; lower lobes broad-oblong and obtuse and clothed in minute felt-like hairs." This sounds very much like *Pt. trifolia* Col. Even to the unhelpful lack of undulate margins on the floral bract, obtuse leaves and that which Colenso missed, *Pt. venosa*'s fine hairs on the labellum.

Why would H.H. Allan re-describe an orchid so similar to one already described by Colenso but 27 years earlier? Possibly the fact that T.F. Cheeseman had long since disallowed *Pt. trifolia* Col and had lumped it with *Pt. venosa*, led them to miss it completely? We may never know, however the similarity in descriptions has led to the Column's adoption of salient traits of *Pt. confertifolia* as applying to *Pt. trifolia*, in the third edition of the Colour Field Guide (CFG3). Both parties above, omitted any mention of the stigma but Allan's "Columna gracilis" (slender column) has been taken to indicate a linear stigma. Why did both parties mention obtuse leaves when copious present photos show sub acute leaves and a distinctly acute floral bract? Quite possibly their specimens included the *Pt. venosa* genes for obtuse leaves? More about that later.

The column got pix of *Pt. venosa* specimens **(Fig. 4)** from Ernie Corbet's find under beech below the North Egmont Visitors' Centre, on 19 Nov 1997. These became the Column's mental type specimens of the species. But they showed a conical tip to the dorsal sepal, more-so in some than others. **(Fig. 6)** The nose-cone housed the tips of the lateral petals. Was it typical of *Pt. venosa*? Not at all, as it transpired, at the time of writing, some 14 years later, this was a previously unmentioned trait of *Pt. humilis*, as detailed later.

Ian St George, in Dec 2007, also secured pix from the same colony. One was a rather short *Pt. venosa* as seen on the back cover of J110. Its floral bract had the undulate margins of *Pt. trifolia* but failed to enclose the galea, which is on a stem tall enough to be *Pt. venosa.* On the front cover of the same J110, Ian's other pic from the colony, depicts a typically tall *Pt. venosa* with no *Pt. humilis* nose-cone and no *Pt. trifolia* undulate margin to the floral bract.

So this colony can be classed as predominantly *Pt. venosa* but with genes apparent from *Pt. trifolia* in some specimens and from *Pt. humilis* in others. *Pt. trifolia* has not been independently reported from this site but some of its genes are apparently present.

Another of Ian's but from Berwick Forest, straddling ERs 68/69, **(Fig. 8)** had the galea almost enclosed, but in a floral bract without undulate margins. It too would have fitted the Egmont colony but was from hundreds of km to the south

***Pterostylis humilis* (Fig. 11)** was first reported by H.B. Matthews from near Bruce Rd, Whakapapa, in January 1920. (J55:12, E.D. Hatch). Matthews took specimens home to Remuera and grew them on. He sent the resulting malformed plants to Dr R.S. Rogers in Australia, along with a photo of the best but distorted flower produced. The malformation was due no doubt, to the unaccustomed warmth and low relative humidity in Remuera. Rogers described the species from that flower and from the plants preserved in spirits. Matthews could have asked T.F. Cheeseman to describe it but seemed not to trust him. Matthews said, in his letter of 31 October 1921 [3] "You will probably call it another freak." recalling what Cheeseman had said of his (Matthews') specimens of *Petalochilus saccatus* and *P. calyciformis* which Rogers had previously described.

Pt. humilis Rog. still stands and it is perhaps the best known of these three subalpine green-

hoods. Its bulbous stigma is unique amongst the three and signals fall-back self-pollination where any remaining pollen falls from the anther onto its own protruding stigma. "3-10-15cm tall," three prominent leaves, as with the previous two species, but leaves longer "4-9cm" and narrower "1.5-2.5cm" even though broad for a *Pterostylis* and "obtuse to sub-acute" quoting from Moore's 1970 Flora. Probably, Moore's wider, obtuse leaves also had *Pt. venosa* genes included because isolated colonies of *Pt. humilis*, in ideal habitat, have longer, narrower and sub-acute leaves. Such an habitat is by the track above North Egmont Visitors Centre, leading up the mountain. Another such colony, but of shorter plants, was at a lower altitude on a redundant loop of Middle Road, Horopito But that colony was then obliterated by dumped slip spoil. A trait well represented in the Horopito colony was the conical tip to the dorsal sepal, neatly housing the similarly folded tips on the lateral petals **(Fig. 10).**

Gordon Sylvester's pic of *Pt. venosa* x *humilis* (?) from Arthurs Pass, **(Fig. 12)** has brighter red tepal tips than any *Pt. humilis* and a better developed nose cone than this putative parent. Those better defined traits are difficult to justify by hybridism. Perhaps the Arthurs Pass colony is a remnant of an original parent?

Vic Vercoe's *Pt. venosa* x *trifolia* **(Fig. 9)** from vicinity of Rangiwahia Hut, western Ruahines, was growing under leatherwood (*Olearia colensoi*) as you can see from the leaf-mould but its height is all *Pt. venosa*. The only visible connection with *Pt. trifolia* here, apart from the habitat, is the slight undulations on the lower margins of the floral bract.

Bruce Irwin made a colour slide of some sectioned *Pt. humilis* from North Egmont. Some had linear stigmas, others had distinctly bulbous stigmas. Otherwise they looked identical. Those with linear stigmas had to have *Pt. venosa* genes probably emanating from the colony below in the beech forest.

So, hybridising would seem to be happening between the three species and could explain why experts and amateurs alike have been confused in the past. The holotypes especially of *Pt. confertifolia* and *Pt. trifolia* apparently bearing genes from *Pt. venosa*, made it particularly difficult and both have thus been often lumped with *Pt. venosa.*

Conclusion: characters of three distinct species are clear in iconic pix **4, 5+7** and **11** but also shown are examples of common hybrids with some genes apparent from the other two subalpine species. Original descriptions were from either dried and pressed specimens, or one wilted specimen or a deformed flower from a heat stressed plant. It is entirely possible that describers and reporters had hybrids to hand most of the time hence the confusion right to the present day.

References

1. Trans. NZ Inst.1896, 28:p610; also NOG Historic Series 1 Colenso on Orchids P47

2. Trans & Proc. NZ Inst. Cockayne L and Allan HH. Notes on NZ Floristic Botany, including descriptions of New Species. 1926. 56:21-23, also NZNOG Historic Series No. 8, Part 1, Orchids in the Transactions p100.

3. Scanlen, EA, Matthews & Son on Orchids NZNOG Historical Series 2006

Species-Altitude	Height-Habitat	Stigma	Leaves	Floral bract	Tepal tips
Pt. venosa low sub-alpine	<100mm beech canopy	Linear	Short, broad, obtuse	Short, broad, obtuse	Coincident, tawny.
Pt. humilis all the sub-alpine	<150mm well-lit scrub	Bulbous	Long, less broad, sub-acute	Long, less broad, sub-acute	Held in dorsal sepal nose-cone, dull red
Pt. trifolia high sub-alpine	<70mm leather-wood	Linear	Short, broad, sub-acute	Short, broad, acute, lower half undulate	Coincident, tawny

Table 1: Details distinctive traits, on just the three species derived by the Column from numerous pix, various descriptions and email debates with contributors. What do you think?

Captions

Fig 4. *Pterostylis venosa* standard version, three short, broad, obtuse leaves, tall stem, North Egmont under beech canopy. 19 Nov 97.

Fig. 5. *Pterostylis trifolia* standard version, short stem, three short ,broad, sub-acute leaves, floral bract with undulate lower margins, clasps the galea. Maharahara under leatherwood by Mike Lusk 7 Nov 02

Fig. 6. *Pterostylis venosa +humilis* genes, its nose-cone housing tips of lateral petals, also from North Egmont colony, 19 Nov 1997.

Fig. 7. *Pterostylis trifolia* pair showing sub-acute leaves, sheathing bract acute. Mike Lusk, Maharahara 7 Nov 2002

Fig. 8. *Pterostylis venosa +trifolia* genes, so short stem but no undulate margins on floral bract. Berwick Forest by Ian St George.

Fig. 9. *Pterostylis venosa + trifolia* genes under leatherwood near Rangiwahia Hut. Note basic *Pt. venosa stem and leaves* but undulate margins on lower floral bract; leatherwood leaf-mould by Vic Vercoe.

Fig. 10. *Pterostylis humilis* short stemmed, low sub-alpine form from Horopito 25 Nov 95. Note the lateral petal tips neatly folded into the nose-cone of the dorsal sepal, sombre red tips to the tepals.

Fig. 11. *Pterostylis humilis,* at Whakapapa 6 Dec 98. Note sub-acute leaves; 4th little leaf almost obscured; nose cone has lost the petal tips whilst being arranged for the camera.

Fig. 12. *Pterostylis venosa + humilis* genes from Arthurs Pass 5 Jan 2010 by Gordon Sylvester. Flower has the *Pt. humilis* late flowering, nose-cone, and brighter red tepal tips on *Pt. venosa* stem and leaves.


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