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Journal

120





Fig.2: *Drymoanthus flavus* at Papatowai, Catlins, January 2011.

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Cape Turnagain and *Nematoceras macranthum*

The type specimen



Clements's description is accompanied by WH Fitch's lithograph (Fig.1) and it reads,

Stem very short. *Leaf* petioled, orbicular, cordate, apiculate, deeply 2-lobed, 1-1½ inch long. *Flower* on a short scape, very large, with filliform lateral sepals two to three times its own length, and very long, slender, erect petals. *Bractes* very small. *Ovarium* short, curved. *Upper sepal* horizontal, lanceolate, acuminate, larger than the lip, which is much broader than long. ½ inch long, recurved, deep red-purple, with undulate recurved edges. PLATE LVII. A Fig.1, flower; 2, lip; 3, column: - all magnified [2].

Mark Clements designated the lectotype of *Corybas macranthus* as a specimen labelled Colenso 134(a) at Kew [1]. JD Hooker's pencil sketch is attached to the type sheet;



Hooker

The type locality

Colenso's previous lot had been sent on 30 November 44, so No. 134 was probably collected between 30 November 1844 and July 1846. On his pastoral visits and on his biennial journeys to report to the Church Missionary Society in Wellington Colenso sometimes stayed near Cape Turnagain, spending the night at a little fishing village called Wangaeahu. The Maori village was "deserted" even by Colenso's 7 October 1846 visit [4]. Whangaeahu road still leads to the coast between Porangahau and the Cape, and Bruce Hamlin thought this was probably the site of the village [5].

According to his journals, Colenso visited Wangaeahu on 10 March, 16-17 April, 24 October and 29 November 1845, and 17 February 1846. Of those dates he would have found *Nematoceras macranthum* s.s. flowering only on 24 October, a day on which he walked from Wangaeahu to Tautane fishing village, and along the beach to Pakuku (two hours south of the Cape, and 3½ hours north of Akitio) – or possibly 29 November, when he returned by the same route.

Colenso's plant

The plants in Colenso's early lists sent to Kew are numbered in series beginning each time with 1. There are four lists that include No.134, but there is only one entry that could match the lectotype, noted in a list sent to WJ Hooker in July 1846:

134. *Acianthus ?rivularis* or *n. sp.*, – among fern, clayey banks, near Cape Turnagain [3].

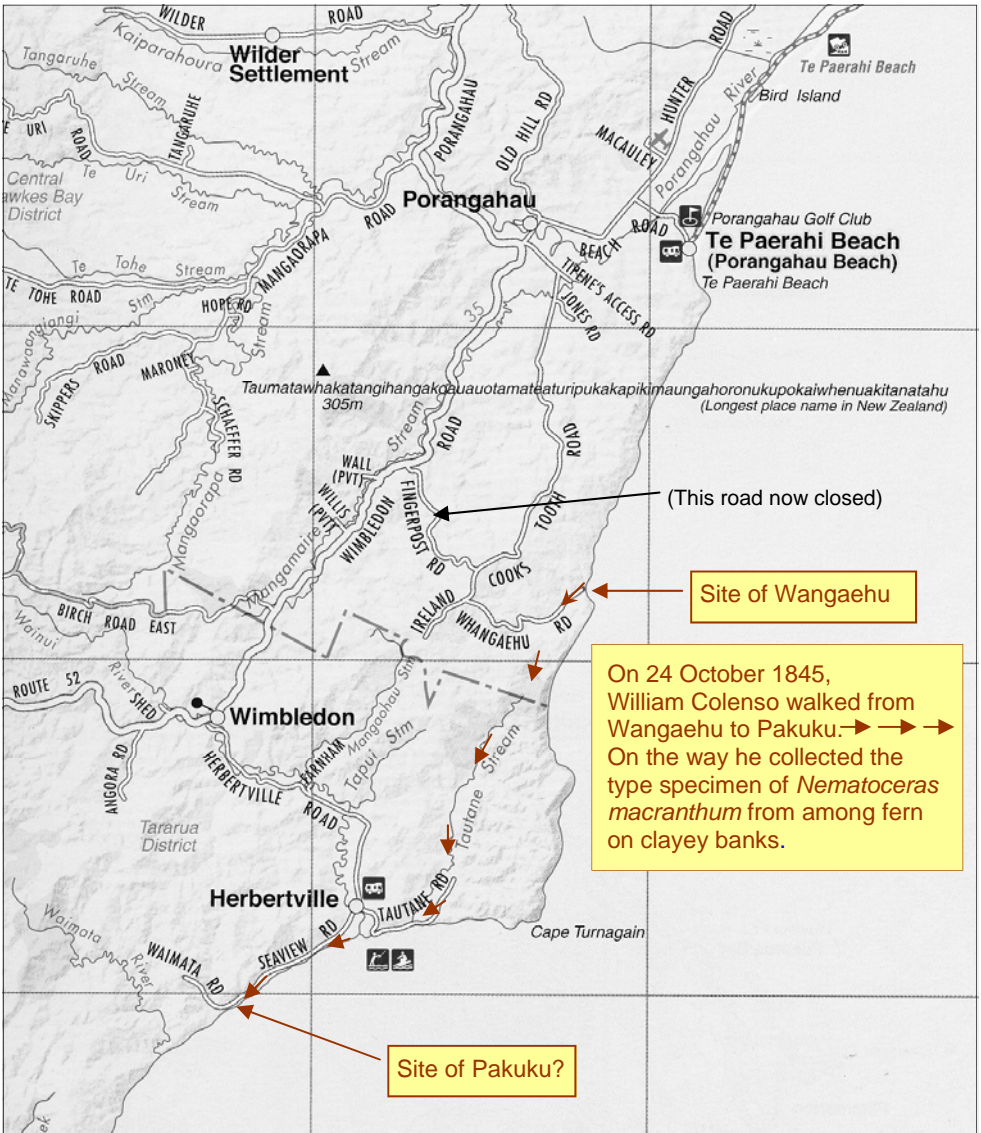
Corybas had not yet been described, and Colenso had seen Allan Cunningham's *Acianthus rivularis* (*Nematoceras rivulare*) from the Kerikeri falls: he wondered whether this was it, or a new species.

What's there now?

Tony Druce included *Corybas macranthus* in his 1966 plant list for Cape Turnagain, but there is no Druce specimen at Lincoln. Park reported the orchids found at Cape Turnagain in 1967: *Corybas macranthus* was among them [7].

Bagnall & Petersen suggest that "Pakuku" is Papuku Stream [6], south of Cape Turnagain, now along Seaview road WSW along the coast from Herbertville. Looking east, you get a great view of Poroporo, Cape Turnagain, from there.

North and east of Herbertville, Tautane Rd



leads from the mouth of the Tautane stream up to Tautane Station.

Cook's Tooth road leads south from Porangahau, passing the place with New Zealand's longest name, Taumatāwhakatāngihāngakōauotamateaturipukākāpikimaungahoronukupokaiwhenuakitanatahu, past Cook's Tooth, and at its southern end Whangaehu road heads

east toward the sea. Whangaehu is Ngāti Kere land, a fishing village again, with a camping ground, beach cottages, boats and 4WDs everywhere.

Colenso was travelling with purpose, not sightseeing, and he should have taken the easiest route from Whangaehu to Tautane. To round the Cape sticking to the coast would

have been a longer and more difficult journey than taking a shortcut across the peninsula, and Colenso wrote that they *descended* to Whangaehu on the return journey, implying an inland route.

The start of the shortcut across the peninsula is obvious: an old track formation leads across a low saddle a few hundred metres from the beach. Further inland to the west the country is much steeper, much less inviting. This track soon reaches the source of the Tautane stream, which in turn wound south through swamps and flat land to his destination, Tautane. Were Colenso’s “clayey banks” those of the Tautane stream?

I walked from Tautane Station northward on 16 November 2009. The Tautane stream runs through cattle flats, its banks collapsed and its water slimy. To the left, just before the route rises toward the low saddle above Whangaehu, are some bush remnants in a side valley, and in one of these, in a narrow cutting, a few flowerless leaves of a *Nematoceras macranthum* hung grimly on.

In the next valley however, I found access to a QEII covenanted reserve, and there, on the usual maidenhair-fern-covered bank, was a thriving colony—alas, its flowers dry and shriveled, unfertilised in this windswept place, less than 100 metres from Colenso’s track.

I had the day before been inland looking at what might be *Nematoceras papillosum* at its type locality in what was Glenross station: it was in full flower [photographs J116: p.2].

Clearly *N. macranthum* s.s. flowered much earlier, and I deduce Colenso must have found it on his route south, inland from Cape Turnagain on 24 October in the very cold year, 1845.

I looked again on 9 October 2010. This time the colony was in full flower—and it is the *N. macranthum* agg. plant others have identified as *N. papillosum*, with the lower part of the labellum white (Figs.3-6).

If there are indeed differences between the two I think we have them around the wrong way. This is the early-flowering robust *N. macranthum* s.s. that Colenso found in October at Cape Turnagain. *N. macranthum* varies in colour.

The later flowering plant with a more delicate flower from Glenross, detailed in J116 may or may not be *N. papillosum*.

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Cook’s Tooth↑ Upper Tautane stream looking south↓





Upper Tautane stream looking north toward the saddle to Whangaehu



Cape Turnagain from the south

Editorial: Jan St George

1. Te Anau orchids in January

By 2 January (the start of our Te Anau-based week's holiday) we were too late to see many orchids in flower, but among the many there were a couple that warrant discussion.

The *Aporostylis bifolia* in the moss under beech along the Waiiau river track between Manapouri and Te Anau have unusually long leaves, the longest 200mm, and many 100mm and above; an adaptation, I suppose, to centuries of survival in this dappled damp shade: I had noticed this years ago, but have never seen it flowering here, though the shrivelled remnants of flowers persisted above the swollen ovaries on elongated stems.

There is a beech on the Milford Sound foreshore that is festooned with profusely flowering *Winika* and two species of *Earina*.

The *Prasophyllum*, common throughout Otago and Southland grasslands, shows wide colour variation in single colonies – some with dark red-black stems and flowers, others with red stems and green flowers, others again with yellow-green stems and flowers.

The most common *Microtis* is the late-flowering taxon that I have reported from Wairarapa and Canterbury: the most obvious difference (from *M. unifolia* s.s.) is the shorter oblong labellum.

A small purple-stemmed *Thelymitra* growing exclusively under beech is similar to *T. purpureofusca* but has a more inflated post-anther lobe, and does not grow in clumps.

The full list is shown in the table

TABLE	stage	freq	comments
<i>Adenochilus gracilis</i>	fr	m	
<i>Aporostylis bifolia</i>	fr	m	Form with unusually long leaf, under beech
<i>Caladenia chlorostyla</i>	fl, fr	m	
<i>Earina autumnalis</i>	b	m	
<i>E. mucronata</i>	fr	m	
<i>Gastrodia cunninghamii</i>	fr	f	
<i>Chiloglottis cornuta</i>	fr	f	Wilderness reserve
<i>Microtis unifolia</i>	fr	f	
<i>Microtis</i> aff. <i>unifolia</i>	fl	a	The common <i>Microtis</i> , small oblong labellum
<i>Nematoceras</i> aff. <i>trilobum</i>	fr	a	Common under beech, stems elongated in fruit, reniform to rounded leaves, ? 2 spp.
<i>Prasophyllum</i> "A"	fl	m	Grasslands, ranging red-black to yellow-green
<i>Pterostylis</i> sp. ? <i>banksii</i>	fr	f	
<i>Pterostylis</i> sp. ? <i>montana</i>	fr	f	
<i>Pterostylis</i> sp.	fr	f	Large broad-leaved, ? <i>P. australis</i>
<i>Singularlybas oblongus</i>	fr	f	
<i>Thelymitra cyanea</i>	fl	f	In swamps
<i>T. longifolia</i>	fr	f	
<i>T. pulchella</i>	fr	f	
<i>T. sp.</i>	fl, fr	f	Under beech, aff. <i>purpureofusca</i>
<i>Winika cunninghamii</i>	fl	m	5 ridges on the labellum!

2. Survival in poor light

Wikipedia: “Chlorophyll is an extremely important biomolecule, critical in photosynthesis, which allows plants to obtain energy from light. Chlorophyll absorbs light most strongly in the blue portion of the electromagnetic spectrum, followed by the red portion. However, it is a poor absorber of green and near-green portions of the spectrum; hence the green color of chlorophyll-containing tissues.”

A few bush walks in the Fiordland and Catlins forests over the holidays reminded me that orchids have different ways of taking advantage of the rich humus of the forest floor while at the same time maximizing their nutrition from photosynthesis in low, green-dominated light conditions.



Gastrodia cunninghamii of course takes advantage of its host’s photosynthesis, and does none itself. Parasitic fungal hyphae invade the *Gastrodia* tubers, do no damage but exchange essential nutrients, providing sugars from their own host in exchange for amino-acids from the orchid.

◀ *Nematoceras* species are small plants with proportionally very big horizontal leaves, providing maximum energy from low light levels. These southern forest floors are in places carpeted with *N. trilobum* s.l., which flower only on the plants with the biggest leaves, otherwise multiplying vegetatively, so increasing their competitive advantage by using less energy on the reproductive structures with their energy-expensive volatile fragrances and colour (required for crossing), and elevated fruiting stems.

A little unnamed *Thelymitra* grows in deep shade under beech in Fiordland, its parts purple/green – leaves, stems, outer sepals – protection against herbivore predators perhaps. Its leaf is thin and fleshy. Not much chlorophyll: it must be evolving toward full mycorrhizal dependence.



▲ *Pterostylis auriculata* has broad leaves in the shade of Catlins forest, and they arch so as to maximise exposure to what little light is available.

Aporostylis bifolia has developed very long leaves here between Te Anau and Manapouri: some I measured at 200mm long. ▼



3. 100 journals

J120 is my 100th issue as editor and (if you will indulge me for a moment) presents an opportunity for reflection and enquiry.

Older members of the Group will recall that it was Dorothy Cooper who started it all, 30 years ago in 1981. She had the foresight to perceive a need for communication among native orchid enthusiasts, and started a black and white 4-page newsletter, which she edited for 20 issues. When she handed over to me in 1986 she told me that four pages would be enough.

You might think all that needs to be said about 100 native orchid species has already been said (I am sure some do), but the observations and comments and photographs keep rolling in, and the interest seems as great as ever. Since 1986 we have had two issues of 50 pages (sometimes 12 of colour), and never have less than 20: I want to acknowledge and thank sincerely the regular contributors to the journal, and to thank and encourage every member who has sent in a letter or an email with an observation, a comment, a question or a specimen.

The Group has become an incorporated society, it has a superb website that is the object of much admiring comment, we present an annual Hatch Medal, we have published an *Historical Series* and we have published a number of books on NZ orchids.

We have been affected by repeated taxonomical revisions of the Australasian orchids, and we have recognised and tagnamed many new NZ taxa as we await definitive description of some of our old favourites. We have experienced suspicion and disapproval from some, and we take that as a mark of our success.

How should the journal evolve now? how might it meet the needs of members better than it does? how might the Group evolve?

I think we need more longterm observations of orchids and colonies over time; we need to know more and do more about conservation: colonies of precious species still disappear too often.

But what do *you* think?

The New Zealand Native Orchid Journal

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THE EDITOR, THE EDITORIAL BOARD AND
THE GROUP MAY NOT SHARE AUTHORS'
OPINIONS.

Original papers

That horrible *Pterostylis* aff. *montana* thingie

By J Bruce Irwin

I was delighted to read Gael Donaghy's refreshing article on page 13 of J118 *Pterostylis* "domesticus". Apart from being bright and breezy, it demonstrated the sort of procedure we should adopt when we find a puzzling orchid. Usually we ask, "What is this orchid?" one or several keen NOG members will offer their opinions. OK, we now have a name for the plant, but is it the correct one? Gael and Graeme's playful exchange may be interpreted as indecision. It is not. Gael who holds an important position in the education system, realizes that remembering a name, supplied to you, is less valuable to you than a name arrived at after careful thought.

I remembered in standard six, the names of the principal towns of India (at that time). Georgie the teacher recited all fourteen names in a sing-song voice. Probably those names were the only thing I learnt that year. I can still recite them accurately 79 years later. Was that information ever of use to me? I don't think so. Fortunately other teachers, men we could admire, encouraged students to *think*.

In the case of *Pterostylis* "domesticus" both Gael and Graeme emerge as winners. Gael no doubt was fairly sure of her initial identification but sought confirmation. By the way I

don't think she regards *P. aff. montana* as horrible thingies. I imagine that Graeme agreed with Gael's identification, but playfully tried to introduce that mythical orchid—the South Island *P. graminea*—to clear or muddy the waters. He too was a winner. What else could the South Island *P. graminea* be, but *P. aff. montana*? Does any reader dispute my assumption?

I am reminded of occasions on excursions with Botanical Society members, being confronted by very rare plants. Usually a member of the party would suggest a likely family or genus. Then a capable botanist, often the group leader would read from the appropriate Flora, the key to species within the suggested genus. Each statement read, usually resulted in a chorus of Yes. Occasionally a dissenting voice would result in a general discussion, which ironed out differing interpretations of botanical terms so that the recital of key characters could proceed. Sometimes of course a dead end was reached so that a different genus would be tried instead. During these procedures everybody learned something useful and very importantly, errors in identification rarely found their way into newsletters recording the day's events.

Nematoceras rivulare s.l. taxa in the Nelson region: a field view

by Georgina Upson

During the early years of the New Zealand Native Orchid Group Bruce Irwin identified eight taxa of the *Nematoceras rivulare* aggregate which he felt were different. Some have consequently been identified as

previously described or new taxa and named as species clarifying to some extent the taxonomic chaos that reigned for over a century with this genus. A number remain as tagged taxa, among them *N. "whiskers"* and

N. “Kaimai”; later, in 2004, *N. “Pollok”* was added. These early observations were made from a limited number of widely separated colonies.

In illustrating a taxon a single specimen is drawn in some detail that is said to typify it. This is usually in conjunction with a description that notes features that seem specific to that taxon. Within a taxon variation can be found that no single illustration can possibly indicate, nor does a description necessarily note these variations, particularly in the early stages of investigation. There are illustrations and some form of description noting features of each of these taxa however it seems that a strong reliance has been placed on the illustrations for identification along with one or two key characters. These seem to be the principal features noted that lead to the plants being tag named:

Nematoceras “whiskers”

Colour mimics *Nematoceras papa*
Bib covered in dense short hairs (cilia).
Labellum much deeper and more rounded than *N. papa*.
A definite flat surface between the two labellum flexures.
Large flaring forward facing auricles.
The labellum tip often juts forward compared with *N. papa* which lies against the ovary.
Strongly scented.
An early illustration shows what appears to be a lack of colour in the internal basal area of *N. “whiskers”*. A later illustration shows a dark marginal band to the base from a different site. *N. papa* is stated to have a distinctive internal pattern.

Nematoceras “Kaimai”

Dark crimson labellum upper margins, with a pale translucent “bib”, pale internally except for a dark auricular patch.
Labellum margins below the cleft entrance taper (curving slightly) to an apiculus.
The cleft inner flexure sharply deflexed (about 130 degrees).

Has large, obliquely downfacing auricles.
Upright lateral sepals, horizontally outspreading lateral petals.

Nematoceras “Pollok”

Unusually wide purplish bands extend from the interior onto the “bib” of the labellum.
Labellum margins below the cleft entrance form a triangular apex (about 50 degrees) with no apiculus.
The anterior base of the labellum inclines inward with the inner cleft flexure exceptionally sharp (150 degrees) the outer flexure nearly absent marked by a narrowing of the section immediately inside the entrance, the apical portion curving down and in to touch the ovary.
The front edge of the large auricles projects beyond the ovary.
A circular rear profile as in *N. “whiskers”*

If entire populations are examined at multiple sites, rather than attempting to select and describe a “typical” specimen, it becomes apparent that there can be considerable variation in morphology demonstrated by a percentage of plants that in most respects agree with the taxon concept for *N. “whiskers”*. Most tread a “middle road”.
Labellum shape, below the upper margins to the apex, can vary anywhere between acuminate with no apiculus to suborbicular. There may, or may not, be an apiculus (**Figs 7, 8**). Buds just prior to opening tend to hold the labellum apex near horizontal, opening, spreading and descending as the flower matures. Inner flexure angles can vary from slightly rising to sharply deflexed with the labellum apex lying against the ovary, therefore flexure angle does not seem a strong guide to taxon identity. The area that forms the cleft and shoulder can vary in height and width. This alters the length of the cleft base to some extent, perhaps the labellum position when the flower is mature and the “roundness” of the profile from the rear floral base to the upper margins. Few plants are very rounded with most showing some “stiffening” of the shape although they remain more



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Nematoceras rivulare s.l.
taxa in the Nelson region.
Georgina Upson.
See p.11



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circular than *Nematoceras longipetalum*. This cleft area variation is seen in other *N. rivulare* **agg.** species and may be common to all (**Figs 9, 10**). The commonly outstretched lateral petals can, rarely, be strongly deflexed and parallel facing forward or more frequently angled forward, sometimes rising. Lateral sepals occasionally tilt forward. Auricles may be forward facing or obliquely downfacing, varying in size, although they remain comparatively large. The most noticeable difference in morphology however is the high percentage of plants (maybe 50%) that otherwise seem to match the characters of *N. "whiskers"* lacking cilia on the "bib". With a magnifier some show "shadows" of cilia on the cell surface without any protruding. Others appear to lack anything other than a few sparse minute "bumps" on the labellum surface.

Provided that these variations are accepted as normal and expected, there does not appear to be any substantial morphological difference among *Nematoceras "whiskers"*, *N. "Kaimai"* or *N. "Pollok"* unless this is to be found in the column area.

There is an array of colour patterns which can be placed in somewhat loose subgroups.

Group A; have neither bib nor cleft area crimson. This includes both *N. "whiskers"* and *N. "Kaimai"* as the internal, uncoloured lower portion of the labellum is to be found in all subgroups.

These have a green bib, crimson blotched upper margins and internally either a crimson marginal band to the base or are colourless, or nearly so, in the lower portion toward the base. They have a deep crimson auricular patch.

Group B; have bib markings, a translucent stripe and may have cleft crimson. The labellum bib appears "muddy" when viewed from a distance (**Fig. 11**).

The labellum bib may show anything from a darker green "shadow" that surrounds and

drops below the cleft entrance toward the apex to reasonably strongly coloured dark or red smudges, streaking or spots in the same area. Toward the margins there may be more sparse streaks, spots or smudges. The principal colour of the bib is green. This pattern is reminiscent of *N. longipetalum*. The upper margins are crimson blotched. Variable within the cleft, they may be green, have sparse dark spots or be almost entirely dark crimson. Internally they have either a crimson marginal band to the base or are colourless, or nearly so, in the lower portion. They appear to have a narrow translucent stripe from the inner cleft flexure to the shoulder of the cleft positioned as in *N. longipetalum*. Dark crimson auricular patches complete this description. Some plants have been observed where the dark cleft colour has spilled slightly onto the bib thus blurring to some extent with **Group C**.

Group C; have both bib and cleft crimson (**Fig. 12**). This includes *N. "Pollok"*. Each site is relatively homogeneous, the quantity of dark colour varies between sites. Colour varies from crimson only within the cleft with a small "spillage" onto the labellum bib, internally nearly colourless in the lower portion, crimson blotched upper margins with a dark crimson auricular patch, the remaining areas green at one extreme to entirely dark crimson internally with a narrow stripe (positioned as in *N. longipetalum*), the bib having crimson spilling around and below the cleft entrance toward the apex forming a central vee with green toward the bib margins. There may be spots of crimson along the lower margins of the bib.

Dense bib cilia may be present or absent in **Group A and B;** **Group C** have moderate cilia on the green portion of the bib. All groups have a sessile leaf that may be unmarked or vary in the amount of dark spotting present, a short peduncle that is either green or suffused pink that may be crimson flecked, a long slender ovary, varied lower labellum shape, dorsal sepals that may or may not be crimson flecked, large forward or obliquely downfacing auricles, are $\pm 6\text{mm}$ to

±9mm from the floral base to the top of the dorsal sepal, have lateral sepals from ±30mm to ±40mm with lateral petals ±10mm shorter, and aside from one “pure” **Group C** site, all are found from lowland areas to high montane (800metres) embedded within *N.* “whiskers” colonies in small groupings of a few plants at multiple sites. Habitat ranges from river rock ledges to streams or seepage areas. They flower from September to November. Note: **Group C** have a strong tendency to hold lateral petals obliquely forward. **Group B** occasionally have a leaf of a more reddish/grey colour which rarely is slightly thickened and cupped, some can be at the upper size limit and some hold tepals in near parallel array.

Pollination mechanisms are unknown for these plants but they do not seem attractive to fungus gnats. A small beetle is the only insect that has been observed to date in connection with them. They may be primarily self pollinating, in which case hybridizing would be rare. There is a strong indication that these are a single variable species (or part a greater unit) with forms or varieties.

One further group requires mention as they show morphological characters more aligned to *N.* “whiskers” than other species within the *Nematoceras rivulare* agg. Found at a single site on a river rock ledge where **Groups A and B** are present along with *Nematoceras orbiculatum*. Distribution of the plants suggests that they grew from the seed of a nearby plant. No *N. longipetalum* is known to exist nearer than 1km, these being very few and atypical. These may represent a further genetic step in **Group B**. Flooding may have rendered these no longer extant.

Group D; have two colour schemes. Red and crystalline cream or a dark brownish colour and green. See **Fig. 13**.

Labellum bib, a fine pale line marks the cleft entrance externally. Beyond this, surrounding and dropping below the cleft toward the apex, smudged dark colour forms a vee with further dark sparse smudges and spots radiating

toward the margins the background is of the paler colour. Upper margins are deep crimson/dark. Internally a crimson/ or dark? marginal band extends to the base with an auricular patch. Cleft and shoulder area, a muddy colour but as this was a flood damaged plant (discolouration cannot be eliminated).

Superficially more *N. longipetalum* like. The slightly broader suborbicular lower labellum protrudes and recurves more than *N.* “whiskers”, tepals are held in parallel array in some plants and the flowers are marginally larger than *N.* “whiskers”. The smudged colour and pale cleft entrance and cleft of the ciliate bib is more akin to **Group B** than the dark cleft area and more definite colour of *N. longipetalum*. Floral shape, proportion and internal colour pattern are those of *N.* “whiskers” or **Group B**. They have a long slender ovary and sessile leaf.

No comparative study has been made between each member of the *N. rivulare s.l.* complex to define properly that which separates them. Geographical isolation, often man induced, may have limited the genetic base contributing to apparently potential species as may plant climatic responses. Further study of these groups would be beneficial.

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N.Z.N.O.G. J69:13 Illustration of *C.* “whiskers”
N.Z.N.O.G. J79: 16 E Scanlen. *Corybas* “whiskers” agg.
N.Z.N.O.G. J86: 16-19 Updating the *Nematoceras (Corybas) rivularis* imbroglino
N.Z.N.O.G. J93:20-25 Tricia Aspin, *Nematoceras* “Pollok”, a new find for Awhitu.

Notes etc

Pat Enright drew our attention to an online source of low-priced Chinese botany books. This one may interest readers: *Flora of China (vol.25) Orchidaceae*.

<http://www.hceis.com/book.asp?id=8308>.

Language: English. Author: Wu Zhengyi & Hong Deyuan. Pub. Date: 2009.

Format: Hardcover; 225x285mm; 570 pages. Price: US\$90.00. ISBN: 978-7-03-025533-4. "This volume entirely comprises the orchid family, Orchidaceae, with 1,388 species in China, of which 491 are endemic, i.e., found nowhere else on Earth. The orchids of China include wild relatives of the source of the economically important vanilla pod, as well as the well-known cultivated genera *Cymbidium* and the slipper orchids, *Cypripedium* and *Paphiopedilum*. China has hundreds of other horticulturally important orchid species in genera such as *Bletilla*, *Bulbophyllum*, *Calanthe*, *Coelogyne*, *Dendrobium*, *Phalaenopsis*, *Pleione*, and *Vanda*. This volume is the only fully comprehensive and up-to-date, English-language account of the wild orchids of China."

The December *Orchadian* carried a paper (Schuiteman A, Adams PB 2010. **A broad look at *Dendrobium***) which advocates lumping all the new genera that used to be *Dendrobium* back into a single genus. It is worth reading in full, but a few quotes will have to suffice here.

"There is a long history of taxonomic changes and proposals aimed at a better understanding of the Dendrobiinae and its internal relationships, and most of these have received a mixed response. This is a clear indication that classification of the group is difficult, somewhat subjective and partly artificial, and likely to remain that way."

"Many scientists and hobbyists have expected that DNA studies would clarify and solve the

problem of difficult taxonomic groups such as *Dendrobium*, and would replace conventional methods. In some cases this has occurred, but in others the results have not clarified or may even have confused the problems...."

"On balance, we think that the arguments against splitting up *Dendrobium* into smaller genera are dominant."

A presumed consequence of this would be the sinking of Winika. Taxonomy is not guesswork, but it is indeed a very subjective science—Ed.

Kevin Matthews (December 2010): I finally got some half decent pix (albeit in the wind) of northland *Winika* which you asked for last year (**Fig.14**). This is the same flower showing the 4 raised light green labellum ribs with a 5th less prominent central rib. This is typical of all flowers. I've yet to compare the Herekino lot.

(21 January 2011): Just looking at reasons for the variation in *T. cyanea*.... note the split in the postanther lobes in the lower flower on the same peduncle (**Fig.15**). In the following image you will note split pa lobes and warty protrusions (**Fig.16**). I took these pix at the back of the farm adjacent to Kaitaia Airport.

(23 January 2011): Example of the slipper *Spiranthes* growing in manuka/rush ancient Kauri wetland (**Fig.17**). Note the tip of the floral bract is almost always browned off.

John Ewing emailed all ANOS groups (21 Jan 11): I was lamenting to Alan Stephenson of NSW that we have nothing (or at least nothing much) in flower in WA at the moment so he sent me these (and a few others) to cheer me up. Thanks Alan. So I thought I would share them with all of you, both near and far. Happy New Year!!!



Orthoceras strictum, photo by Alan Stephenson

Thanks John. That's an interesting shot of *Orthoceras*. Clements and Jones separated off *O. novae-zelandiae* on the basis of short floral bract and rounded labellum tip (cf long bract and acute tip in *O. strictum*). I have always had doubts and have seen plants with short and long bracts on the same stem. Looking at Alan's postmature plant with its elongated ovaries, I wonder if it is *O. novae-zelandiae* or whether it is just *O. strictum* whose bracts now look relatively short in comparison to the very large ovaries: what we need is someone to keep an eye on a plant periodically through a season to see how the size of the bract changes relative to the size of the ovary—Ed.

Mike Lusk emailed (28 Jan 11), "I was at Boundary Stream yesterday, looking for several things, none of them orchids, and found a number of what I thought might be *Microtis oligantha*, growing in pasture.... What do you think?"



Microtis oligantha, photo by Mike Lusk

Certainly *M. oligantha*. Small plants, late flowering, few-flowered, the flowers large compared with ovary, the dorsal sepal downturned (clearly upturned in *M. unifolia* agg.), the lateral petals straight rather than curled. These features are all rather subjective and there is overlap among taxa, but the pattern of these certainly fits *M. oligantha* best—Ed.

In a paper published by the journal *Molecular Biology and Evolution*, Etienne Delannoy and others from the University of Western Australia report on the underground orchid *Rhizanthella gardneri*. They studied the genes responsible for what would in other plants be the chlorophyll-manufacturing processes. In their abstract they write, "Since the endosymbiotic origin of chloroplasts from

cyanobacteria 2 billion years ago, the evolution of plastids has been characterised by massive loss of genes. Most plants and algae depend on photosynthesis for energy and have retained approximately 110 genes in their chloroplast genome that encode components of the gene expression machinery and subunits of the photosystems. However, non-photosynthetic parasitic plants have retained a reduced plastid genome, showing that plastids have other essential functions besides photosynthesis. We sequenced the complete plastid genome of the underground orchid, *Rhizanthella gardneri*. This remarkable parasitic subterranean orchid possesses the smallest organelle genome yet described in land plants. With only 20 proteins, 4 rRNAs and 9 tRNAs encoded in 59,190 base pairs, it is the least gene-rich plastid genome known to date apart from the fragmented plastid genome of some dinoflagellates. Despite numerous differences, striking similarities with plastid genomes from unrelated parasitic plants identify a minimal set of protein-encoding and tRNA genes required to reside in plant plastids. This prime example of convergent evolution implies shared selective constraints on gene loss or transfer.” *I wonder if the plastid genomes of non-chlorophyll producers like Gastrodia, Molloybas and Danhatchia might be similarly reduced? or what those of orchids whose photosynthesis appears to be insufficient and which are at least partly dependent on mycorrhizal associations for nutrition like Corybas cheesemanii or Thelymitra purpureo-fusca might show?—Ed.*

Mike Duncan (Victoria) emailed (3 Feb 11), “Thought I’d let you know how I went on Stewart Island last week. We had a lovely time - lucked out with 5 days without wind, and only 1 afternoon of rain. It’s a beautiful place when it’s calm. Foveaux Strait was like a mill pond when we flew over it on our way to the island (but had a nice array of white-caps on the way back).

“The orchid season was a bit more advanced than I expected with most of the *Gastrodia* (long columns), and all of the *Aporostylis*,

being finished. However, I eventually found a few really nice, fresh *Gastrodia*, including one that looked almost green (greenish-brown anyway: **Figs.20-22, back cover**). We don’t get that colour form in Victoria. (The greenish ones were) only just opening—maybe it’s a freshly opening thing, and they get darker with age? Whatever the reason, it’s very interesting to me to see any signs of chlorophyll in plants from this genus.

I was very surprised to see *Chiloglottis cornuta* growing at almost sea level (on Ulva Island and on the Acker Point Lighthouse track), and even more surprised to find them all finished. In Victoria, this species doesn’t really grow below 600+m, and flowers well into January. The *Winika* were in full bloom on Ulva Island - in particular, there are a few mature trees near Boulder Beach that are ‘festooned’ with *Winika* (always wanted to use that word to describe orchids). Equally, I think there’s going to be a great flowering of *Earina autumnalis* this year - just about every stem I saw had developing buds at the end (and more developed than I expected - might be an early year??). All the sunnies were finished (pretty much as I expected, but I was hoping for a late one). Most looked like small *nuda*-group things (or I guess *longifolia*-group things in NZ), but I came across a couple of larger plants near the start of the Fern Gully track on the edge of Oban. Plants were about 50cm tall, growing in a roadside drain, and only just finished. They’d all been pollinated (suspect self-pollinating), so I pulled off the perianth on 1 flower to view the column (**Fig.23**). Looks like *T. formosa* to me. Biggest (and nicest) surprise was seeing a patch of *Prasophyllum colensoi* along the Acker Point track. Plants were mostly finished, but there was still a few flowers open on a few plants. Wasn’t expecting to see this mostly alpine? species in flower at about 50m altitude.” *I agree it’s T. formosa, and the southernmost record so far—Ed.*

Jim Comber’s slide collection has recently been integrated in the **World Orchid Iconography**. Jim Comber was a student at

the Royal Botanic Gardens, Kew, where, as part of the practical training he was put in charge of the species orchid collection.

After his studies, he worked nearly 35 years in South-East Asia, in Sabah, Java, Sumatra and Thailand for the Swiss chemical company Ciba-Geigy, spending almost all his spare time in the forests, taking numerous photographs and notes on the wild orchids found there. Nearly all of the slides, amongst them several iconotypes, have been made between 1970-2000, most of them taken in situ in virgin forests or in Botanical Gardens. His publications *Orchids of Java* and *Orchids of Sumatra* were illustrated with more than 1,300 colour photographs. Jim Comber discovered and named nine orchid species alone or in collaboration with other authors. Also three orchid species are named in his honour: *Sarcoglyphys comberi* J.J.Wood, *Bulbophyllum comberi* J.J.Vermeulen and *Dendrobium comberi* P.O'Byrne & J.J.Vermeulen.

After his death in 2005 his unique slide collection was given to the Royal Botanic Gardens, Kew, from where Phillip Cribb transferred the estimated 12-15,000 slides to the Swiss Orchid Foundation at the Herbarium Jany Renz, Botanical Institut of the University of Basel in late 2009. During more than a year different employees working at the *SOF* selected, scanned, retouched and georeferenced the pictures, actualised the corresponding nomenclature with the help of the Kew check-list and finally integrated 5,200 slides by Jim Comber in the *World Orchid Iconography* database (www.orchid.unibas.ch). With the slide collection of Jim Comber the database of the *World Orchid Iconography* has integrated most genera and species from Java and Sumatra and progressed toward the final goal to depict all known 25,000 orchid species.

Gordon Sylvester points out that the caption for Fig. 36, p.42, J119 wrongly has “*Thelymitra media*”. It should of course be “*Pterostylis media*”—Ed.

Dr Brian Molloy elected as a Companion of the Royal Society of New Zealand

We received the following on 21 February and extend warm congratulations to Brian.

The Council of the Royal Society of New Zealand has elected a strong advocate of native plant conservation, botanist Dr Brian Molloy ONZM, as a Companion.

The President of the Royal Society of New Zealand, Dr Garth Carnaby, said the election of Brian Molloy was formal acknowledgement of the outstanding service he had given to botany and ecology in New Zealand and his willingness to share his knowledge.

“Brian is held in high esteem both in New Zealand and internationally for his contributions to understanding our native plants and their conservation. He has shared his knowledge and expertise with many people, actively engaging in a number of botanical societies over a very long period of time. Brian has a particularly high reputation in the farming community for his work with landowners to better manage vegetation of national significance. His career exemplifies true public service.”

Dr Molloy has served on the Riccarton Bush Trust for the past 36 years. He was a director of the Queen Elizabeth II National Trust from 1989-1998 and is currently a South Island field representative of the Trust. Dr Molloy began his career as a research scientist in agriculture later specialising in the conservation and ecology of native plants. Although retired, he continues to work as a botanical and conservation consultant and as a research associate with Landcare Research. In recognition of his stature, he has had two native plants named after him, the Cook Strait kowhai (*Sophora molloyi* in 2001) and the leafless orchid (*Molloybas cryptanthus*) in 2002)

CALL FOR PAPERS
(CLOSING DATE 30 APRIL 2011)



William Colenso.

**WILLIAM COLENZO
BICENTENARY**
A CELEBRATION
OF HIS LIFE
AND IDEAS

HAWKE'S BAY
9-13 NOVEMBER 2011

2011 IS THE 200TH ANNIVERSARY OF THE BIRTH OF WILLIAM COLENZO

Printer of some of the most significant documents in New Zealand history, missionary, explorer and botanist, a free-wheeling politician and controversialist – William Colenso was a maverick.

To celebrate the life and ideas of Colenso – one of the fathers of New Zealand – on the bicentenary of his birth Hawke's Bay Museum and Art Gallery is planning a programme of events from 9 – 13 November 2011 centered on an academic conference.

We are now inviting proposals for the conference, to be held from
10 – 11 November 2011.

We welcome new, established and independent researchers to submit proposals for papers and panels on all subjects associated with the life and ideas of William Colenso (1811 – 1899). Potential themes include, but are not limited to Colenso's links with Maori, botany, religion, education, politics, printing, exploration and local history.

SUBMISSION PROCESS

For all individual and panel proposals, please include the name, institutional affiliation (if any), contact address and email of the presenter, a 250 word abstract, and a brief biography that provides details such as publications and current research interests. Proposals will be subject to a peer review process.

Proposals should be submitted by email using the template provided on the website to colenso@hbmag.co.nz no later than 30 April 2011. Please ensure that the proposal includes your name, paper title and contact email address.

The conference format for individual papers will be a 20 minute presentation followed by 10 minutes for discussion and questions.

There will be an opportunity for selected papers to be included in an edited publication on William Colenso, released to coincide with an exhibition and research project to be developed by Hawke's Bay Museum & Art Gallery upon the reopening of the Museum in 2013.

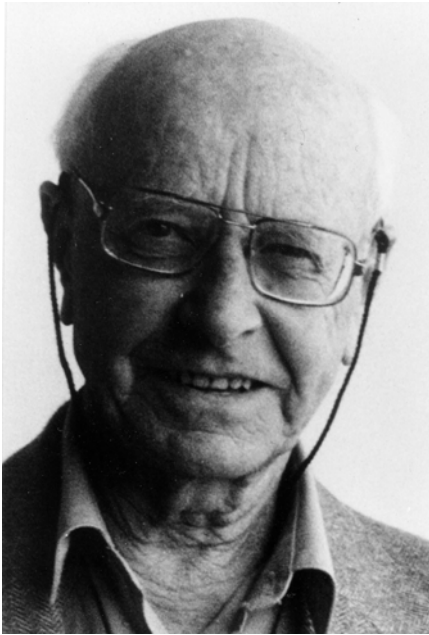
A wide range of events will be taking place as part of the bicentenary and there are still opportunities for your organisation to host an event, wherever you are in the world, as part of the celebrations. Please contact Eloise Taylor at colenso@hbmag.co.nz for more information.



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HAWKE'S BAY MUSEUM & ART GALLERY NAPIER



Dan Hatch as an octogenarian

Nominations are called for the

2011 HATCH MEDAL

to be awarded to the person who, in the view of the NZNOG Executive, has done most toward furthering the aims of the Group.

Nomination forms are available from Executive members

NZNOG *Historical Series* #16: Colenso to Balfour

Orchid extracts from William Colenso's letters to his collector David Balfour of Glenross.
\$10 in NZ

#17: *Orchids in Black & White*

Fifty important monochrome halfplate photographs of NZ native orchids by HB Matthews.
\$22 in NZ

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

Orchids on disk

From NZNOG

Bruce Irwin's drawings

(one CD: \$20),

NZNOG *Historical Series*

(Nos. 1-15 on one DVD: \$10)

The New Zealand orchids

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

and from NOSSA (editor R. Bates)

Western Australian Orchids

and

Orchids of South Australia

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

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

Aussie notes: David McConachie

Spiranthes – A Summer Treat

by Joan Broadberry
ANOS Vic Vol. 43 No.8 March 2011

With Christmas and New Year celebrations over, Terrestrial Study Group members were keen to get out into the field and enjoy the summer orchids. The first excursion for 2011 took place on the 3rd of January. Led by Reiner Richter, a largish group visited three sites close to Melbourne. The principal target species of the excursion was the beautiful *Spiranthes australis* or Ladies Tresses. For me, it was a special treat to see this unique orchid growing in the greater Melbourne area. In years gone by I have only been able to find it a few times; always after a great deal of travel. Other ANOS members must have shared my excitement, because they too could not wait and drifted down to the damp area where the orchids were growing, well before the official meeting time.

According to Jeanes and Backhouse (2006), *Spiranthes* is a worldwide genus of at least 25 species, only one of which occurs in Australia. The generic name is derived from the Greek *speira* = spiral and *anthos* = a flower. *Spiranthes* flowers from December to February in wet areas around the margins of swamps, marshes and watercourses. The tiny flowers are pink and white. Up to 60 of them are arranged in a dense spiral around a green stem to 45cm tall. Most photographers were willing to risk muddy boots and wet knees to photograph these very attractive plants.

With consensus from the group, the excursion deviated a little from its original plan and made a late morning stop at Baluk Willam Reserve in Belgrave. ANOS member, Daniel,

who was quietly doing his own thing, was a little surprised when 20 or more of us suddenly materialised in the small car park.

Dipodium roseum, the Hyacinth Orchid, was growing at the start of the track; as always, lighting up the bush. We managed to find one beautiful flower-head of the lovely Summer Greenhood, *Pterostylis decurva*, and some fresh, newly opened flowers of both the Small and Large Tongue Orchids, *Cryptostylis leptochila* and *C. subulata*. Lunch was taken at the second *Spiranthes* site, and there was much catching up and sharing of news. An impressive caterpillar of the Painted Acacia Moth, (sometimes known as the toothbrush caterpillar), provided a distraction for our cameras.

After a short but steep walk, we were elated to again spot the, now familiar, pink and white heads standing proudly above the grass. Many thanks to Reiner for leading this delightful outing. Best wishes for a fulfilling and satisfying 2011 to all those who love orchids.

The
2011 AGM
and
FIELD DAYS
of the
**NZ Native
Orchid Group**
will be held along with the
Colenso bicentenary conference
(see p. 23)
in Hawke's Bay
9-13 November

NZNOG Books
Colour field guide
to the native
orchids
of New Zealand

by
Eric Scanlen & Ian St George

82 pages of text +
187 colour plates
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including the unpublished
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From Brian Tyler, 4 Byrd St,
Levin. BandJ.Tyler@xtra.co.nz.

The Column: Eric Scanlen

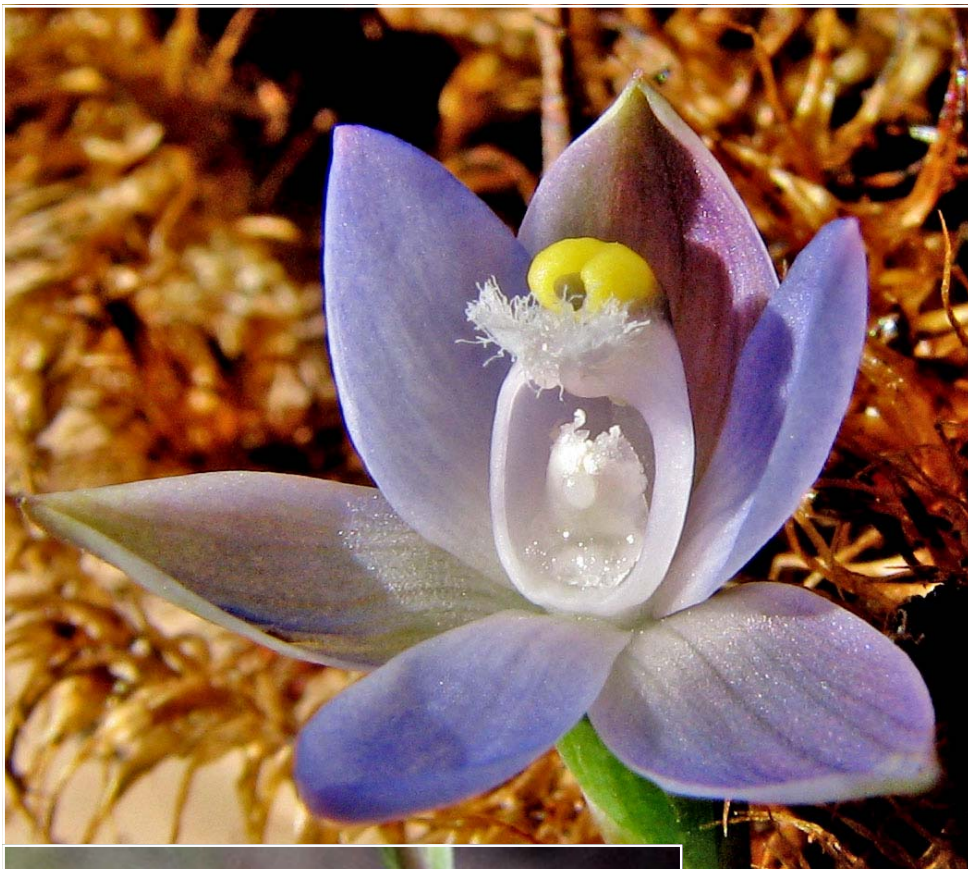
Thelymitra "O'Dea" from Ahipara?

Kevin Matthews has been watching and photographing this violet-scented and quite unique, *Thelymitra* "O'Dea" (Fig. 18) from Mr O'Dea's place in Sandhills Road, Ahipara, since November 2006. The site is a wetland with rotting kauri stumps in consolidated old sandhills, lying between the one-time Lake Tangonge and Ninety Mile Beach. In November to mid-December, up to nine flowers open one or two at a time but only on humid, tropical days. Red-tinged stems have three red-tinged bracts. The leaf is V sectioned, ribbed on mature, healthy plants and is generally held upright.

What is unique about this sun-orchid? Firstly, the yellowish tipped bud is a dark purple-brown as one can deduce from the dark shade showing through in the back-lit dorsal sepal yet sepal tips are pale yellow. Inside, the tepals are a plain, pale-blue, set off by a white column with a bright yellow and cleft, post-anther lobe having a thickened margin with a dark red-brown saddle behind. White, friable pollen scattered behind and on the stigma, along with the black *Thrips Thelymitra* which Kevin has seen in the flowers, indicate preferential *Thrips*, fall-back-self, pollination as in so many other NZ sun-orchids.

Habitat so far, is only in Sandhills Road area, ER4 but there is a similar taxon, but with dark green post-anther saddle, close to the Kaitaia-Awanui Road. A different one again, September flowering, dark blue, *T.* "like O'Dea" (Fig. 19) in Diggers Valley ER5 which varies enough to consider it a possible hybrid (or parent?) rather than the same taxon.

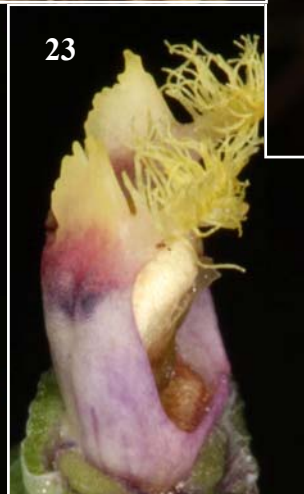
Do keep your eyes peeled for these if you are in these areas at the appropriate times.



▲ **Fig. 18;** *Thelymitra* "O'Dea", Sand-hill Road, Ahipara, 22 Nov 2007, by Kevin Matthews. Note, the dark outer colour showing through the dorsal sepal in transmitted light. Not so noticeable on the lateral sepals lit from inside, while petals and the labellum are a pale blue.



◀ **Fig. 19;** *Thelymitra* "like O'Dea" from Diggers Valley, 3 Sept 2007 by Kevin Matthews. Note the deeper blue flowers and plain olive green buds. Watch this space.



Stewart Island orchids
in January 2011:
photographs
by Mike Duncan
(see cover and p.21)