The New Zealand Native Orchid Journal

No. 155: February 2020

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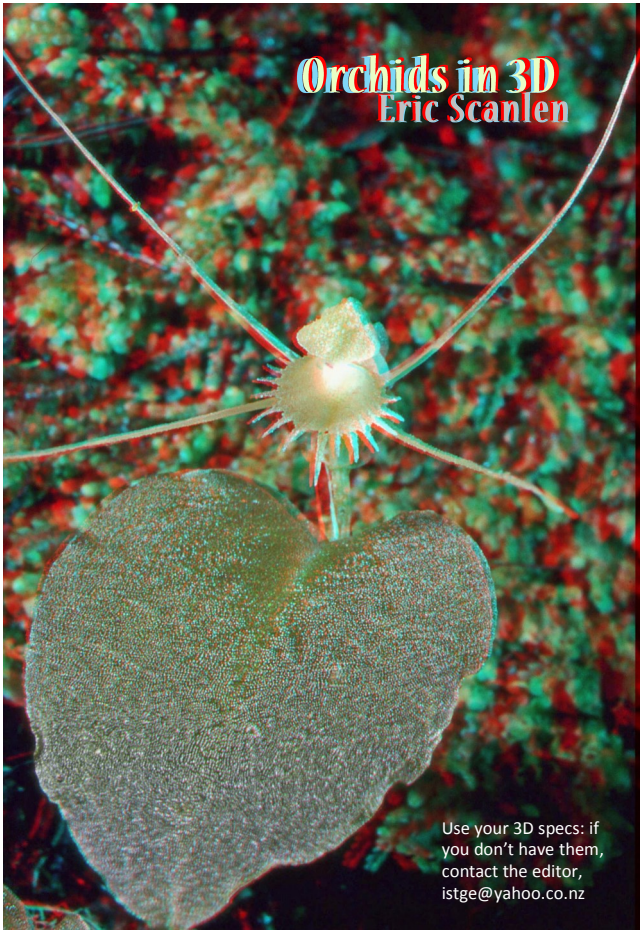
No 155 February 2020 ISSN 1177-4401

Cover: Mark Moorhouse: *Corybas acuminatus* Hollyford valley, 24 October 2019.

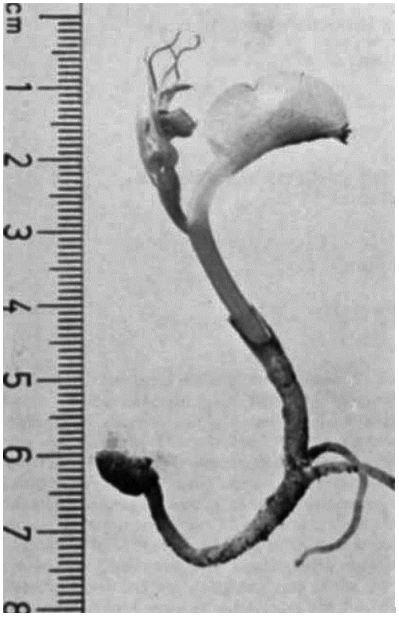
MARK YOUR DIARY: FIELD DAYS, FAR NORTH, LABOUR WEEKEND 2020



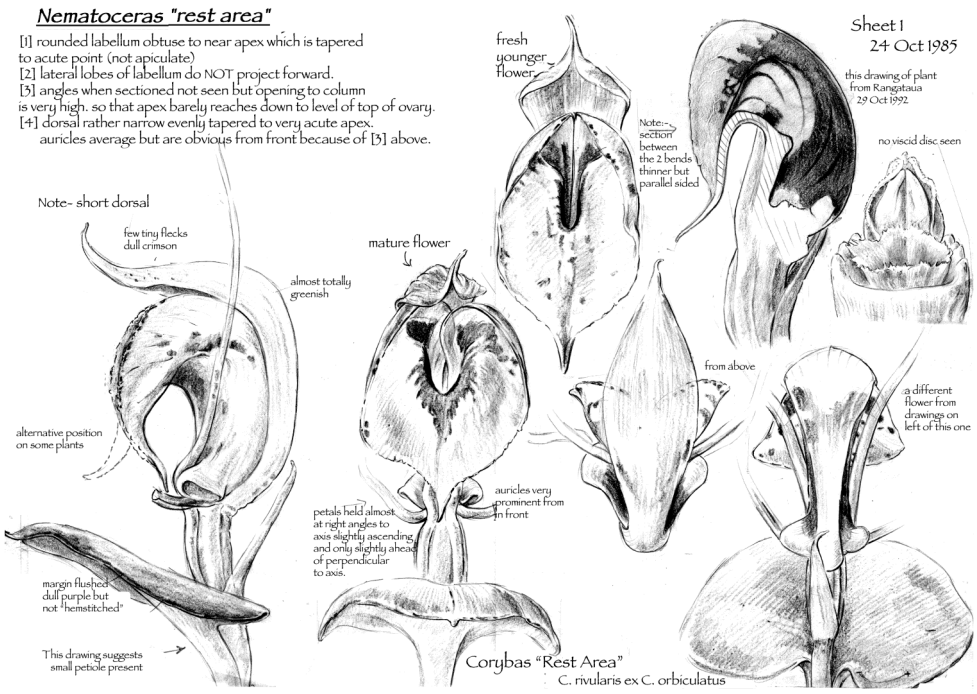
Editorial: Macquarie orchids in NZ? or NZ orchids on Macquarie?

1. Notes on *Corybas dienemus (Nematoceras dienemum)*

1978: MJ Brown and colleagues discovered what they took to be *Corybas macranthus* on Macquarie Island and described (and photographed) their discovery [1]. ▼

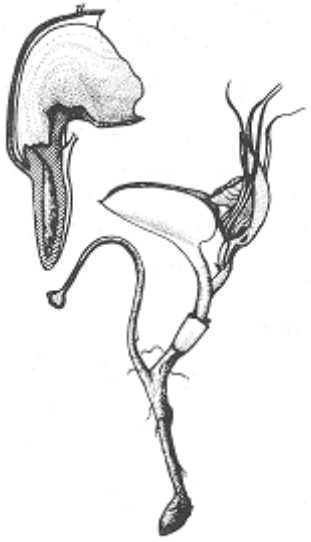


1985: On 24 October 1985 Bruce Irwin drew a *Corybas* that was new to him. He had stopped at Oturere rest area on the Desert Road and found it in flower, a tiny flower with a turned-up rather clear dorsal sepal [2].▼



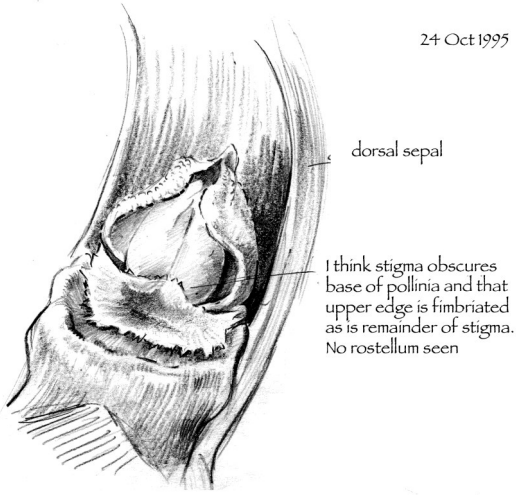
He found it again in 1992 in the Rangataua wetland and this time sketched the column: "No viscid disc seen," he wrote.

1993: Macquarie Island plants collected by JR Croft were recognised as a new taxon, and David Jones described it as *Corybas dienemus* with this drawing by D Boyer [3] .▼



How on earth did it get to Macquarie Island? Bruce Irwin wrote, "It puzzles me that an apparently fragile orchid apparently quite unlike any New Zealand species of the genus, and very different from any of the Australian species should evolve on a smallish scrap of land in latitudes where no other orchid can exist. From what could it evolve? It seems that an identical or at least very similar *Corybas* in NZ has to be the source" *[pers.comm.].*

1995: Bruce drew further specimens of *C.* "rest area" and noted "No rostellum seen" [2]. ▼



2002: Jones, Clements and Molloy [4] renamed the Macquarie plant *Nematoceras dienema.*

2003: Szlachetko reclassified *Corybas* and included *C. dienemus* in his reinstated *Corysanthes* [5].

On a 10 October in the early 2000s Pat Enright showed me a new *Corybas* with a turned up dorsal in the Tararua: I sent a photograph to Bruce who enthusiastically identified it with his *Corybas* "rest area" and asked me to send specimens. By the time I got back up there they had finished flowering and in subsequent years specimens I sent were damaged in the post, or took too long to reach him to be useful. It was a tiny colony where a trackside seepage had at some time flooded enough to dig a mossy hole.

When Carlos Lehnebach started taking a serious interest in *Corybas* we went up there and he clambered upstream and found a big colony several metres across. He later identified it with *C. dienemus.* He has also noted the lack of a rostellum and concluded the species is self pollinating.

Since then two further Tararua/Remutaka colonies have been discovered. The species is now recognised as a New Zealand endemic [6], just as Bruce Irwin predicted.

A discussion of the Macquarie plants is at [7].

Corybas dienemus,
Remutaka, October 2016

The flowers of *C. dienemus* do look rather like immature *Corybas hatchii* but appear months later, consistently in October. The July flowering plants found by Reekie and discussed by Scanlen [8] are unlikely to have been *C. dienemus,* but it must be down there in the south somewhere….

The rest area colony was smothered by volcanic ash in the spring 1995 Ruapehu eruption but the Rangataua wetland plants were found again in 1997. Those Central Volcanic Plateau plants have never been formally identified with *Corybas dienemus* but I have little doubt that is what they are.

C. "rest area" (photos Eric Scanlen). Left Oturere 9 Nov. 1996; right Rangataua 5 Nov. 1997.

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7. M. L. Skotnicki, G. R. Copson, J. Doube, L. Gadd, J. M. Selkirk-Bell and P. M. Selkirk 2009. Biology and population studies of two endemic *Nematoceras* (orchid) species on subantarctic Macquarie Island. *Papers and Proceedings of the Royal Society of Tasmania,* Volume 143(2). https://researchers.mq.edu.au/en/publications/biology-and-population-studies-of-two-endemic-nematoceras-orchid-
8. Scanlen E 2005. *Nematoceras* aff. *dienema* in the South Island? *NZNOJ* 97: 37.

See also

Clements MA & Jones DL 2007. A new species of *Nematoceras* and characterisation of *N. dienemum* (Orchidaceae), both from subantarctic Macquarie Island. *Telopea* 11: 405–411. https://ipfs.io/ipfs/QmXoypizjW3W-knFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/Nematoceras_dienemum.html

2. Notes on *Corybas sulcatus (Nematoceras sulcatum)*

1909 *Corybas trilobus,* collected by Aston, was first recorded from the Auckland Islands and Campbell Island by Cheeseman [1]

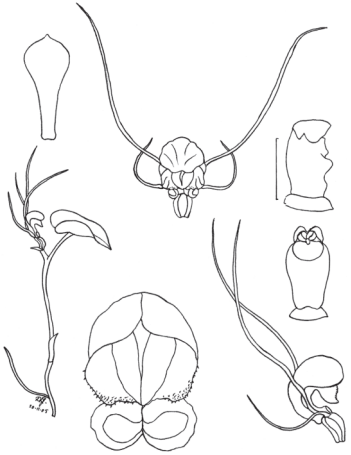
1975 Johnson and Campbell reported *Corybas trilobus* on the Auckland Islands. [2]

1989 Of the Antipodes Islands Godley reported a form of *C. trilobus* but he saw no flowers. [3]

1994 Of Campbell Island, Meurk and colleagues wrote, "The orchid *Corybas trilobus* is fairly widespread from lowlands to uplands, sometimes in open meadows, but more commonly under the shelter and shade of tussock grassland or scrub." [4]

2002 Of the Chathams, Molloy wrote, *Corybas* aff. *trilobus* "is a robust tetraploid within the diploid *Corybas trilobus* complex, reaching large dimensions in the southern tableland forests. It is common to abundant in the Chatham Islands and may also occur in the South Island and in the subantarctic islands. It is not considered to be a threatened species. As far as I am aware, this taxon is the only representative of the *Corybas trilobus* complex in the Chatham Islands." [5]

Various collections had been made from Macquarie after the discovery of what was thought to be *Corybas macranthus* in 1978 and in **2007** Clements and Jones described a second new species, *Nematoceras sulcatum* from Macquarie Island, designating a specimen collected in 1980 as the holotype, with this drawing by David Jones. [6]



Corybas sulcatus, drawing by David Jones and photo by Noel Carmichael of the plant in habitat on Macquarie (Tasmania Parks & Wildlife Service).

"The new species is probably most closely allied to the New Zealand species *N. trilobum* Hook.f., from which it can be distinguished by the dark red flower arising from below the leaf lamina, narrowly obovate-spathulate dorsal sepal, and smaller ovate-orbicular labellum with a denticulate apical margin." [6]

It is a tiny orchid, the leaf 12–20mm, the whole plant about the same height.

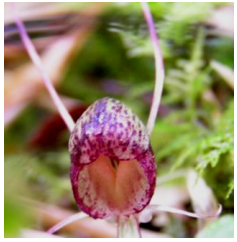
Backhouse referred it to the genus *Corybas:* thus *Corybas sulcatus* (M.A. Clem. et D.L. Jones) G.N. Backh.

Heenan photographed the Chatham plant in 2007; it was much bigger than the 20mm Macquarie *Corybas* and was tagged *Corybas* aff. *sulcatus.*

Corybas aff. *sulcatus*, Chatham Island September 2007: Peter Heenan, NZPN.

De Lange wrote, "Endemic to Macquarie Island. However, plants from the Antipodes, Auckland and Campbell Islands are scarcely any different. Plants on the Chatham Islands also approach it but seem much larger, and these plants are loosely linked to forms found in the South Island. Similar plants also grow on the mainland as Molloy suggested." [7]

Indeed, in 2002 I took Eric Scanlen to a patch of bush at Craigielea in the eastern Wairarapa where we saw a new *Corybas* aff. *trilobus.* It was scented and one flower had a dead fungus gnat jammed in the labellar sulcus. Eric photographed it and tagged it *C.* "Craigielea".

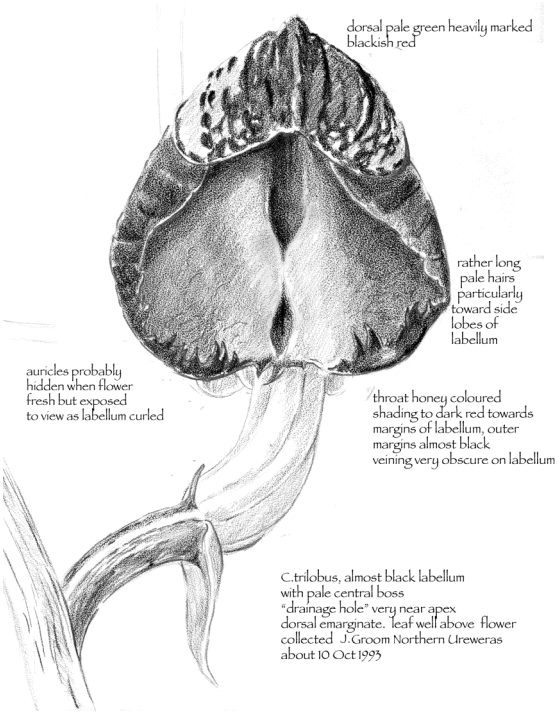


Eric Scanlen's 6 Oct. 2001 photos of *Corybas* "Craigielea"►►

▲▲ In 2009 Georgina Upson reported "an 'aha' moment" when "specimens of a *Nematoceras* I had been puzzling over for several years…. seemed to match the description of *Nematoceras sulcatum.*" [9]

Kathy Warburton photographed another red form in an Otago swamp in 2015—but it's closer to *C. confusus* [10].▲

Did Bruce Irwin ever find it? Not much evaded his eagle eye and there is a drawing that suggests he did [Tyler & Irwin p377].



None of these New Zealand plants appears to be an exact match for Macquarie's *Corybas sulcatus,* but then the habitats are different and that may explain the variation: we await the molecular biology with eager anticipation.

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10. *NZNOJ* 2015; 135: 27-28.

See also

https://ipfs.io/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/Nematoceras_sulcatum.html

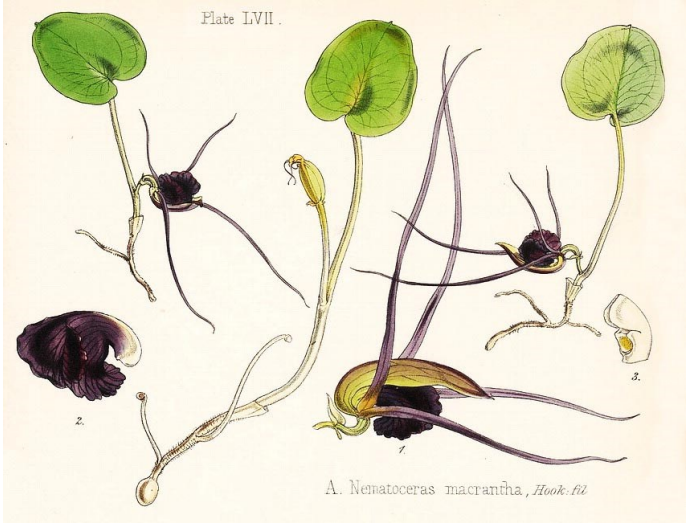
Corybas dienemus from Macquarie flowering 5 November in Hobart. Photo Natalie Tapson. https://www.flickr.com/photos/40325561@N04/6345773547

Corybas sulcatus on Macquarie. Photo: Noel Carmichael https://www.parks.tas.gov.au/MI_Flora/monocots/Nemat_sulc.htm

3. Colenso's *Corybas macranthus*

You would have to agree the type sheet for *Corybas macranthus* at Kew is a mess. All the plants thereon were sent by Colenso but from different places and at different times. Dr Hooker has labelled the whole sheet "Corysanthes macrantha Hf. Nematoceras macrantha Hf." and pinned his sketch to the left top corner; barcodes and colour charts have been affixed; Drs Clements and Molloy have visited and added labels.

The sketch with Hooker's notes to the colourist (base of labellum "light", dorsal sepal "green & purple", "lip deep blood red purple"), is the basis for Fitch's (back to front) lithography in Hooker's *Flora*.



1. A group of 7 flowers with leaves labelled by Hooker "Acianthus n.134, N. Zealand, Colenso." Colenso sent it to Kew in July 1846, noting "*Acianthus ?rivularis* or n. sp., – among fern, clayey banks, near Cape Turnagain." Clements tagged them "(a)" in 1983 and designated them the lectotype of *Corybas macranthus.*

2. A group of 4 flowers with leaves and one small leaf labelled by Hooker "N. Zealand Colenso" with Colenso's original label, "1853". That is not the year, but the specimen number. No.1853 was "Acianthus (rivularis?), bogs, near Station (ie, south of present day Napier)," sent to Kew in September 1848. Clements has tagged these 4 "(b)" and designated them syntypes of *Corybas macranthus.* In 1991 Molloy identified Colenso's no. 1853 as *Corybas rivularis,* but if so and as it was collected in Hawke's Bay it is likely to be one of that group—ie, not s.s.

3. An unlabelled flowering specimen in an envelope at lower left has not been identified formally.

4. A leaf and a flowering plant mounted on white paper at middle right have Colenso's original label attached: "2346 Acianthus ?rivularis". His notes read, "*Acianthus rivularis*?? wet thickets, E. Coast, betn. Castle Point & Cape Palliser." Molloy (1991) has identified them as *Corybas macranthus.*

5. At lower right are two plants (flowers & leaves) with Colenso's label 6158 (his note reads, "Orchid., from among dry crags, nr top of same hill" (ie, Kahurānake in Hawke's Bay) and one flowering plant with his label 6167, of which he noted, "Orchid; from wet mossy sides of a waterfall between Kahuraanake & Bare Island. A beautiful sight! to see so many there in one spot, flowering vigorously. If this sp. should prove to be ident. with 6158, it is curious that one should be in such a very contrary situation, high & dry."—Cheeseman, when he was labelling the specimens in Herb. Colenso in *c.*1902, identified this as *Corysanthes triloba.* Nobody else has attempted an identification.

4. *Caladenia minor*: merely a case of mistaken identity?

Our publications—the journal and our field and pocket guides—have been the vehicles for many opinions as to the true identity of *Caladenia minor* Hook.f. We recognise the type specimen but we have voiced several ideas as to which living plant entity it matches. Clearly it is a flower with rounded tepals.

This issue carries an erudite paper by Georgina Upson arguing cogently that we have wrongly applied the name *C. bartlettii* Hatch which should refer to the plant described by HB Matthews in manuscript as *C.* "nitidoa rosea" (with pointed tepals). Herbarium specimens identified by Hatch himself as *C. bartlettii* do indeed have pointed tepals, as does the type.

That means the entity we have been wrongly calling *C. bartlettii* is something else and it could well be *C. minor* as Georgina argues. The other NZ *Caladenia* with rounded tepals is *C.* aff. *pusilla* and some have said it is just a form of what we have been calling *C. bartlettii*—ie, of *C. minor.* Others think it possibly simply an Australian vagrant. The only common round-tepalled entity anywhere in New Zealand is the plant we have been wrongly calling *C. bartlettii.*

When he described *C. variegata* from Central Hawke's Bay in 1884 William Colenso wrote,

> A species closely allied to the two known New Zealand species, *C. minor* and *lyallii*.... *C. minor,* which is so common at the north (Bay of Islands), on clayey open hills among fern (*Pteris esculenta*) and *Leptospermum* scrub, I have never met with in these southern parts.

"These southern parts" meant Hawke's Bay to Wellington. Indeed, "*C. bartlettii*" was for years regarded as a strictly "kauri zone" orchid. Colenso said *C. minor* was "common" in the north but New Zealand is warmer now and the distribution of *C. minor* is now more extensive than it was in his time.

I think Georgina Upson is right. The plant we have been calling *C. bartlettii* is *Caladenia minor* Hook.f.

Comments from previous contributors to the *Journal* on *C. minor* would be welcome.

5. iNaturalist

People wanting to post photographs of NZ native orchids have until now been able to use NZNOG@YahooGroups.

At least that was the plan.

In the event it was unreliable and never able to be used by everybody.

Furthermore recent changes by Yahoo deleted all the material posted to date.

NZNOG@YahooGroups will cease to exist now and those seeking comments on their orchid photographs might consider uploading them to *iNaturalist.*

Chris Ecroyd has written clear advice on page 18 of this issue about what *iNaturalist* is and how to use it and Bill Campbell has added further hints on page 22.

If you just want to see what others have posted you can go direct to the orchid pages of *iNaturalist* at https://www.inaturalist.org/projects/new-zealand-native-orchids.

There is now no forum for general questions or suggestions and I think we need one. Do readers know how we might achieve a discussion group for issues other than orchid IDs?

Original paper

Solving a minor problem

by Georgina Upson

1853: *Caladenia minor* (Hook.f.) Roots spreading from the sheathed base of the stem which is covered in glandular hairs. Leaf narrow-linear glabrous. Scape has a median bract, Flowers rose coloured with a basal bract. Sepals linear-obtuse, the petals narrower. Labellum broader than long, deeply 3 lobed, the lateral lobes membranous, the midlobe broad subulate, glandular on the margin. Disc of the midlobe with stalked glands in two rows. Anther sessile on top of the column. Notes, The smallest N.Z. species, 4–6 inches high, very slender, one flowered, covered with spreading patent glandular hairs. Leaf solitary, very slender, linear. Flower nearly erect, ½ inch broad. Pink.

1945: *Caladenia minor* Hook.f. had been placed by Australian researchers under *Caladenia carnea* var. *pygmaea.* This included all New Zealand *Caladenia* species except *Caladenia lyallii*.

1945: Hatch, *Caladenia carnea* R.Br, var. *minor* (Hook. f.) Hatch *comb. nov*. [1]. Hatch doubted that *C. minor* was conspecific with *Caladenia carnea* var. *pygmaea* and Rüpp agreed with Hatch that some taxa warranted varietal status. These became,

C. carnea var. *pygmaea* Rupp (not of Rogers).
This appears to be *C. exigua* [2].
C. carnea var. *minor* Hook.f.
C. variegata Col. [3].

1947: Hatch discussed *Petalochilus* Rogers and the N.Z. forms of *Caladenia* R.Br. [4], separating *C. carnea* R.Br. var. *minor* (Hook.f.) into two jordanons (groups).

1. *C. carnea* var. *minor* Hh [5],
   C. carnea var. *pygmaea* (Rupp) (non Rog.)
   C. minor (Hook. f.)
   C. variegata (Col.).
2. A dark green flower with red pubescence, cucullate dorsal sepal and dark chocolate brown calli. H.B.Matthews (Mss name "C. calliniger"), later to become *Caladenia atradenia.*

Hatch explained his reasoning thus "The principle followed in dealing with this species (*Caladenia carnea*) is the same as that followed previously in reviewing *Corybas*. It allows that varietal rank is only warranted where there is distinct true-breeding morphological variation and that jordanons composed solely of colour forms, even where breeding true must be included under the name of the form from which they have supposedly derived".

Jordanon (1) is described thus: "Up to 30cm high, leaf narrow linear up to 20cm long x 2mm broad, flowers 1–5 white, green or pink, perianth segments more or less similar, the dorsal sepal erect, the others spreading. Labellum 3 lobed, marked with transverse purple bands. Disc with 2 rows stipitate or linear calli. Midlobe with several marginal calli, callus tips yellow occasionally fading to white. Column erect or inclined, marked with transverse bands." Hatch appears to have made his decisions only on the arrangements of the labellum calli.

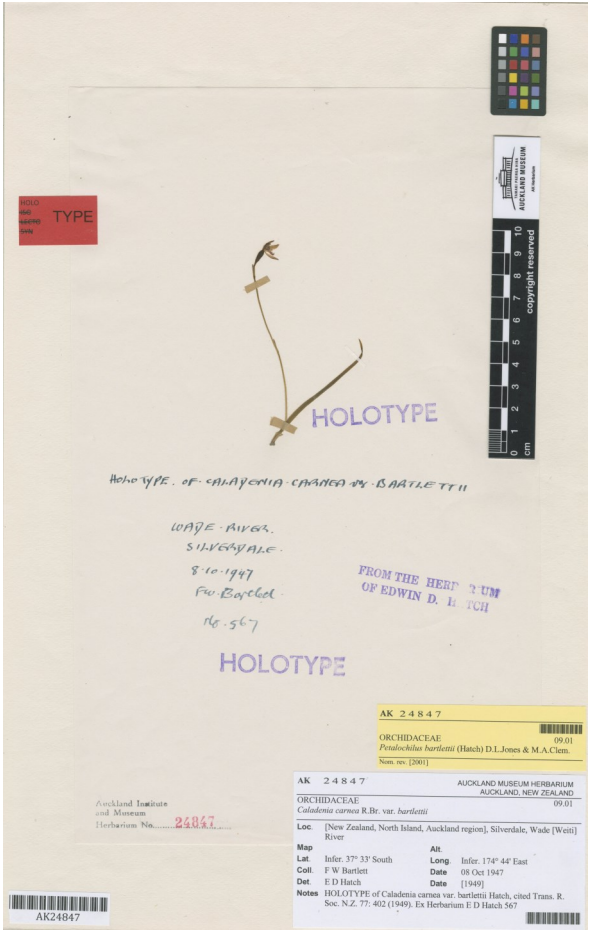
Hatch separated as a variety, *Caladenia carnea* var. *exigua* [*C. minor* (Hook. f.) var. *exigua* Cheesm.]. He reasoned, "plants smaller than var. *minor*, petals rather broad with only one basal midlobe callus. This would later be recognised as *C. alata.*

C. variegata (Col), while mentioned as a variety, appears to have been reabsorbed into the *C. minor* concept because it had several midlobe calli.

Hatch described *C. carnea* var. *bartlettii* Hh *var. nov*., related to and probably derived from var. *minor* but only sparsely pubescent, dark purplish green and the whole flower a dark glazed mauve, except the pollinia, the tips to the disc calli and the midlobe which are contrastingly bright yellow. Midlobe irregularly sinuate and without marginal calli. Distribution "Northern counties in the vicinity of Kauri trees. **H.B. Matthews (Mss name "nitidoa rosea")... Silverdale F.W. Bartlett… Holotype in Herb. Hatch no. 567**... can be regarded as the Hypotype of the variety—reasoning that these plants were without any marginal midlobe calli.

Thus Hatch described his C. bartlettii from Bartlett's Silverdale collection and regarded it as the same as HB Matthews's C. "nitidoa rosea", which had "oblong-lanceolate" (pointed) tepals.

HB Matthews's unpublished manuscript (of which Hatch is known to have had a copy) stated, "Caladenia nitidoa rosea sp. nov. Slender or rather stout, 10–25cm high. Leaf shortly sheathing below ground surface, linear-acute or acuminate, 1–3mm wide rather thick, channelled, glabrous or with distant back and marginal hairs; usually longer than the scape. Stem brown or reddish with an acuminate bract half way, moderately hairy, those on the ovary and back of segments glandular and short. Bud with a basal cleft on each side. Flowers 1–2 colour light or dark glazed pink, subtended by a lanceolate bract partly embracing the ovary, when expanded 14mm in diameter. Dorsal sepal 8mm much exceeding the anther, oblong-acuminate, concave and slightly recurved. **Lateral sepals and petals** free, hairy towards base, narrow **oblong-lanceolate**, slightly concave, about 8mm long. Labellum on a short curved claw, 3 lobed, wide and erect above the base, lateral lobes falcate-oblong, erect almost embracing the column; anterior lobe rather long, lanceolate, decurved and recurved, yellow with 3–4 stalked calli on either side and margined to near the tip with short blunt calli. Lamina traversed by a central gland crossed at the base by two rows of stalked calli between the lateral lobes, the latter crossed by six purple or magenta bars; calli dark yellow except where crossed magenta. Column curved, 5mm high, winged from base to below anther, and crossed by 5 irregular magenta bars; wings widest at



top. Anther conical, glandular with short purple hairs. Stigma prominent. Pollinia brown-yellow. Northern Counties in vicinity of Kauri trees. Flowering Oct.–Nov., H.B. Matthews.

Specimens in Auckland Herbarium, all identified as *C. bartlettii* by Hatch, are,

FW Bartlett Wade river, Silverdale 8 Oct. 1947. (Lectotype)	AK24847
Carse; N.Z. North Island Tauhei, Nov. 1925	AK108963
Matthews; Glenfield, 29 Nov. 1920.	AK108964
Matthews Woodhill, 16 Oct. 1922	AK108962
Matthews New Lynn, 26 Oct. 1922	AK108965

Details of images confirm Hatch's statement that Matthews "nitidoa rosea" and *Caladenia bartlettii* are synonymous. ►

Specimens in the Auckland Museum Herbarium identified by ED Hatch as *Caladenia bartlettii.*

Subsequently species were separated from the *C. minor* concept,

1980: *Caladenia pusilla* [6].

1989: *Caladenia alata* [7].

1997: *Caladenia atradenia, C. chlorostyla* and *C. nothofageti* were described [8]. *Caladenia bartlettii* was given a new combination recognising it as a species. "Basionym *Caladenia carnea* R. Br. var. *bartlettii* Hatch, *Trans. Roy. Soc. New Zealand* 77:402 (1949). Type Wade River, Silverdale, 8 Oct. 1947, F.W. Bartlett. (Lectotype AK24847) The Lectotype selected is stamped Holotype and cited by Hatch as such (*loc. cit*.)." Hatch himself stated specimen 567 in herbarium Hatch (now AK24847) could be regarded as the Hypotype.

1999: *Caladenia mentiens* was described—closely related to *C. pusilla* and to *C. minor*. Compared to *C. mentiens, C. minor* is stated to have relatively thick scapes, blunt sepals and petals and a prominently subulate, narrow labellum midlobe with numerous marginal calli [9].

2001: *Caladenia variegata* (Colenso) accepted as a species [10].
C. variegata (Colenso). Plant erect, 6–12 inches high, glandular pubescent, pubescence pink tipped; scape red, sub rigid not succulent, slender above leaf, stoutish below, arising from thickened node, having 3 clasping membranous acute sheaths, one at base enclosing scape and leaf, one at middle 6–8 inches long, and one close under ovarium; Root rather long, stoutish, ending in a white tuber as big as a pea; Leaf single,

half to one quarter inch from base 6–8 inches long, 1–2 lines wide, linear-acuminate, thickish, glabrous, channelled, green on upper and purplish-red on under surface, slightly ciliate at edges and very sparsely pubescsent underneath on the lower portion with long weak glandular hairs. Flower single on top of a scape (one specimen of nearly forty bore two flowers both springing from within the upper sheath and pedicelled); Perianth spreading more than half an inch in diameter; Dorsal sepal green, arched, sub-oblong-ovate, obtuse and apiculate at apex, produced, glabrous above; lateral sepals pinkish oblong, apiculate larger than petals, three nerved, pink, oblong, lanceolate, apiculate falcate; Disc with two longitudinal rows of bright yellow stipitate glands having large globular heads, extending from inner part of middle lobe down into the throat, with smaller glands scattered either side and one or two at the margin of extreme base of the middle lobe; The two lateral lobes are transversely banded with light purple, margins white, rounded at tips; Middle lobe deltiod, deeply crenulate, recurved, bright yellow; Column winged throughout, green, pubescent at top, transversely banded below with light purple similar to lateral lobes; Anther acute, tip subulate, margin finely fimbriate: Ovary 8–9 lines long, linear, obovate, sulcate, densely glandular pubescent.

There are three named NZ species that are stated to have pink tepals (aside from *C. alata*), *C. minor*, *C. bartlettii* and *C. variegata.* Each has a distinctive tepal shape and combined with other morphological differences, is readily identified.

Caladenia minor	***C. bartlettii***	***C. variegata***
small flower ½ inch or less	flower 14mm	more than ½ inch
single flower.	one or two flowers	one or two flowers
pink (purplish)	pink (purplish)	pink (“baby”)
obtuse tepals	tepals acute	apiculate
narrow labellum	lanceolate decurved recurved	deltoid
variable often numerous teeth	none to 3–4 (at base)	few at extreme base
4-6 inches tall	4-10 inches tall	6-12 inches tall

It appears *Caladenia bartlettii* has been living for many years under false pretences and is in fact the name that should be applied to *C.* “nitidoa rosea” *(Matthews)*. This then enables *C. minor* (Hook f) to stop masquerading as the present *C. bartlettii* and take its rightful place.

Acknowledgment
The author thanks kind assistance from Ian St George and the staff of Auckland Herbarium in sourcing and obtaining images of *Caladenia bartlettii.*

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2 HMR Rüpp 1944. *Proc. Linn. Soc. N.S.W.* 69.
3 W Colenso 1885. *Trans. N.Z. Inst*. 17: 248.
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5 ED Hatch. *Trans. R.S.N.Z.* 75.
6 WM Curtis *Students Fl. Tas.* pt. 4A: 133.
7 M Clements. Aus. Orc.res.1,20
8 D Jones, B Molloy and M Clements. *Orchadian* 12(5): 221–228.
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IMAGES ▷▷▷

Three pink NZ caladenias—

1. *C. minor* from Baton with narrow labellum and blunt tepals,
2. *C. variegata,*
3. *C. bartlettii = C.* "nitidoa-rosea" (photos G. Upson)

(4. *C. minor* from the far north: photo *Ed.*)

iNaturalist.nz

by Chris Ecroyd

If you are willing to use a computer then the website www.inaturalist.org is well worth joining. It covers most living organisms: plants, fungi, wild mammals, insects, arachnids, and molluscs. It is an incredible resource with over 16 million observations for over 200,000 species and covers the world.

If you are interested in using it for New Zealand plants then use iNaturalist.NZ . In June 2018 this site replaced www.naturewatch.org.nz which was started in 2005. It now has 226,000 observations of 5000 species of plants just for this country. According to the website "It is a place where you can share what you see in nature, set up citizen science and community-based monitoring projects, meet other nature watchers, and learn about New Zealand's natural history." It is run by the New Zealand Bio-Recording Network Trust, a registered Charitable Trust in New Zealand dedicated to bio-recording:

The aims are

1. To increase knowledge, understanding, and appreciation of New Zealand's natural history.
2. To engage and assist New Zealanders in observing and recording biological information.
3. To develop and support online tools to assist individuals and groups to record, view, share and use biological information.
4. To collaborate with people and groups interested in bio-recording.
5. To promote and provide secure, open, and ethical sources of biological information for the public.

How to use it

1. Take photos of a plant. Ideally it is best to take several photos of the same plant for example one of the whole plant showing some of the habitat, as well as close-ups of the leaves, and flowers at different angles.
2. Go to "Inaturalist.nz". Like many websites you need a username and password.
3. Click on "Upload" to upload photos. Uploading photos is relatively simple but is easier if you have taken photos using the GPS and date functions on your phone or camera. Photos can be downloaded at full size and the information attached to the photo will be downloaded automatically. You can upload a number of observations at a time but I prefer to select the photos of one plant at a time and merge then into one observation. Just drag the photos of a plant on top of the first one so you have several photos for an observation and not separate photos of the same plant as separate observations.
4. Click in the "Species name" and enter "Orchid" if you do not know what it is. It will offer the option "Orchidaceae" and you should click on that. At this point you can wait to see what the AI (Artificial Intelligence) suggests but do not accept it unless you agree. It may suggest something not found in New Zealand. Try to name the plant to the best of your ability. If you know which genus but not the species then enter it.
5. If you do not have location data with your photo go to the location line (third line down with a balloon symbol) and select the location from the map provided. This map can be viewed as a map or satellite image. When you have selected the site click on "Update Observation"
6. Click on "Submit Observation" and you have entered an observation.
7. If you wish to view observations already entered then you can use either "Explore" or Identify" with the associated filters. For example you can view the "Corybas" specimens collected on a certain date. The "Identify" option is a good way to select specimens to view in more detail.

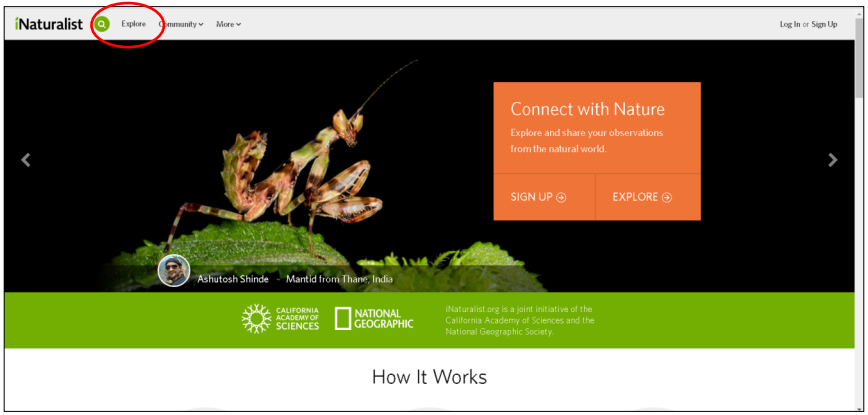
There are many people who will help identify the plants you enter onto the website, sometimes you can get them identified very quickly, depending on who is logged in at the time and whether your photos are easy to identify. The website is ideal if you have a special area and want to build up a list of the plants growing there. You can easily set up your own project and allow others to contribute. If you want to do a species list for an area it is possible to zoom in on the map, search for plants and then use the download function which can be found under the "filter" option.

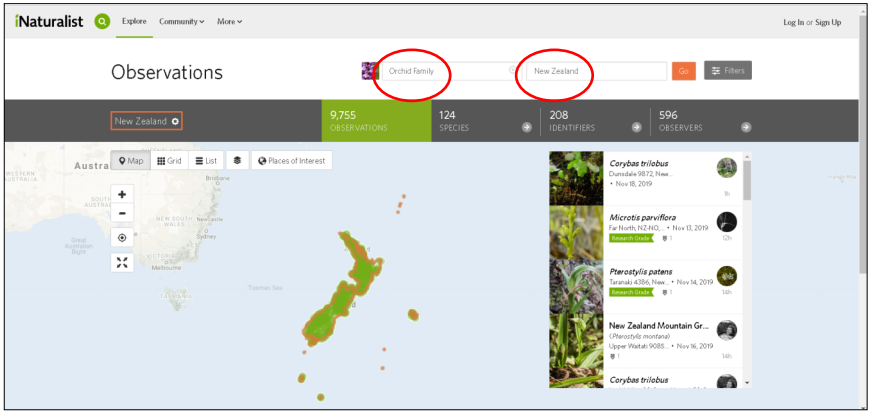
Bill Campbell emailed, "When someone first logs in to *iNaturalist* they'll see a Tab bar across the top of the page.

"The first tab is Explore and this enables a search to be made by family, genus or species, which can be narrowed down further to a search of a particular region or locality. In addition, there are optional filters which enable one to refine the search even more if required.

"It really is very simple to use and doesn't require a great deal of taxing of the grey matter to navigate about the site.

"All observations do migrate to the NZNOG website and you can easily see from there who's doing what in the orchid field. Just click on the More info tab at the right hand end of the Tab bar and then click on Orchid Observations at the bottom of the drop down list. All the latest observations will be there, along with various other lists relating to observations."



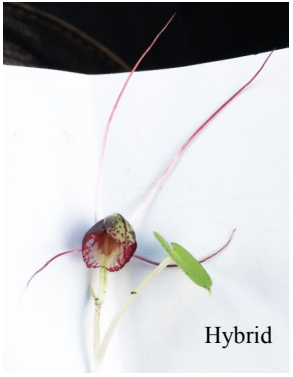


OK.
Go to https://www.inaturalist.org/ .
Click on Explore.
Enter Orchid Family and New Zealand.
And there you have it—Ed.

In the inbox

Pat Enright noted a feature of *Corybas dienemus* that may have evolved to protect the reproductive parts of the flower in the harsh weather where it grows: the dorsal sepal is curled down in front of the labellum in bud ▼, only adopting its upturned stance at maturity. ►

Jack Warden and Bill Campbell posted photographs of a *Corybas* in Dome Forest, Northland in late September. There was a colony of *C. macranthus* surrounding an unusual *Corybas,* probably a hybrid between the *C. macranthus* and a member of the *C. trilobus* group. Hybrid ▼ *C. macranthus* ►



Hybrid

The New Zealand Native Orchid Journal

The main aim of the New Zealand Native Orchid Group is to improve knowledge about native orchids, so we allow others to copy material published here, provided the source and author are acknowledged. Authors should note this condition of publication. The editor and members of the Group may not share authors' views. **Chair**: David McConachie, 42 Titiro Moana Rd, Korokoro, Lower Hutt, david@mcconachie.nz. **Secretary**: Pam Shearer, 7 Ring Terrace, St Marys Bay, Auckland. pam@insidetrack.co.nz. **Treasurer**: Judith Tyler, 4 Byrd St, Levin, **Books and publications**: Brian Tyler, 4 Byrd St, Levin, bandj.tyler@xtra.co.nz. **Webmaster**: Michael Pratt, www.nativeorchids.co.nz, Michael@nativeorchids.co.nz. [The ***website*** posts journals six months after first publication]. **Editor**: Ian St George, 32 Hawkestone St, Thorndon, Wellington 6011 istge@yahoo.co.nz. [The ***Journal*** is published quarterly from February; deadline for copy is the first of the month prior. Please send email or printed copy].

In the November 2019 *NOJ* "Type Locality" (154) I tried to clarify the identity of *Pterostylis speciosa* Col.

The discussion omitted mention of Eric Scanlen's article in *NOJ* 151: 8, in which he showed the plant at left ◄, photographed at Horopito on 13 December 1996.

Compared with the Type (▼) its lateral sepals are not reflexed and its dorsal is tightly zipped to its petals, but it is a contender for the name.

(Best viewed with 3D specs).

A Marlborough photographer sent images (eg▼) of an unusual *Chiloglottis* on 14 Oct 2019, remarking, "the flowering specimen was different to all the others in that a third leaf was surrounding the flower. All the others, even in the same group but still in bud, only had two leaves and the buds stood free of the leaves." *This is the plant Eric Scanlen has tagnamed Chiloglottis "big bracts", mentioned in NZNOJ* ***125:****15,16,23-25;* ***129****:25;* ***150****:24. The observation that it was among normal plants suggests it is an occasional mutation—Ed.*

Jack Warden posted this image of what appears to be *Corybas* "Remutaka" from Hoe-O-Tainui in the Waikato on 13 October 2019 ►

Corybas acuminatus in the Hollyford Valley: photo. Mark Moorhouse.

The Labour Weekend Fiordland *Corybas* caper attracted eight inquisitive souls whose courageous curiosity was rewarded with masses of flowering plants: *Cc. acuminatus, hatchii, orbiculatus* (in bud), *macranthus* (in bud), *trilobus* s.s., *hypogaeus,* "Trotters", *vitreus, "*pygmy". Some of us were brought up to date with the identifying features of the members of the *C. trilobus* agg. and some of us were disturbed by the morphological complexities of—and overlaps among—those entities.

For current views of the *Corybas trilobus* clade, see Jeremy Rolfe's useful article at http://www.nzpcn.org.nz/publications/Trilepidea-155-161030.pdf , which shows *C. trilobus* s.s. is not *C.* "Trotters", but a plant perhaps most anatomically like *C. vitreus*, only with a more ragged, almost bilobed lower edge to the labellum. Cara Lisa Schloots posted the photograph below to *iNaturalist* on 16 November, from Leith valley, Dunedin. Note the bilobed, ragged, striped labellum.

Corybas trilobus s.s.

If you receive the *Journal* by email, you should also have received a copy of Eric Scanlen's *Index* with this issue, updated as far as no. 154. If you would like a pdf copy, please email the editor.

Down our Wairarapa roadside on a hot, hazy 23 November was a spectacular display of *Thelymitra pauciflora* …

… and among the *Thelymitra pauciflora* was the local grassland form of *T. longifolia* s.l. with its white flower, shallowly notched column midlobe and narrow leaf (matching the description of *T. alba* Col.). Some plants looked like hybrids, their column, notch and tepal colours intermediate between the two.

1, 2. *Thelymitra pauciflora;* **3, 4.** *Thelymitra longifolia* s.l. *(T. alba);*
5, 6. Putative *T. pauciflora* x *T. longifolia* s.l. hybrid.

Pat Enright made interesting observations at Waiorongamai in the western lake Wairarapa flatlands: a redstemmed *Caladenia chlorostyla* s.l. but with only a little red on the stalks of the disc calli, a very small flowered form of *Pterostylis porrecta* and a form of *P. banksii* s.l. about 60% of its usual size—a similar plant to those found at Airlie road Plimmerton which I tentatively identified a while ago as *P. emarginata* Col. with its notched labellum tip.

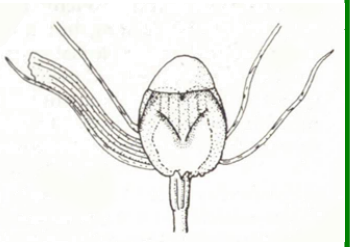
Waiorongamai orchids

1, 2. *Pterostylis porrecta.*
3, 4. *Caladenia chlorostyla* s.l. (redstem).
5, 6, 7. *Pterostylis* aff. *banksii (P. emarginata).*

It was therefore instructive, on 25 November, to visit Airlie road, Plimmerton and contrast *Thelymitra longifolia* s.s. with its wide flat floppy leaf and its entire (not notched) midlobe margin; to see *Pterostylis emarginata,* again looking very like a small *P. banksii,* with its emarginate (notched) labellum tip; and to see *Caladenia chlorostyla* "redstem" with its variably-red-stalked calli. These images might be profitably compared to those of similar plants in the preceding pages.

Dorothy Cooper wrote, of *Corybas trilobus*, in her classic book on NZ orchids, "Deformities in the flower are more common than in *C. macranthus*, extra tissue occurring on one or more of the sepals and petals". Her sketch is below.

I had never seen that until Labour weekend in the Hollyford, where one flower nicely exemplified her contention.



Caladenia variegata, Wairarapa, by Pat Enright.

Melanie Brigden emailed on 13 December, "Attached is a lovely image of *Caladenia alpina* taken by my orienteering friend Linley Earnshaw at Boyle River near the outdoor education centre." ►

We have been using the name Caladenia alpina for some of the more robust forms of C. lyallii s.l., but online photographs of that species in Australia suggest it is a different plant. The midlobe marginal calli are regarded as important.—Ed.

Photographs above & left from Retiredaussies.com reproduced with permission.

The 2019 AGM & field days in & around Dannevirke

A good gathering of NZNOG members met, thanks to Cheryl Dawson's efforts, at the Dannevirke Service and Citizens' Club on 6 December, ate, drank and talked, and next day headed for the Apiti Track in the Ruahine foothills and on Sunday morning to the Coppermine track.

The Apiti track was warm, dry, gentle and highly productive orchidwise. We walked, ate, drank and talked and we loved it. At the AGM David McConachie stepped down as Chair (see next article) and Gael Donaghy stepped up (see the article after that), attenders made some useful suggestions for the future (watch this space) and the Club provided a scrumptious buffet dinner with lashings of gravy (so we ate, drank and talked a bit more).

After that Carlos Lehnebach updated us on his orchid conservation research projects. He is truly a Gem of the Bush.

I confess to fleeing, on Sunday, from the Coppermine track after a few hundred metres of soaking rain (I hadn't brought a coat) but by others' accounts it was another rewarding exercise.

Pam Shearer kept a tally of the orchids encountered: **Apiti track** 7 December, *Aporostyis bifolia* lf, *Caladenia*—red stem with pinkish petals in bud—unlike the colour of "minor", *Caladenia* "minor" fl., *Caladenia chlorostyla* fl., *Caladenia* "greenstem" fl. , *Caladenia* with red stem & totally green ovary (no stripes) seed, *Chiloglottis cornuta* lf & seed and fl.—flower pink, *Corybas trilobus* agg. lf, *Corybas* ?*macranthus* lf, *Corybas oblongus* fl., *Corybas hatchii* lf, *Corybas hypogaeus* lf, *Corybas* ?*iridescens* lf/flower finished/bud, *Earina autumnalis* lf, *Earina mucronata* fl., *Winika cunninghamii* lf, *Gastrodia* bud, ?*cunninghamii*, *Orthoceras* bud, *Prasophyllum* ?*colensoi* fl., *Prasophyllm* sp.—green fl., *Peterostylis*—juvenile lf, *Pterostylis montana* sp. bud/seed, *Pterostyis cardiostigma* fl. , *Pterostylis patens* fl., *Pterostylis subsimilis* fl., *Pterostylis irsoniana* fl., *Thelymitra purpureofusca* bud, *Thelymitra nemoralis* bud, *Thelymitra longifolia* fl., *Thelymitra nervosa* fl., *Thelymitra hatchii* fl., *Thelymitra* sp. —v small plant with a red lf. **Coppermine track** 8 Dec., on Coppermine road verge, *Microtis unifolia, Microtis parviflora,* Coppermine Track rained off, *Gastrodia* sp., probably *cunninghamii* in bud, *Pterostylis* sp. leaves juvenile & seed pod, *Pterostylis banksii*? , *Pterostylis graminea* seed, *Corybas* ? *macranthus* lf, *Corybas* ?*iridescens* lf, *Earina mucronata* fl. on bank, *Microtis* lf.

Most remarkable to my untutored eye were the *Caladenia* aff. *chlorostyla* with the pink-tinged midlobe and the remarkably voluminous flower of *Pterostylis subsimilis:* how big might its pollinator be?—*Ed.*

The Hatch Medal 2019

Gael Donaghy's first task as newly elected Chair of the NZNOG was to present the 2019 Hatch Medal to retiring Chair David McConachie. Her panegyric follows,

David McConachie has been our Chair since 2007. So for more than the last ten years he has guided, in his quiet, benign and gentlemanly way, the NZ Native Orchid Group and its annual meetings. He has been a frequent contributor to our journal, with field trip reports and contributions extracted from the Australian native orchid literature. He was one of the group that put our Pocket Guide together.

But David started on orchids much earlier. It was in 1984 that he and a friend discovered near Elsthorpe the new orchid that would become known as Pterostylis porrecta, described 13 years later by Molloy, Clements and Jones. It should have been called "McConachie's orchid".

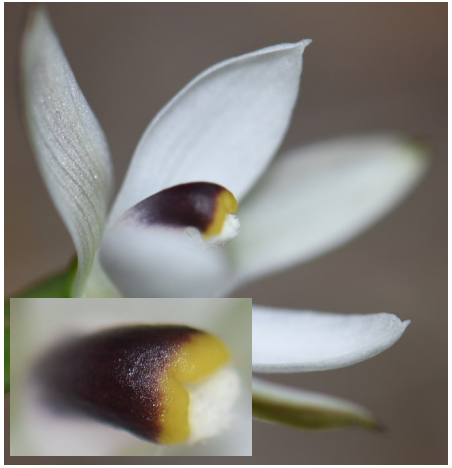
We thank David most sincerely for his years of service to our Group and we now recognise his considerable contributions to New Zealand orchidology by presenting him with the 2019 Hatch Medal. In wishing him well for the future we hope he will continue to contribute in the ways he has.


Photo Carlos Lehnebach

Gael Donaghy, new Chair NZNOG

Gael's background as a tramper, tourist guide and biology teacher has always fed her interest in the outdoors, and led to learning about New Zealand plants, animals and their ecology. Living in Invercargill for many years she had plenty of scope for these activities with the bush and mountains of Stewart Island, Fiordland and Central Otago all close. She discovered orchids in the 1980s when a friend gave her some stencilled pages about orchids, written by Ian St George, and this kindled an interest in this new aspect of botany. She still has her Dorothy Cooper book, covered with handwritten notes of where and when she found particular taxa. Joining NZNOG in the midnineties when she was living in Golden Bay, she was soon sending specimens that didn't seem to fit Cooper's descriptions to Bruce Irwin for identification. By coincidence, when she and Graeme moved to Tauranga in 2000, they bought a house only 2 blocks from Bruce. Her greatest thrill is finding and photographing orchids in their native habitat, here in NZ and around the world.

On the afternoon of Christmas Day, in our front paddock at Admiral road, Wairarapa was a *Microtis* with a tapering triangular labellum like that of *M. parviflora*—and these were 7cm tall: "slender to robust, 7-50 cm high" says the South Australia website, so at the lower limit. All in the colony were similarly tiny and rabbits had eaten the leaves. —*Ed.*



Down in the Ruakokopatuna headwaters, Haurangi range, southern Wairarapa on 30 December were *Prasophyllum colensoi* fl., *Thelymitrae purpureofusca* fl, *nemoralis* fl, *longifolia* fr. *nervosa* fr, *hatchii* fr, *Gastrodia cunninghamii* fl.

In his descriptions Colenso wrote that *T. nemoralis* (below left) had column arms "rather shorter than column and inclined at top towards it, densely globosely-plumose at tips, white," whereas in *T. purpureofusca* (above left) "the plumose appendages are more produced and rise above the column".

Some of the *Gastrodia* lacked red pigment and looked green —Ed. ►

A typical clump of *T. purpureofusca:* "It has also a peculiar habit of growth, being often found in little clumps (like crocuses and jonquils), from which arise 6–12 scapes". (Colenso)