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#116

1-4: *Nematoceras papillosum* (?)
from Glenross (p.4)

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Cover

Nematoceras "triwhite" at Chateau Tongariro: photograph Gary Peniall (p.15).

The type locality 9: Ian St George

Original papers

Notes, notices, letters, questions, comments

Eponymous orchids: Val Smith

Aussie notes: David McConachie

The column: Eric Scanlen

The type locality: Ian St George

9. Glenross and *Corysanthes papillosa*

William Colenso described *Corysanthes papillosa* in 1884 [1]. Cheeseman reduced it to synonymy with *Corybas macranthus* [2], and everone else agreed until Brian Molloy, David Jones and Mark Clements reinstated the generic name *Nematoceras* in 2002 [3], and with it the specific epithet *papillosa* (later corrected to *papillosum*).

The NZ Plant Conservation Network's website carries a description and photograph of *Nematoceras papillosum* (Colenso) Molloy, D.L.Jones et M.A.Clem. It reads, "*Nematoceras macranthum* Hook.f is very similar and *N. papillosum* has long been considered merely a form of that variable species. Most populations of *N. macranthum* differ from *N. papillosum* by the dark maroon-black or wine red labellum, sometimes with a green throat; in contrast *Nematoceras papillosum* has a distinctly bicoloured labellum (dark red-purple in the upper half, and pale pink grading through to whitish in the lower half). Colenso (1884) stressed that the leaf of *N. papillosum* (as *Corysanthes papillosa*) was distinctly papillate on the upper leaf surface. It is not clear if this is a consistent difference from the highly variable *N. macranthum*." [4]

The author is unnamed, and (apart from the perceptive Colenso's view) the only basis for separation from *N. macranthum* appears to be the colour of the labellum, rarely a reliable sign. It would be useful to rediscover *N. papillosum* at its type locality.

Colenso's description

Colenso's 1884 protologue reads [1]:

***Corysanthes papillosa*, sp. nov.**

Plant small, 2–3½ inches high. *Leaf* ¾–1¼ inches diameter, membranous, finely and regularly papillose on upper surface, orbicular-cordate; *auricles* broad and largely rounded overlapping petiole, slightly retuse and apiculate at tip, much veined; *veins* anastomosing with an intramarginal vein running all round, light-green with (sometimes) a purple midrib and spots near margin; *petiole* ½–2 inches long; *peduncle* short, 3–4 lines long, variously situated—springing from near base of long petiole—from the middle—and from the top near leaf, purple spotted, bibracteate at base of ovarium; *bracts* small, unequal, the front one very minute, white, the back one much larger, ovate-acuminate, green. *Flower* ½ inch diameter, upper sepal suboblong-lanceolate, 2½ lines broad, acuminate, acute, projecting far beyond the lip (sometimes 2½ lines), recurved at tip, very thin, 5-nerved longitudinally, greenish-white spotted with purple-red; *lateral sepals* very filiform, 6–9 lines long, acute, whitish; *lateral petals* about 2 inches long, somewhat filiform but stoutish, obtuse, cylindrical, twisted, minutely spotted and coloured purple-red above for half of their length, white below; *lip* large orbicular, ½ inch (or more) in diameter, deeply bilobed above, spreading, plain, neither recurved nor involute, margins rounded entire above with a single slight notch at top on each lobe, very minutely undulate or finely and slightly toothed, retuse and apiculate below, papillose within, transparent, much veined; *colour*, dark purple-red above, whitish spotted with purple-red below; *ovarium* subangular, sulcated, purple striped.

Hab. In various parts of Hawke's Bay, among mosses in ravines, shaded woods in the interior, 1850–1880: *W.C.* Glenross, near Napier, 1883: *Mr. D. P. Balfour*.

Obs.—A fine species closely allied to *C. macrantha*, Hook. fil., but very distinct. Also, having affinity with *C. fimbriata*, Lindl., an Australian and Tasmanian species.

Where and when was it collected?

David Patton Balfour collected it from Glenross in 1883 (Balfour also collected *Pterostylis patens*, to be discussed later in this series). Colenso's letters to Balfour [6] refer to the plant…

1883: *Napier Nov 14*
Your tin with bottle and Orchid in spirit pleased me much; if possible let me have more flowers, fresh, put into damp soft & clean Moss, in a box, match box will do – never mind leaves or roots. It may prove to be a new spn. We have 4 or 5 Corysanthes – curiously enough, the one I had so long sought, & only got by going to the Bush in Sept, is very near to yours, but much smaller (*Nematoceras hypogaea, also with its flower below the leaf – Ed*).

1883: *Napier Tuesday night Dec 4th*
Your little gem like flowers enchanted me; their little Red Riding hood bonnets, of such a charming hue. I freshened them with water (also a little Hepatica) & left them until next day when I quietly had my (selfish?) feast – but I had no one to partake with me & you were not nigh. Curiously enough, it was only the day before, that I, despairing of hearing from you again in your busy time, & anxious to send off my Bot Ms to Dr H(ector),– I had taken out those 3 you had sent in sp, and had spent a mg in drawing up their descriptions, after ascertaining they were distinctly new spn, & not one of those of Australia; & now these fresh beauties came to hand, so I had to go over my work again, & add a little, & write out a fresh fair acct….

1884: *Napier Sunday night Nov 23rd*
… Your "Corysanthes" I should like to see – "lock stock and barrel". You could put them up loosely in thin paper, each sort separate & marked 1, 2, 3 etc, first marking on the papers in pencil, or ink, putting fine damp (not wet) Moss loosely below & above, – & put all into a small tin box, no earth. Better so than in spirits for first exam, as I can then see their natural colours, and can report to Glenross….

1884: *Napier, Saturday night, Dec 6th*
I was glad to see your writing & packet (as I always am) although I knew you had been, & still were, necessarily busy. I was delighted when I opened the tin and found your little beauties smiling & looking charming; we seemed to know each other. (Judge Gillies, who was here last night, was greatly pleased with them; I don't think he had seen any of the Genus before). They were not, however, new; & though varying in size were all 4 of one species – the same as you had sent me last year, & described at p.377, "Trans" Vol XVI Corysanthes Papillosa – see p8 "In Memoriam" for a notice of the described species….

1885: *Norsewood Jany 22*
Two days back I received your kind note of the 14th inst, (postmarked however "Napier 20th"), also the little packet containing the Corysanthes….The Corysanthes, is (I think) the same spns as those larger ones you sent me; they not only vary much in length of flower stalk, but all elongated after flowering; (see C. hypogaea – of mine, in yr "N.Z. Inst" where, I think, this fact is mentioned).

1885: *Napier Tuesday night Oct 13th*
Another small plant I should like to get some specimens of, is your little Orchid – Corysanthes Papillosa, this day, in packing up my case for Sir J.D. Hooker to go by "Arawa", I put up what I had.

1885: *Norsewood (70.M. Bush) Sunday Night 1/11*
Please send me some of your Corysanthes – in damp (not very wet) Moss. Here, I find the other & closely allied spn has already flowered; …. (*Nematoceras macranthum, type locality Cape Turnagain, flowers in midocto-*

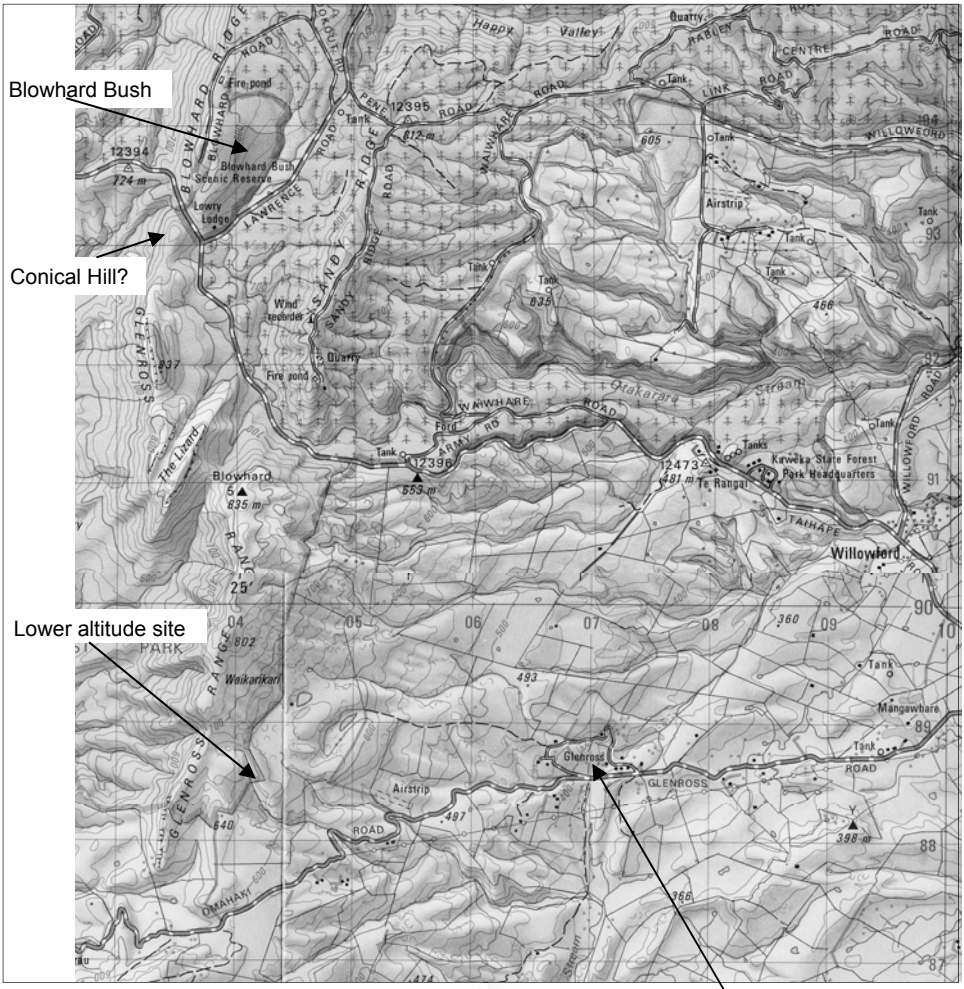
ber, and will be discussed later in this series—Ed.)

***1885:** Napier Nov 16th*
It is late & I am tired (writing) but before I go to bed I will write to you, to thank you for your welcome letter (w packet of Orchids) of the 8th inst. – A good letter, and flowers in first rate condition – and have been admired by several, indeed I sent over 8 of each (of the Corysanthes & the green Pterostylis) to the Mayors lady Mrs Spencer.… Your Corysanthes – was your old one, C. papillosa (Trans XVII). *(Dr Spencer was a friend of Colenso's, the latter borrowing the doctor's powerful microscope from time to time—Ed)*

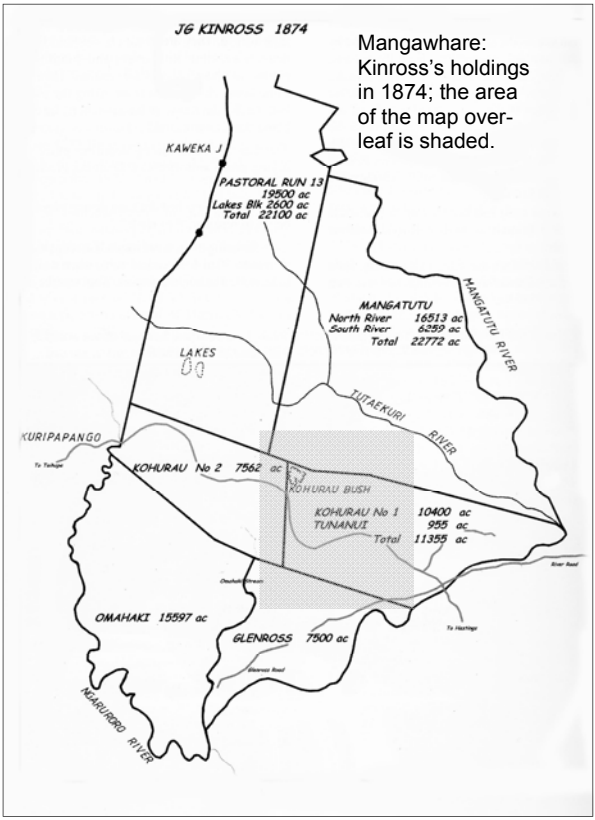
The type specimen
Colenso was at pains to describe a plant that was different from the one Hooker described [7], and Fitch drew, as *Nematoceras macrantha*, but (as others have pointed out) the differences are not obvious, except that *C. papillosa* was said to be smaller than the plant Hooker described, the labellum dark red above shading to pink or white below (*cf.* Hooker's "lurid purple"), its margins minutely undulate (*cf.* Hooker's "strongly undulate" [*Handbook*]), the leaf and inside of the labellum papillose. Below is a tabular comparison taken from Hooker's and Colenso's descriptions.

There is no specimen in Herb. Colenso, but

	***Nematoceras macranthum* Hook.f.** (from *Flora* [7] and *Handbook* [8])	***Corysanthes papillosa* Col.**
Height	6-10 in (these were swamp specimens)	2-3 ½ in.
Leaf	Petioled, cordate or 2-lobed, obtuse or apiculate, deeply 2-lobed, 1-1½ in long, coriaceous or fleshy, much reticulate	¾ -1¼ in diam, membranous, papillose, orbicular-cordate, sl.retuse & apiculate, veined
Petiole	Very short [*Flora*]; or long, very stout [*Handbook*]	½ -2 in long
Peduncle	At base of petiole	Short, 0.3-0.4 in long, arising low or high on petiole, bibractate
Bracts	Very small	Small, unequal, front minute, white; back larger, green
Flower	On a short scape, very large, ½ -1 in long, lurid purple	½ in diam
Dorsal sepal	Horizontal, lanceolate, acuminate, larger than lip, 1-2 in long	Upper sepal suboblong-lanceolate, 0.25 in broad, acuminate, acute, projecting up to 0.25 in from lip, recurved at tip, very thin, 5-nerved, greenish white spotted with purple-red
Lateral sepals	Filiform, 2-3 times length of flower; 1-2 in long	Very filiform, 0.6-0.9 in long, acute, whitish
Lateral petals	Very long slender erect	About 2in long, somewhat filiform but stoutish, obtuse, cylindrical, twisted, minutely spotted & coloured purple-red above for half of their length, white below
Lip	Very much broader than long, ½in long, recurved, deep red-purple, with strongly undulate recurved edges	Large, orbicular, ½ in or more in diam., deeply bilobed above, spreading, plain, neither recurved nor involute, margins rounded entire above with a single slight notch at top of each lobe, very minutely undulate or finely and slightly toothed, retuse & apiculate below, papillose within, transparent, much veined; colour dark purple-red above, whitish spotted with purple-red below
Ovary	Short, curved	Subangular, sulcated, purple striped.



Conical Hill? Glenross station today



as Colenso noted (13 October letter above), he sent a specimen in spirits to Kew with other plants [9]. I could not find that specimen at Kew in 2009.

What is there now?

At 7500 acres Glenross was a small southeastern part of the 86,886 acre Mangawhare block owned by JG Kinross and managed by David Balfour. A remnant of that Glenross Station is farmed today by the Hildreth family, Romney stud breeders.

In his diaries Balfour mentioned letters to Colenso, but he gave little hint as to actual sites of collections at Glenross—except that "Conical Hill Bush" seems to have been a favourite botanising spot, where he took guests, or went botanising when the November weather was too wet for shearing. Conical hill does not feature on any old or new maps, but if one surmises the woolshed would have been near the road, and that Conical Hill would have been conical and near the woolshed….

There is a conical hill at the northern end of the Glenross Range, almost over the road from the Blowhard Reserve and tracks. The Reserve was a part of Mangawhare, north of Glenross station itself; it is about 800m altitude, and on 15 November 2009 at the first stream crossing I found a *Nematoceras* fitting Colenso's description, in bud. Outside the reserve, further down the stream, there were more.

About 6km along the Glenross road is a small stream crossing, and about half a mile upstream I found a colony in full flower. This is two months after *N. macranthum,* as (for instance) reported by Margaret Menzies from Taranaki in J115.

Look at the pictures **(Figs 1-4)**: there is white in the throat, but it goes no further. The leaves are no more papillose than any *Nematoceras.* Compare with Margaret Menzies's photographs from Taranaki **(Figs 5, 6)**. *N. papillosum* appears to be more delicate, but the colours are similar.

Are they different?

References

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5. Balfour DP. 1873-89. *Mangawhare and Glenross Station Diaries*, Mss., Hawke's Bay Museum, Napier.
6. St George IM. Colenso to Balfour. NZNOG *Historical Series* 16, 2008.
7. Hooker JD. *Flora Novae-Zelandiae*, London, 1853.
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9. St George IM (ed.). *Colenso's collections*, NZNOG, Wellington, 2009.

Original papers

Pterostylis irwinii — a new location and extension of its range.

By Gordon Sylvester.

There were several highlights of the Arthurs Pass trip. But the cream of the cream had to be the discovery of *Pterostylis irwinii* at Arthurs Pass village.

David Mc Conchie was mooching around the village exploring the numerous little nooks and crannies. For some reason best known to David he was in a small patch of scrub beside some cottages in School Terrace. When I returned from a look further east he told me the news and showed me a photo he had taken of the subject **(Fig.24 OBC by David McConachie)**. Of course it was an immediate turnaround and off to School Tce. Took several photos and definitely confirmed the identification of the discovery.

During the remainder of the afternoon various groups drifted back to the Education centre: when the majority had arrived David broke the news. It was like a lightening bolt had hit the camp. Cars and cameras were readied to return to the foray.

Everyone returned with a smile on their faces and photos to prove their attendance at the site.

A week later I had reason to revisit the site. While trying to find the original small clearing, I stumbled across several other plants of the same colony. David having been a tidy Kiwi had cleared away his track markers. The furthest extent of the colony was less than ten metres from the house wall.

Several plants were in good condition and I took some shots; I also noted a small colony of about 50 *Aporostylis bifolia* in flower as well as *Pt. oliveri, Pt. graminea* agg., *Pt. montana* agg, and another *Pt*. sp. not noted the previous week, this one more highly coloured.

Oh and I did not find what I had returned to search for (Margaret's camera lens).

Location details: Altitude 860m. Ref. point NZGD E 171 , 33.771' S. 42, 56.751'. Nearest recorded site is 48.02 Cape Foulwind about 166km to the NW and Lake Rotoiti Peninsula at 125km to the NE 49.01

A few passing comments: 1. *Pterostylis graminea*, 2. "Orchids at Iwitahi" and 3. *Nematoceras acuminatum*.

By Bruce Irwin

Two items in J107 have caught my eye: (1). Your article on the Taranakai Field Days in which you scotched the rumour that *Pterostylis* "sphagnum" is self-pollinated and its labellum is non-irritable, and (2). "Orchids at Iwitahi" which failed to mention the most common of all Caladenias, *C.* aff. *chlorostyla* which is probably Hooker's *C. minor*.

1. *Pterostylis graminea.*

I think it is unfortunate that Hooker stated that *Pterostylis graminea* was probably a small form of *P. banksii*. It is true that the two species, except in size, share many similarities of structure, but *P. graminea* among all of our grassy-leaved *Pterostylis* spp., has few widely spaced nerves towards the rear of the dorsal sepal, resulting in the vary obvious "windows".

Because large *P. banksii* & small *P. graminea* were virtually regarded as a single

sp. by Hooker, botanists would be encouraged to consider other grassy-leaved *Pterostylis* of intermediate size as within this one big & small species. The Forest research herbarium contains many specimens of *Pterostylis* aff. *montana*, all of them labelled *P. graminea;* in other words the small form of *P. banksii.*

For years, after moving to Tauranga, I was puzzled by the apparent absence of *P. graminea.* Then I did find a colony of a very few plants in a tiny watercourse at the northern end of the Kaimai Range. Almost simultaneously Bob and Beryl Goodger found *P. graminea* on the margins of a bog at Lake Rotoiti (the N. Is. one). It seems clear that this species needs adequate moisture in the Bay of Plenty, whereas in Taranaki more frequent rains means that the species can be found in almost every patch of bush. Canterbury is on the dry side so *P. graminea* s.s. may be rare or even absent. That could explain why local botanists believe a rather larger plant (and possibly lacking dorsal "windows" is *P. graminea.*

In NOG *Newsletter* No.21 Dr Lucy Moore provided a very useful guide to distinguishing *P. agathicola* (*P. graminea* var. *rubricaulis* at that time) and in No.38 I provided illustrations and extended Lucy's paper to distinguish also *P.montana* & *P.* aff. *montana.*

Once you are familiar with the "windows" of *P. graminea* identification should be immediate and confident. This being the case any plant showing the windows conspicuously should be entitled to the name *graminea* unless it also exhibits other structures of importance, not shared with *P. graminea*. I dont think such structures are present in *P.* "peninsula" or *P. cernua.* Some will argue that the leaves of *P. cernua* are quite unlike those of *P. graminea.* Perhaps I would have thought that objection valid until I grew *P. areolata* in a pot for several years. When that plant was sent to me its leaves were narrow oval on distinct petioles, but two years later they were quite like those of *P. cernua* illustrated in our *Field guide,* without any suggestion of a petiole. I have photographic evidence and you all know the camera does not lie.

Some orchid enthusiasts might say that bog conditions are not normal habitat for *P. graminea,* so a plant growing more or less happily in such conditions must be a different taxon. But I believe that orchids dont always grow in preferred positions. *Thelymitra aemula* for instance grows happily in bogs, yet I have seen them growing in scorching sand, within a metre of *T. matthewsii.*

2. Orchids at Iwitahi

When I first read the article in J107 page 27 I noticed that rare orchids such as *Corybas cheesemanii* (well, rare in pine forest) were mentioned. However a few days ago I read the article again and was amazed to find that one of the most plentiful orchids at Iwitahi was not listed, namely *Caladenia* aff. *chlorostyla.* This plant is so common that when plants were being transferred from adjacent areas about to be logged, Trevor Nicholls made it clear that the reserve already contained plenty.

Unlike *C. chlorostyla* s.s., the much more common "aff. *chlorostyla*" can vary a great deal in colour. Flowers may be faintly greenish when freshly opened but fade or colour up to white, cream and probably also pink, and its stems are usually shorter, occasionally greenish but usually distinctly brownish or reddish. It grows in its millions at Iwitahi where it is very easily distinguished by its brownish short scape.

3. *Nematoceras acuminatum.*

A correspondent found my article in J113 confusing, and suggested that it was NOT Kirk who caused the confusion between *Corybas (Nematoceras) rivularis* and the plant we now call *Nematoceras acuminatum,* because in 1864 Hooker had added "obtuse, acute or acuminate" to the leaf shape of *C. rivularis.* This persuaded me to examine Hooker's *Handbook* of 1864. This is what I found...

"C. rivularis, *Hook.f.—Nematoceras*,

Fl.N.Z. i. 251. Leaf nearly sessile, orbicular ovate, ovate-cordate or oblong-cordate, obtuse acute or acuminate, membranous, often 2-lobed at base. Flower...."

The only words describing leaf shape (with commas inserted between each shape): "... orbicular, ovate, ovate-cordate, or oblong-cordate,..."

The words, "obtuse, acute or acuminate," refer to the apex shape. Hooker's meaning would have been more clear had he inserted the word "apex" before "obtuse", but that would have interfered with his conventional pattern, use in his descriptions of all *Corysanthes.*

As a result of this misinterpretation, my correspondent erroneously believes Dan Hatch's article in J17 p3 "Account of the misinterpretation of *Corybas rivularis*" to be incorrect.

Field trip report : The 2010 Arthurs Pass expedition.

By Gordon Sylvester.

In late 2007 while fossicking about at Kelly's stream the idea of a field trip into the Arthurs Pass area was broached. Some research was carried out and revealed very little information was available for the area.

This particular part of the country covers some 100 square kilometres of mainly sub-alpine bush cover and alpine herb fields. The last major survey was carried out by C. Burrows and published in 1986. The time was ripe for another look. I had stopped at various places along the highway and noted the usual culprits, *Pterostylis oliverii*, *Prasophyllum colensoi* and *Thelymitra longifolia*, but that was almost the sum of it.

Burrow's monograph detailed a lot more species than I had noted. However his area of reference was about 50 times larger than mine.

Some initial enquires about accommodation were made and the idea was raised and promptly put into my lap. After an email from a fellow "nogger", I contacted Arthurs Pass Outdoor Education Centre via its website and received a positive response. The Arthur's Pass Orchid Hunt was on; all it needed was people to turn up. Hmmm. Most of the group live in the North Island; would they bother to come south?

Several members expressed an interest in coming south after a small note in the journal: sufficient to arrange for a booking with the APOED Manager. About June 2009 Melanie Brigden indicated her willingness to act as caterer etc, allowing me to look at other aspects of the organisation.

We slowly crept up with the numbers to a point where it was definitely viable to proceed and start to plan menus and look at a game plan of sorts.

As December approached the tempo of interest increased – we had 22 names on the list, and just on the close off date I received another couple of names, and (surprise, surprise) an enquiry from Gt. Britain.

As December closed the tempo increased as did the stress levels about getting things to the area as well as people. Melanie had been buying consumables and meat whenever it was on special and in line with her meal plan for the week. Evelyn kept in contact with Melanie and arranged to procure vegetables, bread and milk etc from this (West Coast) side of the hill.

In the meantime several emails whizzed back and forth to Gt. Britain sorting matters for our surrogate Kiwi.

January 4th dawned: it was all on, racing into town to pickup vegetables, milk, etc, stopping off on the way to load up the Coastal vehicles with personal gear etc, off up the hill to try and get there and get the place open before anyone arrived. (One vehicle was already parked outside when we arrived). Unloading of all of the foodstuffs was carried out quickly and organised by Melanie and her

husband before he retired back to Christchurch to look after their children.

Lunch was started for everyone arriving and vehicles were quickly unpacked. During the lunch the ground rules such as they were, were discussed. And the first expedition was launched into the alpine herb fields area at Temple Basin Ski/Goods lift. That small group noted *Aporostylis bifolia, Pterostylis oliveri, Prasophyllum colensoi.* And wet feet – ours that is.

Tuesday 5 Jan dawned and people were up and eager to get out and about. Three persons were nominated as interim party leaders and the first day was started with everyone scattering in all directions. People tended to go with those they knew and this was expected.

Lunch time arrived and the groups slowly filtered in with reports of the finds being exchanged. After lunch the pattern was set for the rest of the week. Tea was dealt with swiftly and the lounge cleared for action with laptop computers and note books appearing from all angles. Several discussions broke out, over the best places to go and what was likely to be seen. By now we were getting an idea of the normal residents in the various areas *Pterostylis oliveri, Chiloglottis cornuta, Aporostylis bifolia Waireia stenopetala, Prasophyllum colensoi,* and very small *Microtis* were the usual records.

Graham Giles our temporary Kiwi was by now quite excited about the range of plants he was seeing.

Wed 6th dawned a little cooler, the DoC Weather forecast was not brilliant but still did not deter the various souls venturing above the alpine herb line. We had made arrangements to obtain daily weather forecasts and these were invaluable in suggesting the safe places to go and explore.

Thur 7th dawned with gale force winds and horizontal rain. Waterfalls everywhere.

Four members decided to go and have a look up the Bridal Veil Falls track. The track was in its self a virtual river as well. We pulled out at the top of the viewing area, heading home soaking wet. A mid-afternoon text message indicated the weather was windy but no rain near the west coast. Three vehicles set off to have a look at Londonderry Rock and other sites around. The plants of interest were *Thelymitra cyanea* etc.

The trip down was exciting, several attempts at water skiing being undertaken with the water on the road surface. Dillmanstown was awash and it didn't let up. We returned to Arthur's Pass to clearing weather – which closed in again shortly after our return. The Drying Room was well exercised that was for sure.

We awoke in the morning to visible snow down to about 1200m and a cool breeze. Allan regaled everyone with purple polypropylene gear and wandered across the road to take photos of the snow on the mountains. Even the Keas stayed away from Allan. It was the cause of several photos though and the odd toot from truckies.

Several members of the party took the opportunity to sit in on the summer programme being conducted by DoC in the evenings otherwise it was laptops: cards and discussions groups were the usual forms of entertainment. No radios, or TV's blighted our vision or hearing during the entire week.

Where did we go? Just about every track was searched with one exception (Scotts Track) with varying degrees of orchid population being recorded. In addition the basin of the Waimakariri River was visited on both sides. DoC was keen to discourage any attempts to cross the river bed due to high water levels. This was borne out with the huge pressure waves on the Bealey and the Waimak during the weather storm. The south bank of the Waimak., Bealey Spur Track, the Mingha river bank, Hawdon river, Bealey Chasm, Bridal Veils Falls track, Dobson Board walk, Temple Basin Carpark, Power Station Walk, School terrace, Greyney Shelter Loop track – were all subjected to searches.

The find of the trip had to be *Pterostylis irwinii* right in the village of Arthurs Pass by

David; the second most important find was *Towsonia* in two different locations as well as *Pterostylis humilis* and *P. venosa*..

The complete list totalled thirty seven species. Several are new records for the district.

E.D. 53.02 Arthurs Pass list: *Aporostylis bifolia* (spotted leaf and unspotted leaf, spotted flowers and unspotted flowers), *Adenochilus gracilis, Caladenia chlorostyla, Caladenia* "Red Stem", *Chiloglottis cornuta, Gastrodia cunninghamii, Gastrodia* aff. *sesamoides, Microtis unifolia, Microtis oligantha*? *Nematoceras macranthum, Nem.* aff *trilobum, Nem. iridescens, Prasophyllum* sps. (green/red brown/ red stems and flowers), *Pt. oliverii, Pt. montana* agg., *Pt. irsoniana, Pt. venosa, Pt. montana*, (Greyneys and Waimak), *Pt. australis, Pt. areolata, Pt. humilis, Pt. banksii, Pt. irwinii, Pt. banksii* x *Pt. oliveri, Stegastyla lyallii, Thelymitra longifolia, Th. hatchii, Th. cyanea, Th. colensoi, Th. decora*, (thin narrow bronze 50mm high Bealey Spur), *Th.* sps. (red/ bronze V shaped leaf in flower bud, one and two flowered specimens), *Waireia stenopetala.*

From Dillmanstown 50.01: *Earina mucronata, Chiloglottis cornuta, Winikia cunninghamii.*

Stafford Loop Road: *Th. hatchii, Th. cyanea* (purple form).

Stanton Road: *Th. cyanea* (blue), *Th. pulchella*.

Members of the expedition were Melanie Brigden, Bev and Brian Woolley, Murray and Gwenda Lister, the twins and sister, Margaret Menzies, & Glyn Wren, Claire Francis, Dianah Penniall, Brian and Judith Tyler, Dawn Bowen, Gael Donaghy and Graham Jane, Graham Giles, Allan Ducker, David McConachie, Gary Penniall, Evelyn Clark, Gordon Sylvester. Dianah left for another expedition early in the week.

Before and after the 2009 AGM at Sika Lodge.

By Gary Penniall.

Six of the Taranaki group travelling in two cars (Margaret, Glynn, Claire, Gary, Ina and Ernie) decided to do some orchiding on the way to Sika Lodge on 13 November but showery weather prevented us doing any searching between north Taranaki, Bennydale and Pureora. On arriving at the western side of Taupo the weather cleared up and we decided to do a quick trip up the lower part of the Waihaha track

Waihaha Track 13 Nov 09

Stegastyla atradenia in flower, spotted by hawk eye Ernie. I have not seen it since moving plants from the old reserve at Iwitahi in Dec 2000.

S. lyallii agg. a day or two away from opening. About ten to twenty plants under manuka bottom left of track Spotted by Claire who is rivalling Ernie in finding plants.

Chiloglottis cornuta in flower. Brown calli on labellum.

Singularybas oblongus in flower.

Petalochilus species in bud . Red and green stemmed forms.

Thelymitra species in bud only.

Calochilus leaves (probably *C. robertsonii* as seen here before)

Pterostylis patens in flower

Pterostylis species finished flowering

Microtis species

Iwitahi 14 Nov 09

Myrmechila trapeziformis one colony still there: no buds or flowers and colony although healthy appears smaller than previously.

Simpliglottis valida in flower and colonies abundant and spreading like ragwort.

Stegastyla lyallii leaves and buds.

Nemoteceras trilobum agg.

Aporostylis bifolia purple and green forms.

Thelymitra species. In bud only. Conditions

not suitable for opening.

Pter. montana? Tips of lateral sepals appeared rolled on some flowers? Labellums twisted to left with one exception with labellum twisted to right.?

Pter aff *montana* in flower

Pter. patens in flower

Sika Lodge. AGM Wonderful dinner planned and cooked by Bill Liddy. A credit to him. Followed by AGM.

Boundary Stream 15 Nov 09

Four am start and we were off to Boundary Stream, the intensively predator controlled reserve to the north of the Taupo-Napier Highway inland from Tutira. The reserve of approx 700 hectares drapes the eastern flanks of the Maungahaururu range and ranges from lowland forest at 300 metres altitude and climbs to one thousand metres which gives a huge range of conditions for orchids and other flora.

Our group had several reasons for going there. Apart from orchids we had seen there previously, Mike Lusk told us at the AGM of *Drymoanthus flavus* which he had seen there a short time before and drew up an excellent map for us to find it at bottom of Kamahi Track. He was very accurate and we found it exactly where he had marked it.

Another reason was we hoped to see the kokako we had seen on previous trip. Also the yellow Mistletoe *Alepis flavida* on the Tumauako Loop track at top of reserve.

We arrived at the top entrance at the Tumauako Loop at approx 6.30 am. The weather was cold and very windy which made it more difficult to hear bird song than usual.

Anyhow we proceeded around the track quietly stopping and listening for kokako calls with no success. Last time we were there we had luck to have a good view of a pair feeding a fledgling on this loop track. Anyhow Margaret Claire and I stopped and spent quite some time photographing some flowering orchids of the *Nematoceras trilobus* complex and Ina, Glynn and Ernie, bored at the time we took wandered off down the track. After about half an hour to our delight a kokako arrived and sang out in a tree only about 30 metres away. This was at 8am and so we could have stayed in bed for an extra hour. I am sure it must have come to check out who was in its territory. Although it was well up in a large tree, with Claire's binoculars we had a good view of it. Margaret was frantically trying to change lenses and get her telescopic lens on but had no sooner achieved this and tried to focus on the bird than it decided to fly off. We must be very lucky as on both of our trips to Boundary Stream we have seen kokako. We have been told other people after numerous trips have never seen or heard a trace of them. On both trips they have been at top of reserve and although we have spent a lot more time on the longer Kamahi track have not seen any there. Lots of robins, white heads, pigeons, tuis, cuckoos etc. Also we have not seen any of the saddlebacks which were released there and wonder if they have survived.

On going down Kamahi track we found in flower...

Pterostylis species with red labellum twisted to left. Long dorsal sepal and very erect red lateral sepals (*P. graminea* or aff *montana*?)

Pter. montana? with left twisted black and green labellum.

An unusual round leaf orchid in flower. Flower attached below leaf as *Nem. macranthum.* Perhaps a *macranthum* still not fully open? although it appeared to be fully mature.

Drymoanthus flavus. At bottom of loop we found Mike Lusk's *Drymoanthus flavus* on Kamahi where he had recorded it on the map and we were very excited as none of us had seen it before. It may also need to be recorded in another ecological region. I think it is in 29 but also close to 27.

Singularybas oblongus usual red form and one with twin flowers.

Singularybas oblongus white form with pink flush in labellum
Nem. macranthum.
Petalochilus species in bud, numerous. Red and green stemmed varieties.
Petalochilus in flower. Will leave it to you to identify - one of *carnea* type
Acianthus sinclairii. All finished flowering and forming seed capsules.
Pter. australis. Dorsal sepal too short to be immature *patens* or *banksii*.
Thelymitra species numerous and in bud. Conditions not suitable for them to open.
Earina mucronata common. Some in flower.
Earina autumnalis common.
Microtis species.
Chiloglottis cornuta.

After Boundary Stream we proceeded down the road for a few kilometres to the Opouaki Kiwi Reserve which is a creche for young Kiwi where they are kept until they are large enough to protect themselves against stoats.

Opouaki Kiwi Reserve.
Earina mucronata in flower.
Earina autumnalis
Nem. macranthum in flower
Pterostylis species in flower.
Thelymitra species. In bud only.
Microtis unifolia in flower

Rest area south of Rangipo 16 Nov 09
Found *Nematoceras* "rest area". Most finished. Two still in flower but wilting and well past their best.

Whakapapaiti stream above Chateau 16 Nov 09
Nematoceras "roundleaf". One only in bud, still week or two away from opening; many young plants with no buds.
Nematoceras "tri-white". Claire found colony in Manuka scrub just above the round leaves. **(Cover and Fig.13)**
Nematoceras trilobus agg. red form

That was end of our search and after lunch in freezing conditions we drove home to Taranaki, where weather fine and pleasant.

The New Zealand Native Orchid Journal

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What I did this summer

By David McConachie.

Early January saw me in the South Island along with another 20 odd orchid enthusiasts attending a Native Orchid camp at Arthurs Pass. Gordon Sylvester, Evelyn Clarke and Melanie Brigden did an excellent job organising the food and accommodation, and everyone chipped in with Kitchen Duty.

While the weather wasn't always sunny and warm, it was better than the snow and ice one intrepid visitor from the UK left behind. On the one day that we had really bad weather a small group of us went out for a walk in the rain, then the whole group braved flooding and slips on a trip over to the West Coast to see orchids growing on mining spoil as well as visiting Kumara.

During the week we were at Arthur's Pass at least 16 different locations were visited, many by multiple groups. As a result, of the 40 species previously record in the area the group found thirty. Additionally, another seven previously unrecorded species were found. I was fortunate to find one of them.

On our last full day of the camp I got accidentally left behind when the other groups headed out for one last look. So I decided to go for a walk around the village and have a look at the margins of the bush, etc., to see if there were any orchids to be found.

Walking along I came across a piece of waste ground and I could see some *Aporostylis bifolia* (Odd-leaf Orchid) so I decided to check it out. So I climbed up a bank, went down a bank and wandered round a pocket-size piece of ground.

Then I came upon some plants of *Pterostylis oliveri*, which is ubiquitous in the area. Looking around I saw a plant of *Pterostylis irsoniana.* I didn't have a good photo of one from this trip so I thought I would have another try.

I knelt down, focussed the camera, then froze and just stared. Slowly what I was looking at sunk in. It WASN'T *Ptst.irsoniana.* It was something that I had been shown at least 15 years previously. At Erua, on the Central Plateau I had seen *Ptst.* 'Erua' which would later described and named as *Ptst. irwinii.*

Subsequently, it has been found at a number of locations around Takaka, northwest Nelson. Now I was looking at it at Arthur's Pass. Looking around, I realised I was on the edge of a colony with about forty plants ranging from seedlings to mature individuals. There were 12 in flower.

It was a thrill to see and it capped off an excellent week. **(Fig.24, OBC).**

5, 6: *Nematoceras macranthum* from Taranaki (p.4)

7: *Thelymitra longifolia* (p.26)

8: *Microtis* "B" (p.27)

9

10

Microtis unifolia agg: fitting the description of *M. longifolia* Col. (p.26)

Orthoceras, with features of *O. novae-zeelandiae* and *O. strictum* (p.29)

11 12

13: *Nematoceras* "triwhite" (p.13)

14: *Microtis* "B" from Wanaka (p.27)

15

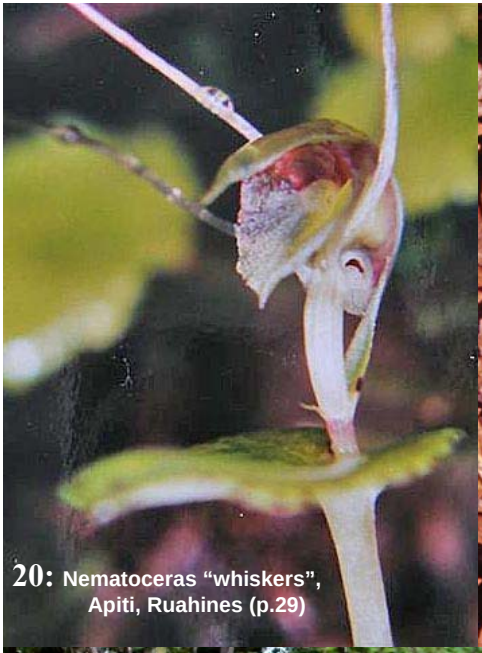
16

17

18

19

16-19: Insects visiting *Earina mucronata* (p.26)



20: Nematoceras "whiskers", Apiti, Ruahines (p.29)

22: The Column p.34

21

⇦*Pterostylis patens* Col. Found by Pat Enright at Stronvar, Wairarapa (p.29). Inset, in contrast, are "droopsnoot" Ruahine flowers with much shorter dorsal and lateral sepals.

Orchids of Arthurs Pass and Otira River areas ED 53.2 and 50.02

by Gordon Sylvester

A checklist published in the *New Zealand Journal of Botany* 1986 vol 24: 9-68 by C.J. Burrows listed several species. This is the third such list I have seen for this general area.

Over several years commencing 2004 I have briefly looked at roadsides to gain an insight in the orchid populations. While there has never been any attempt to penetrate more than 80m from the roadside. I have noted the following species; the general site of the record is also recorded.

Records underlined are those of the 2010 expedition.

Kelly's Stream 2007

Earina autumnalis
Pterostylis montana
Pt. australis
Pt. australis X
Pt. graminea agg
Nem hypogeaum
Nem trilobum
Chiloglottis cornuta
Pt. oliveri
Pt. irsoniana
Pt. oliveri X
Nematoceras macranthum
Nem longipetalum
Nem acuminatum

Otira Valley above Pegleg Bend

Aporostylis bifolia
Stegastyla lyallii
Waireia stenopetala
Caladenia "Red Stem"
Prasophyllum colensoi

Temple Basin Car park and ski field lift areas

Aporostylis bifolia
Pterostylis australis
Stegastyla lyallii
Prasophyllum "green"
Gastrodia cunninghamii
Pterostylis venosa
Stegastyla aff. *alpina*
Prasophyllum "B"

Avalanche Creek Track

Aporostylis bifolia
Nematoceras macranthus
Pterostylis oliveri
Chiloglottis cornuta
Prasophyllum sps "green"
Thelymitra hatchii

Waimak Basin West of Klondyke Corner

Chiloglottis cornuta
Nematoceras trilobus agg
Pterostylis montana sps aff Greyneys/Waimak.
Microtis oligantha
Prasophyllum sps green,redgreen,redbrown

Bealey Spur track

Aporostylis bifolia
Caladenia "Red Stem"
Gastrodia aff sesamoides
Microtis unifolia
Prasophyllum sps"green"
Adenochilus gracilis
Chiloglottis cornuta
Gastrodia cunninghamii
Nematoceras iridescens
Pterostylis australis

Pterostylis areolata
Pterostylis oliveri
Thelymitra decora
Thelymitra longifolia
Pterostylis montana aff.
Thelymitra cyanea
Thelymitra hatchii

B.B. Track = Bealey Bridge Track.

Caladenia chlorostyla
Gastrodia cunninghamii
Nematoceras iridescens
Stegastyla lyallii
Chiloglottis cornuta
Microtis unifolia
Nematoceras aff *trilobus*
Thelymitra longifolia
Thelymitra V shaped leaf 50mm high flowering size
Thelymitra V shaped leaf one and two flower bronze leaf.

BURROWS RECORDED IN 1989

Adenochilis gracilis
Caladenia lyallii
Corybas macranthus
Corybas rivularis
Dendrobium cunninghamii
Gastrodia cunninghamii
Microtis oligantha
Prasophyllum colensoi
Pterostylis australis
Pterostylis irsoniana
Pterostylis mutica
Pterostylis venosa
Thelymitra longifolia
Aporostylis bifolia
Chliglottis cornuta
Corybas oblongus
Corybas trilobus
Earina autumnalis
Lyperanthus antarcticus
Microtis unifolia
Pterostylis areolata
Pterostylis banksii
Pterostylis montana
Pterostylis oliveri
Thelymitra hatchii
Thelymitra venosa

OTHER RECORDS HAVE INCLUDED

1893 Petrie D. Proc.N.Z.I XXVI 266-279
Kelly's Creek: *Gastrodia sseamoides; Pterostylis oliveri*

1929 RM Laing & WRB Oliver Trans R.S.N.Z. 59 715-730
Upper Bealey River: *Chiloglottis cornuta; Aporostylis bifolia; Gastrodia cunninghamii; Prasophyllum colensoi; Lyperanthus antarcticus; Pterostylis oliveri; Thelymitra unifolia; Corybas trilous; Caladenia lyallii; Corybas rotundifolius; Pterostylis areolata.*

1935 Laing and Gourlay H.W. Trans R.S.N.Z. 64 1-10
Bealey River Basin: *Pterostylis graminea; Pterostylis australis; Pterostylis banksii; Microtis unifolia; Thelymitra hatchii.*

1962 C.J. Burrows Trans.R.S.N.Z. Bot. 1 (15) 195-216
Waimakariri Basin: *Aporostylis bifolia; Corybas oblongus; Corybas trilobum; Corybas macranthus; Lyperanthus antarcticus; Microtis magnadenia; Microtis parviflora; Microtis unifolia; Pterostylis australis; Pt. areolata; Pt. mutica; Pt. oliveri; Pt. graminea; Pt. montana; Pt. irson-*

iana; Pt cynocephala; Pt. venosa; Chiloglottis cornuta; Thelymitra venosa; Thelymitra pachyphylla; Thelymitra uniflora; Thelymitra longifolia; Caladenia lyallii; Prasophyllum colensoi; Adenochilis gracilis; Acianthus reniformis; Gastrodia cunninghamii.

VAR DATES 2007 1988 GORDON SYLVESTER AND THOM PENDRIGH UNPUBLISHED DATA

Greynes Shelter and Track*: Nematoceras trilobum; Chiloglottis cornuta; Pterostylis oliveri; Pterostylis graminea* agg*; Pterostylis irsoniana;*
2010. G. Sylvester *Aporostylis bifolia*, *Adenochilus gracilis*, *Gastrodia cunninghamii*, *Pterostylis montana*, *Pterostylis montana* small

Bealey Chasm Track to Chasm only 2010
Aporostylis bifolia two colour forms; *Caladenia lyallii; Pterostylis humilis;P terostylis oliverii.*

Scotts Track: 1988 Thom Pendrigh NZNOG Journ 25:11
Townsonia deflexa; Thelymitra hatchii;Pterostylis oliveri: Pterostylis banksii X *Pterostylis oliveri.*

Bridal Veil Falls Track: 1988 Thom Pendrigh NZNOG Journ 25:11
Aporostylis bifolia; Prasophyllum colensoi; Townsonia deflexa; Nematoceras trilobum; Pterostylis oliveri; Waireia stenopetala.
2010 G. Sylvester *Pterostylis venosa*
Top end of track about the 1200m peg
Prasophyllum sps. Green brown flowers green stem; *Pterostylis banksii x Pt. oliveri;*

Power Station Track
Aporostylis bifolia; Chiloglottis cornuta; Nematoceras trilobus agg; Pterostylis oliveri; Townsonia viridis.

Mingha River bank East side by railway line
Gastrodia sps; Pterostylis oliverii; Thelymitra longifolia.

School Tce
Adenochilus gracilis; Aporostylis bifolia; Nematoceras trilobus agg; Pterostylis irsoniana; Pterostylis irwinii; Pterostylis oliveri.

ORCHID SPECIES RECORDED IN THE ARTHURS PASS AREA ED 50.02 AND 53.02 COVERING THE AREA FROM AIKENS TO GRASSMERE LODGE. Amended 10 Jan 2010 after NZNOG Field Trip to Arthurs Pass, amendments underlined

Acianthus reniformis	*= Cyrtostylis reniformis*
Adenochilis gracilis	
Aporostylis bifolia (spotted leaf and unspotted leaf)	
Caladenia chlorostyla	
Caladenia "Red Stem"	
Caladenia lyallii	*= Stegostyla lyallii*
Chiloglottis cornuta	
Corybas acuminatum	*= Nematoceras acuminatum*

Nem hypogeaum = *Nematoceras hypogaeum*
Nem longipetalum = *Nematoceras longipetalus*
Corybas macranthus = *Nematoceras macranthum*
Corybas oblongus = *Singularybas oblongus*
Corybas rivularis = *Nematoceras rivulare*
Corybas rotundifolius = *Anzybas rotundifolius*
Corybas trilobum = *Nematoceras trilobum*
Nematoceras aff. *trilobus*
Nematoceras iridescens
Dendrobium cunninghamii = *Winika cunninghamii*
Earina autumnalis
Gastrodia cunninghamii
Gastrodia sesamoides. = *Gastrodia aff sesamoides*
Lyperanthus antarcticus = *Waireia stenopetala*
Microtis magnadenia = *Microtis australian parviflora*
Microtis oligantha
Microtis parviflora
Microtis unifolia
Prasophyllum colensoi
Prasophyllum sps green/Red Brown/Red stems leaves and flowers
Prasophyllum "B"
Pterostylis areolata.
Pterostylis australis
Pterostylis banksii
Pterostylis cycnocephala = *Pterostylis tanypoda*
Pterostylis graminea agg
Pterostylis graminea
Pterostylis humilis
Pterostylis irsoniana
Pterostylis irwinii
Pterostylis montana agg (Hatch)
Pterostylis montana (aff Greyney's and Waimak)
Pterostylis mutica = *Pterostylis tristis*
Pterostylis oliveri
Pterostylis venosa
Pt. australis X
Pterostylis banksii X *Pterostylis oliveri*
Pt. oliveri X
Stegastyla aff. *alpina*
Thelymitra decora
Thelymitra venosa = *Thelymitra cyanea*
Thelymitra pachyphylla = *Thelymitra fimbriata*
Thelymitra uniflora = *Thelymitra cyanea*
Thelymitra "colensoi" Thin narrow bronze 50mm high (Bealey Spur)
Thelymitra sps Red/Bronze leaf 500 mm high in flwr bud
Thelymitra sps V shape leaf one or two flowers
Thelymitra hatchii
Thelymitra longifolia
Townsonia deflexa

A total of 46 57 species recorded

Adenochilis gracilis	Herb No.	**AP 800**
Aporostylis bifolia	Herb No.	**AP 1222**
Caladenia lyallii	Herb No.	**AP 803** name changed to *Stegostyla*
Chiloglottis cornuta	Herb No.	**AP 804**
Corybas macranthus	Herb No.	**AP 832** name changed to *Nematoceras*
Corybas oblongus	Herb No.	**AP 822** name changed to *Singularybas*
Corybas rivularis	Herb No.	**AP** name changed to *Nematoceras*
Corybas trilobus	Herb No.	**AP** name changed to *Nematoceras*
Dendrobium cunninghamii	Herb No.	**AP818** name changed to *Winika*
Earina autumnalis	Herb No.	**AP 817**
Gastrodia cunninghamii	Herb No.	**AP 807**
Lyperanthus antarcticus	Herb No.	**AP 809** name changed to *Waireia stenopetala*
Microtis oligantha	Herb No.	**AP 1266**
Microtis unifolia	Herb No.	**AP 1263**
Prasophyllum colensoi	Herb No.	**AP 109**
Pterostylis areolata	Herb No.	**AP**
Pterostylis australis	Herb No.	**AP**
Pterostylis banksii	Herb No.	**AP 1258**
Pterostylis irsoniana	Herb No.	**AP 812**
Pterostylis montana	Herb No.	**AP 821**
Pterostylis mutica	Herb No.	**AP 1265** name changed to *Pterostylis tristis*
Pterostylis oliveri	Herb No.	**AP 813**
Pterostylis venosa	Herb No.	**AP 1256**
Thelymitra hatchii	Herb No.	**AP**
Thelymitra longifolia	Herb No.	**AP**
Thelymitra venosa	Herb No.	**AP 611** name changed to *Thelymitra cyanea*

The Herbarium references not numbered but double underlined are held elsewhere

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Notes

THE JANUARY ISSUE of *The American Naturalist* reports on sexual deception in orchids as a pollinating system. Many orchids produce flowers that look or smell like female insects of a single species. Males are drawn to the flowers, attempt to mate with them and thus collect pollen on their bodies, which fertilises the next flower they visit.

Such sexual strategies at first sight seem inefficient, because they only attract the males of one species – a *Cyrtostylis* that smells like a female ichneumonid wasp (*Lissopimpla excelsa* for instance) is only going to attract males of that species, not other insects. The orchids therefore limit their potential pollinators, which would seem to impose a reproductive disadvantage.

Despite the apparent drawback, sexual deception has evolved in many orchid species, suggesting there must be some selective advantage. Florian Schiestl of the University of Zürich and his team observed populations of 31 orchid species with varying pollination strategies in Italy and Western Australia. They measured the amount of pollen that was taken from each orchid, and the amount of pollen that reached its intended destination – another orchid of the same species.

They found that populations of sexually deceptive orchids had higher "pollen transport efficiency" than the species with multiple pollinators. Thus a higher percentage of the pollen taken from sexually deceptive orchids actually reached another orchid of the same species. The orchids with multiple pollinators had more pollen taken from their flowers, but more of that pollen was lost to flowers of the wrong species.

The chance of hybridisation would of course also be reduced. We know that nearly all N.Z. Pterostylis and Nematoceras species are pollinated by fungus gnats. What we don't know is whether, as in (for instance) Cryptostylis, there is a specific gnat species for each orchid species. Probably not I think: hybrid swarms have been seen (and reported in the Journal) for taxa in both genera, suggesting promiscuity of the gnats at least—Ed.

ANNE GASKETT, NOW at the School of Biological Sciences at the University of Auckland (and a NZNOG member), co-authored (while in Sydney) with ME Herberstein a paper on "Colour mimicry and sexual deception by Tongue orchids (*Cryptostylis*) - *Naturwissenschaften* published online (DOI 10.1007/s00114-009-0611-0).

"How," they ask, "does colour function when pollinators are deceived, unrewarded, and may even suffer fitness costs?"

Sexually deceptive orchids lure pollinators over long distances by emitting pheromones, but close-range deception by colour mimicry is a "tantalising possibility".

The researchers mapped the colours of female wasps (*Lissopimpla excelsa*), the males of which pollinate four different *Cyrtostylis* species, into a wasp hexagonal colour space. They then compared the colours of the *Cyrtostylis* flowers and found they identically reflected red-orange wavelengths. Raised bumps on two orchid species also reflected UV wavelengths, as did female wasp wings.

"Orchid deception may therefore involve accurate and species-specific mimicry of wavelengths reflected by female wasps, and potential exploitation of the insects' innate attraction to UV and yellow wavelengths."

MIKE LUSK EMAILED, "I found this **(Fig.7)** half way out of a 500m climb out of the Taruarau Riverbed in the Northern Ruahines. Colenso has probably described it already as 'Thelymitra leucocaerulea'. Eric tells me he's seen similar in northern parts." Mike also sent photographs of insects on *Earina mucronata*: "I took these at a large plant in the Mohi Bush Reserve…. the insect activity was intense." **(Figs 16-19).**

Mike emailed in February with photographs of a late-flowering, long-leaved *Microtis* from under pines at Iwitahi **(Figs 9, 10)**. Even allowing for the sometimes curious forms of orchids under exotic pines, this seems to have many of the characteristics of Colenso's *Microtis longifolia*—always identified with *M. unifolia*—but is it?

JAN KELLY EMAILED (December 09), "It has been suggested to me that this wee *Microtis* is your *Microtis* "B" **(Figs 14, 15)**. I have it flowering outside my house in Wanaka at present. As we are on a grassy block that has been deer farm, and I've planted lots of natives and tussock, I can't say for sure that it is local to here. A real possibility is that it came from The Cove on Otago Peninsula. My sister gave me a potted shrub from her garden that had *Microtis* in with it - seeded in wild, she didn't acquire it. I lost track of the one she sent but it is a possibility that this is it, though seeding well WEST of where I planted hers, which is unusual in this land of the big Nor'wester. Most of my plants travel steadily eastward." *Yes, I believe it is—it lacks a callus on the labellum, and lacks a conical shape to the raceme, typical of the taxon.* ***Fig. 8*** *is a shot of Jan's from Lismore Park, Wanaka, showing a remarkably smooth labellum—Ed.*

PETER DE LANGE emailed with the most recent rarity lists for the NZ orchids:

TAXONOMICALLY DETERMINATE

THREATENED

Nationally Critical: Anzybas carsei, Linguella puberula, Pterostylis micromega, Sullivania minor, Thelymitra matthewsii, T. sanscilia

Nationally Endangered: Plumatichilos tasmanicum, Pterostylis irwinii

Nationally Vulnerable: Spiranthes novae-zelandiae

AT RISK

Declining: Pterostylis paludosa

Relict: Prasophyllum hectorii

Naturally Uncommon: Adelopetalum tuberculatum, Anzybas rotundifolius, Calochilus paludosus, C. robertsonii, Corunastylis nuda, C. pumila, Danhatchia australis, Drymoanthus flavus, Hymenochilus tristis, Molloybas cryptanthus, Petalochilus alatus, P. bartlettii, P. variegatus, Pterostylis auriculata, P. cernua, P. foliata, P. humilis, P. porrecta, P. silvicultrix, Stegostyla atradenia, Thelymitra formosa, Townsonia deflexa

NON-RESIDENT NATIVE

Vagrant: Myrmechila formicifera, M. trapeziformis, Pterostylis nutans, Simpliglottis valida

Coloniser: Cryptostylis subulata, Thelymitra malvina

DATA DEFICIENT

Nematoceras papillosum, N. rivulare

TAXONOMICALLY INDETERMINATE

THREATENED

Nationally Critical: Calochilus aff. herbaceus (CHR 65825; Kaimaumau), Microtis aff. unifolia (CHR 532775; Fox), Nematoceras aff. rivulare (AK 251833; Kaitarakihi), Thelymitra (a) (WELT 79140; Ahipara)

AT RISK

Naturally Uncommon

Nematoceras aff. rivulare (CHR 534752; "rest area"), Nematoceras aff. sulcatum (CHR 300648; Chatham Islands), Nematoceras aff. trilobum (CHR 534742; Trotters Gorge), Nematoceras aff. trilobum (CHR 537604; Rimutaka), Pterostylis aff. graminea (CHR 513330; "sphagnum"), Thelymitra (c) (CHR 518036; "rough leaf"), Thelymitra aff. ixioides (AK 251348; New Zealand)

DATA DEFICIENT

Spiranthes aff. novae-zealandiae (CHR 518297; Motutangi), Thelymitra aff. longifolia (CHR 537579; Whakapapa)

Reference

de Lange, P.J.; Norton, D.A.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Hitchmough, R.; Townsend, A.J. 2009: Threatened and uncommon plants *New Zealand Journal of Botany 47*: 61–96.

Letter to the editor: destructive track maintenance

The Editor,
NZ Native Orchid Journal.

Dear Ian,

I've recently visited a couple of front-country tracks in Hawkes Bay specifically to look for the many varieties of orchids I expected to be present. One was the Sunrise Track where we found plenty at the AGM in 2008. I was shattered to find that both had been recently cut to the 'tidiest' of standards and there were practically no orchids to be found. This means not only that there will be no seeding this season but that there will be no replenishment of tubers. This I presume will influence flowering next season. The season after that is when the next cut is due.

National Standards for the tracks in question require the removal of all vegetation to a maximum of 1m each side of the centre of the 0.75m walking surface, and to a height of 2.5m.

I realise that in some local areas DoC are aware of and careful with special sites but this is a fragile alliance at best especially when the main variable is a man with a scrub bar. I believe the whole standard is destructive of the very biodiversity DoC manages, and quite possibly excessive in economic terms too.

I am of course particularly fascinated by native orchids but like most of us I'm sure, I'm interested in the biodiversity of an area, and along with the orchids goes much other life eg ferns, grasses, mosses, other groundcovers and their attendant fauna. Track sides are probably the only place many bushwalkers get to see such life.

In my letters to DoC I raise the following:

1. Timing of cutting- say April /May but relevant to local area.
2. Frequency. Not only are there cost issues here but frequent full clearing may well be enhancing weed growth.
3. Width to ground level. I feel the cut could be made to a height above ground of say 20cm or angled upward so that at the outer extent the cut should be say 30cm off the ground.
4. The contradiction between DoC's custodial and enhancement roles and the destruction of large quantities of small native plants growing in a specially suitable environment. The contradiction is inevitable of course but I think it could be much less dramatic.

I suggest and firmly hope that any one of us who sees track clearing which is ill timed or unnecessarily destructive will write politely to their local DoC people with a copy nationally. Try to do more than express your concern-make positive suggestions and if you don't get a reply, follow up. In the long run I'd like to see a change in the national standards but if that is to happen it will require many messages from track users.

regards,
Mike Lusk

GARY LITTLE SENT photographs of green and red forms of *Orthoceras novae-zelandiae* on 31 December, showing the short floral bract of that species, but the pointed labellum of *Orthoceras strictum.* **(Figs 11, 12).**

VIC VERCOE SENT a photograph **(Fig.20)** "...from Cone Creek past Sixtus lodge, past Apiti. They were on the vertical stream bank,a little hard to get at. Taken 24 August 2002." *This is the first record of Nematoceras "whiskers" from the Ruahines—Ed.*

YOUR EDITOR KEEPS old NZNOG documents in cartons in his study at home, thinking that one day all your letters, drawings and photographs will be a valuable archive. Sadly his catdoor became jammed shut, and his cat Dinger (imaginatively named for the bell she wears around her neck), clearly desperate for relief, urinated in the box. This was discovered only after the editor's wife complained of the urinary odour in the editor's office, by which time the top 10cm of papers were pulp. The remainder of the NZNOG archive is now stored more securely.

IN LIGHT OF YOUR recent article, emailed Pat Enright, "Would you still call this *Pterostylis patens*?" The plant in **Fig. 21** is indeed what we understand to be *P. patens*, with its long dorsal sepal, and its long reflexed laterals (rather different from the other large Ruahine pterostylises with the downturned dorsal sepal, illustrate in J115, Figs 3&4). Pat found it at Stronvar, Wairarapa, an area that also has *Acianthus sinclairii, Caladenia variegata, Earina autumnalis, Earina mucronata, Gastrodia* sp., *Microtis unifolia, Nematoceras macranthum, Nematoceras trilobum* agg. "Trotters", *Nematoceras macranthum* x *N. trilobum* "Trotters", *Orthoceras novae zelandiae*?, *Pterostylis alobula, Pterostylis banksii, Pterostylis graminea, Pterostylis montana, Pterostylis* aff. *montana, Thelymitra longifolia, Thelymitra* sp.

RUDIE KUITER'S *VICTORIA'S SMALL CALADENIAS* is available on line. You can download the pdf (9.2 MB) and you can send copies to your friends without infringing copyright, as Rudie gives these out for free (isn't that wonderful?). Link to file: https://download.yousendit.com/VGlmS3haTlFveE5MWEE9PQ. Hard copies will be available soon at AUD20 plus postage, from rudiekuiter@optusnet.com.au: Aquatic Photographics, PO Box 124, Seaford VIC 3198, Australia; phone 0061 3 9766 4074.

Eponymous orchids: Val Smith

Allan Cunningham (1791-1839) and *Winika cunninghamii*
Richard Cunningham (1793-1835) and *Gastrodia cunninghamii*

Allan Cunningham was born at Wimbledon, Surrey, England, on 13 July 1791, and his brother Richard on 12 February 1793, the sons of Allan Cunningham, a gardener from Renfrewshire, Scotland. Their mother, who was English, died when Richard was a baby. The boys were well educated at a Wimbledon preparatory school and a private academy in Putney.

Allan Cunningham worked for a time in a solicitor's office, but law was not to his liking and in 1808 he left to become a clerk at Kew Gardens, where his growing interest in plants and gift for science came to the notice of Robert Brown, Banks' chief botanist. He was encouraged to further his knowledge, and in 1814 was chosen by Banks to collect in the Southern Hemisphere. Cunningham sent back new finds from Brazil, explored coastal areas of Australia and ventured into the Australian interior. On his return to Sydney in 1820 he learned, to his sorrow, of the death of Sir Joseph Banks.

In 1826 he left Sydney on a whaler bound for Kororareka in the Bay of Islands. He won the respect of the Maori, and they guided him on many forest excursions in the Far North. Among the new plants he discovered was the genus *Alseosmia* with its fragrant fuchsia-like flowers. After living with the Maori and occasionally missionaries for nearly a year, he returned to Sydney, and in 1831 sailed for England with a large collection of plant material. During his 17-year stay in Australia and New Zealand, he not only supplied Kew with plants, but also made valuable additions to the Sydney Botanic Garden.

His brother followed him to Kew, and on the death in 1831 of Charles Fraser, the Colonial Botanist at Sydney, the position was offered to Richard Cunningham. In 1833 he was asked to go to New Zealand and advise on the selection of kauri to cut for spars for the Navy. He took his tent and camping gear and extended his stay, enjoying the same hospitality that the Maori had shown to his brother "Cunninama". In his letters to Sir William Hooker, editor of the *Botanical Magazine*, he described the environment and the plants he encountered: ferns, orchids, a rare hebe and a new fuchsia *(procumbens).* He returned to Sydney in May 1834, with another fine collection for the Botanic Garden. The following year he lost his life in the Australian outback.

Allan Cunningham succeeded him briefly as official botanist to the Colony of New South Wales, but collecting lured him to New Zealand again. When his health deteriorated he returned to Sydney to recuperate, and died of tuberculosis on 27 June 1839, at the age of 47.

Allan Cunningham, while in England, had added his brother's notes to his own, and with the descriptions of his predecessors, compiled *A Flora of Our Islands.* The two brothers were hard workers and ardent collectors; succeeding botanists spoke of them as the "indefatigable Cunninghams", and their name is remembered in many species: orchids, ferns, herbs, shrubs and trees.

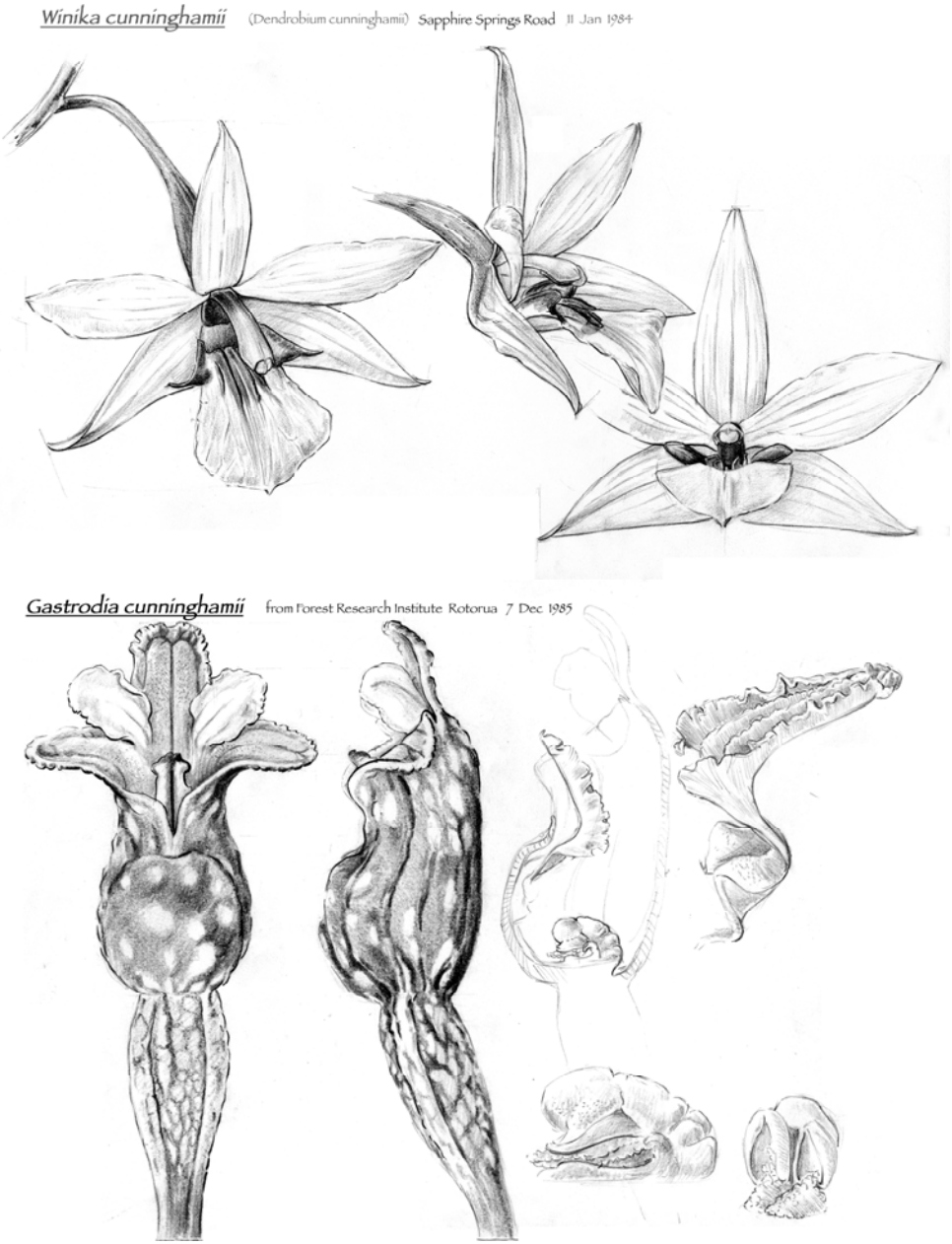
References

Glenn, R 1950. *The Botanical Explorers of New Zealand.* Wellington, AH & AW Reed.

Parsons, V 2006. Cunningham, Richard (1793-1835?). *Australian Dictionary of Biography,* Online Edition

Perry TM 2006. Cunningham, Allan (1791-1839). *Australian Dictionary of Biography,* Online Edition.

St George, I; McCrae D 1990. *New Zealand Orchids: natural history and cultivation.* Dunedin, New Zealand Native Orchid Group.



Drawings by Bruce Irwin,
from Tyler B, St George I: *Bruce Irwin's drawings of New Zealand orchids.*

Aussie notes: David McConachie

Climate change and South Australian wild orchids.

by R. Bates [Journal NOSSA February 2010 Vol. 34 No.1].

Introduction
The effect of climate change on South Australian orchids has been discussed and written about since the 1980's (Bates 1988). 'Man made' climate change began with the Industrial Revolution two hundred years ago when an increased amount of carbon dioxide, methane and other industrial greenhouse gases began to enter the earth's atmosphere. At about the same time in Australia our native forests began to be cleared at an alarming rate, replaced by a thin cover of pasture and crop species much of which stopped taking in carbon dioxide completely over summer. Soon afterwards the destruction of rainforests around the world increased. Oxygen production and carbon dioxide absorption by rainforest trees therefore fell dramatically and the percentage of carbon dioxide in the atmosphere began an ever accelerating increase. Human population too increased exponentially while the population of wild creatures decreased at a faster rate, the vegetation cover of the earth declined. Desertification due to man's activities begun 4000 years earlier continued to increase. Pollution, higher temperatures and increased acidity of the oceans saw decreasing biomass there too. Humans demanded ever more fuels to improve travel and home comforts while material wealth increased.

Early NOSSA observations:
In the early 1980's NOSSA members began to notice that average cool season rainfall in southern South Australia and southern parts of WA was decreasing. Could this have been due to rising temperatures caused by the Greenhouse effect?
NOSSA certainly thought so and if this was the case all our orchid species were under threat because of it. It was a case of double jeopardy: if loss of habitat didn't wipe out the orchids its effect on climate would.
It has taken nearly twenty years for the Australian Government to accept something that NOSSA members accepted in the 1980's.
There is of course another double whammy. Higher temperatures mean not only lower rainfall but also increased evaporation. Orchids may not cope with both.

Why Climate drying may wipe out most South Australian native orchids:
South Australia is the driest, flattest of the Australian states with the highest percentage of habitat loss occurring in the orchid rich southern parts.
Orchids were already at the limits of drought tolerance before climate drying began.
There is simply nowhere for orchids to move as higher temperatures and drier climate affect their survival..
They can not move southward into cooler, damper climes because of
A: the island effect, whereby all surviving populations are restricted to islands of native vegetation and are unable to cross farmland.
B: soil types toward the coast are different from those inland and each orchid species has evolved to require a particular soil type.
Orchids cannot move to higher altitudes because the greater area of SA where they grow is broad plain and where there are mountains the higher parts tend to be of very small areas with skeletal soils. In the meantime loss of climate-sensitive orchid pollinators and native mammals to recycle leaf litter and open up dense bush, an ever growing pestilence of smothering feral weeds and

animals and degenerating soil structure and microflora are wiping out remaining orchid populations.
Today: Bureau of Meteorology records for South Australia show that there has been a trend toward increasingly dry growing seasons in South Australia since the 1950's and at the same time increasing temperatures and lower humidity leading to increased evaporation. We in Adelaide are under threat of level four water restrictions this summer, with most of the state experiencing drought, now extending into a fourth year for many districts. The six months to March 2008 in South Australia has been the driest 6 month period on record, 2006 was the driest year on record in the orchid rich districts and the first 6 months of 2005 was the driest start to any year on record. What chance our orchids?

What we at NOSSA have observed in the last twenty years:
During the last three years it has been noted that the pastoral areas of the state have had an almost complete failure in orchid flowering and one suspects that whole populations have disappeared for no other reason than the hot dry weather. Elsewhere in the wheat belt the last two seasons have been extremely poor and late spring flowering orchid species failed completely. How many years of this before extinction of all but the commonest species occurs?

Likely effects on orchids
1: the orchid growing season is now shorter by an average of two weeks compared to the 1950's. In 2005 the season did not break until June even in the Adelaide Hills, in the past the season break occurred in April-May. On the plains in 2006 and 2007 the season was over for many orchids at the beginning of September.
2: most species now flower 1-2 weeks earlier. In 2007 Arachnorchis leptochila was found in flower at Cox Scrub CP at the end of August yet old trip reports in the NOSSA journal show that in the 1970's we had excursions to see this species in early November. Note however that August 2008 was so cold that orchids flowered weeks later than usual. Those species which seem unable to flower earlier simply abort their flowers due to drought or heat before their preferred flowering time.
3: orchids such as the delicate helmet orchids Corysanthes which can only grow in cool humid conditions now have such a short growing season that they often can not complete their life cycle. In 2007 for example most flowers were destroyed by temperatures of 30 degrees and low humidity in August within a few days of the flowers opening and in some cases before they opened.

Where spring flowered orchids have survived to flower the plants have been shorter, with smaller flowers, decreased pollination rates and more intense loss to grazing and thrip damage. Much of this has been written up in our NOSSA journal.
On the most recent NOSSA excursion to Wellington on our cool south coast on Sept 9th 2007 all orchid leaves were dead at the time of our visit and most flowers of most genera had aborted. We could only imagine what it must have been like inland.
In 2006 for the first time since the formation of the society planned field trips have been cancelled due to drought. Winter flowered species other than helmet orchids have done better because evaporation rates are still low and dews help plants survive the decreased rainfall.

Conservation ratings
I have this September revised the conservation ratings of any species which have failed to appear in any numbers in the last two orchid seasons. Several species not previously threatened are now obviously in short term danger and most must be threatened in the long term of 50-100years.

Reference: Bates R. (1988) 'The Greenhouse effect and the future of South Australian orchids' J. Native Orchid Society of South Australia, vol, 12 number 9.

The Column: Eric Scanlen

Pterostylis "Bluff" at Marsden

On 16 November 2009, Steve Reekie spotted some large greenhoods at Arorangi Reserve, Marsden, ER 48 and sent the Column some excellent photos of them (Fig 1). They had long, out-flung lateral sepals and a long dorsal sepal. They looked like Kelly Rennell's *Pterostylis* "Bluff" Fig. 2 and (J90:**32**) from Bluff Hill ER 79. The similarly, out-flung lateral sepals were the eye-catchers here and made one think that they were not the otherwise similar *Pt. banksii*. Brian Molloy thought it was *Pt. banksii* from Steve's photos. But *Pt. banksii* has those lateral sepals held back further, rising well above the galea as does at least one of its long leaves. Ian St George saw the obvious similarities between his ER 50 Fox Glacier specimen (J90:**32**) and Kelly's "Bluff" but the "Fox" taxon had shorter leaves and dorsal sepal.

Other biggies with the out-flung sepals include Phil Norton's from ER 72, the Kepler Track (J103:25,**40**) with very short leaves and short dorsal sepal, Gordon Sylvester's from ER 50, Kellys Stream (J110:**40**) with short leaves but a long dorsal sepal, the Column's from ER 72, Borland Burn (J91:**11** Fig.15) with short leaves and droop-snoot short dorsal sepal, another but smaller from the road to ER 77, Bald Hill in the Longwood Range (J91:**11** Fig.7) and a third from ER 37, Sutherland Track, Aorangi Range (J94:34 as *Pt.* aff. *patens*). This is the same as Ian's from J70:**1** untagged without description so largely forgotten. Hugh Wilson's [1] from ER 79 Stewart Island, as *Pt banksii*, has shortish leaves and the little droop-snoot dorsal sepal but was tall at 250mms. Gordon's *Pt.* "giganteum" (J115 Figs. 8 & 19) from ER 50, Lake Mahinapua, takes the cake for height at 450mms and its long dorsal sepal.

Where to from here? Taxonomists put a weight of evidence on the column so this Column examined four that he could and three of them lined up well with *Pt. banksii* in Bruce Irwin's drawings. The column wings just overtop the anther except in "Borland" and this trait didn't show in pix of "Stewart Id", "Kepler", "giganteum" or "Fox". *Pt. australis* has the anther overtopping the column wings but first thoughts of various hybrids between only *Pt. australis* and *Pt. banksii* were rejected because *Pt. australis* has relatively short sepals.

What emerges logically, is that there could be a taxon close to *Pt. banksii* with its large flowers but having those atypical, out-flung lateral sepals. This taxon prefers a high rainfall such as pertains on the West Coast, the Aorangis and Bluff Hill but it has hybridised to some extent with other species, probably *Pt. banksii* and/or *Pt. australis*. The resulting confusing traits, as above, precluded this mystery taxon from inclusion in the first edition of the Colour Field Guide but a decision had to be made to include such a widespread taxon in the revision.

So, *Pterostylis* "Bluff" has been taken as the most representative of all the contenders. Included tentatively in *Pt.* "Bluff" are "Borland", "Fox", "Marsden" "Kellys Stm." and "Aorangi" but "Bald Hill", "Kepler", and "giganteum", whilst obvious contenders, are too far from the average so are being left as distinct for the moment until better info comes to hand such as DNA analyses and/or perhaps a huge colony of pure stock in mid Fiordland. Any of the last three taxa could turn out to be the parent taxon but in the meantime, *Pterostylis* "Bluff" is the tentative title holder.

If you know of similar plants, do please send photos to the Editor with details of when and where it was captured and any pertinent details recoded about it. This is the only way new taxa can be nailed down for distribution, flowering time and consistency.

Reference

1. Wilson Hugh D., Field Guide, Stewart Island Plants. Dept. of Lands and Survey (1982) 291

21. Steve Reekie's *Pterostylis* "Bluff" from Arorangi Reserve, Marsden ER 48 on 16 November 2009. Note the out flung lateral sepals and the column wings just overtopping the anther.
22 (p.20). Sectioned *Pt.* "Bluff" from Bluff Hill, ER 79 showing column and labellum similar to those in *Pt. banksii* and to Steve Reekie's Marsden specimen.
23. *Pt* "Bluff" from ER 37, Sutherland Track, Aorangi Range (J94:34) where it was well distributed but tagged as *Pt.* aff. *patens*.

24: ***Pterostylis irwinii*** **at Arthirs Pass: photo David McConachie: see p.16.**