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**Orchids in 3D**  
**Orchids in 3D**

Use your 3D spectacles:  
if you don't have them,  
contact the editor,  
istge@yahoo.co.nz

Shenstone Block, Te Pahi, 11 October 2002

# From the Chair: Gael Donaghy



Kia ora tatou

The orchid "spring" is well underway, giving us cheer and a purpose now that we are released from lockdown, and can travel to wander about at will. In our trips up the Coromandel Peninsula we have seen *Pterostylis brumalis* in full flower,

*P. alobula*, *P. trullifolia* and *Acianthus sinclairii* in early flower, *Cyrtostylis oblongus* in early bud, and a few leaves of *Corybas oblongus*. There are also a good number of *Thelymitra* leaves up too.

Graeme and I love orchid hunting in West Australia and I keep my eyes on some Facebook pages there. There was an interesting link there to the website of Kings Park and Botanic Garden. I found it very interesting in the light of the article by Carlos and colleague Lara Shepherd about orchid mycorrhiza. Scientists there have been trying to grow some of the most endangered species of orchids, and have announced they have succeeded in persuading the very beautiful and notoriously difficult to grow *Thelymitra* "Queen of Sheba" to propagate in the lab. To do this they have isolated the fungus from the roots of wild plants, uncovered their nutritional requirements, and successfully inoculated seeds.

<https://www.bgpa.wa.gov.au/about-us/information/news/2757-orchid-research-breakthrough?fbclid=IwARlXrln8c7qhIQxqlOms-GdrTv50u5qKoPi6UrQ9zeFinuNEK8vMfE7mLhc>

There was a suggestion in the last journal that NZNOG members might like to join the Facebook group called "New Zealand Native Orchids" which, I found, has the disclaimer "I want to be clear that this Facebook page has nothing to do with the NZNOG people and is entirely my own effort. Anything good or bad that happens here is down to me." I had a bit of trouble finding the page – did so in the end by logging into to my Facebook page and then searching for the specific group. And then I found I had to request to join, which I did. It took a couple of weeks to be admitted (background checks??), but I now can see everything on the page. It is being used by people to post photos, asking for identification, and sharing finds. I see several of our members posting on it. It will be a useful place for discussing various aspects of NZ orchidology.

In this journal you will find Ian's list of current names – such a useful tool so we can be sure we are talking about the same entity (most of the time anyway.) And the editorial about the apparent differences within the *Thelymitra longifolia* complex should keep us on our toes when we go to Northland. Natural variation in plants can make it difficult to place plants in the correct taxon, and it is articles like this one that help us see groups of similar plants that may warrant species status.

A reminder: at last year's AGM, Mark Moorhouse suggested we have a topic set for research/discussion by the Group at the AGM each year. This was agreed to by the Group, and the topic of "Natural Hybridisation in Orchids" was chosen. If you are coming to the Northland AGM is October, please bring your thoughts and photos!

# The type locality: Ian St George

## *Thelymitra imberbis* from the Bay of Islands

In 1853 JD Hooker's *Flora of NZ* was published and included among the orchids was *Thelymitra imberbis*, which, he wrote, Colenso and Sinclair "etc" had found at the Bay of Islands "etc".

2. *Thelymitra imberbis*, Hook. fil.; gracilis, caule paucifloro, folio lineari, floribus erectis parvis flavis, bracteis ovario brevioribus, sepalis petalisque late obovato-oblongis acutis, staminodiis columnae æquilongis apice crenatis nudis v. obscure fimbriatis.

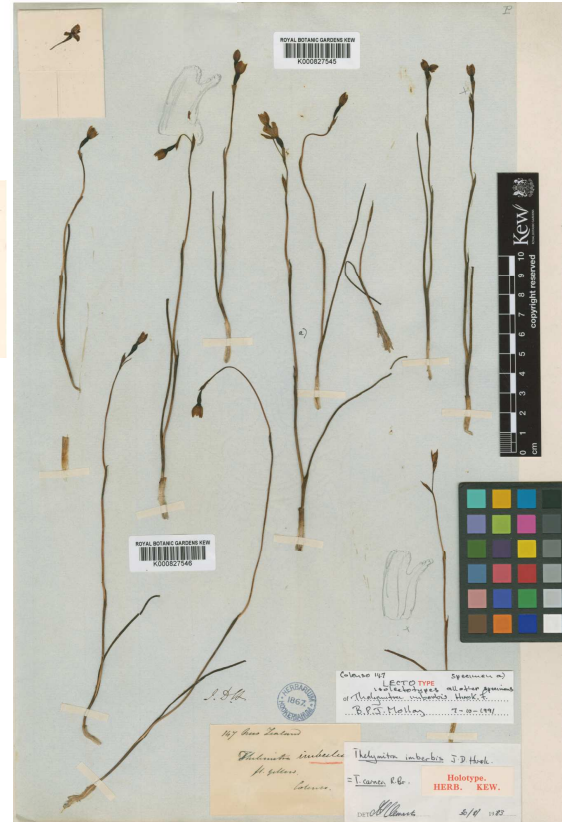
HAB. Northern Island. Bay of Islands, etc., Colenso, Sinclair, etc.

Stems slender, 4 inches to 1 foot high. Leaf narrow linear. Flowers few, small. Bracteæ broad, acuminate, shorter than the ovary. Perianth yellow,  $\frac{1}{4}$  inch long; sepals and petals broad, acute. Column as long as the blunt crenate or fimbriate staminodia.

The type specimen (along with ten other plants) at Kew is shown at right on this page, along with Hooker's initials and his sketches of the column, notes by Brian Molloy and Mark Clements and a label on which is written "147 New Zealand/ *Thelymitra imberbis*/ fl. yellow/ Colenso".

Nowhere in Colenso's letters or specimen lists to Kew is there any mention of this plant, either by name, colour, number 147 or any other distinguishing feature. In fact the only mention of it in Colenso's extant writing is much later, in his 1865 "Essay on the botany, Geographic and Economic, of the North Island of the New Zealand group" published in the *Transactions of the New Zealand Institute* 1: 233-283, in which he listed the orchids in "the Bay of Islands area, from 35° to 36° south... *Prasophyllum pumilum*; *Thelymitra imberbis*; *Pterostylis trullifolia*...".

There is a similar specimen sheet (next page) at Te Papa from Herb. Colenso, the specimens identified by Cheeseman, first as *T. longifolia* (he thought all Colenso's thelymitras were *T. longifolia*) later as *T. imberbis* and then by Molloy as *Thelymitra carnea*. As with too many of Colenso's specimens, neither locality nor date is given.





Andrew Sinclair arrived in Paihia on the *Favorite* on 24 October 1841 while Hooker was there but Colenso away. On 4 November Colenso having returned, the three men set off up the Waitangi for a visit to Te Waimate, where they spent the night, returning by Kerikeri.

It seems likely the plant was collected by the usually meticulous Colenso during Sinclair's visit in 1841 but the time and place are now lost.

The plant is not mentioned in Hooker's journal of his explorations in the Bay of Islands. In his 1864 *Handbook* Hooker remarked, "Much better specimens of this... are wanted to establish their distinctness; this is very like the Tasmanian *T. carnea*, but the flowers are said to be yellow." (My emphasis: ie, Hooker did not see it fresh).

In his 1906 *Manual* Cheeseman wrote, "in the original description the flowers are said to be yellow, but they are flesh-coloured in all the specimens I have seen. It is probably identical with the Australian *T. carnea*."

In 1946 Rupp and Hatch "reduced Hooker's *T. imberbis* to varietal rank (of *T. carnea*) with some hesitation." NZ plants were more robust and the column stouter than in Australian forms. "But the morphology of the

flowers is almost identical, and there does not seem to be any distinction warranting specific separation."

In his 1951 paper Hatch called the NZ plants *T. carnea* var. *imberbis* and wrote their colour was (a bob each way) "creamy-pink".

Moore accepted Willis's opinion that the NZ plants are *T. carnea*.

Eric Scanlen disagrees: "... they are so different.... Column wings on my *T. imberbis* stand upright; none of my several *T. carnea* have this trait."

I have never seen the yellow *Thelymitra* so I asked Kevin Matthews, who responded to my questions,

"I'm reckoning it to be a colour morph, flowers late September early October. Has varying shades of yellow.... One notable difference is that it has a slight curl to the outer edge of the petals as seen in the photos, compared to the pink from same locality. Growing in ancient kauri gum land, in sparse scrubby manuka and *Schoenus brevifolius* mix, substrate silica sand on podzol pan. Rare, growing Lake Ohia margin. I personally haven't seen the yellow form growing outside of the Aupouri ecological district. Bigger, robust plants in both pink and yellow do occur and they often carry more flowers."



***Thelymitra carnea,***

***Above:*** photos by Kevin Matthews from the Far North.

***Below:*** colour forms in Australia, photos by Mischa and Colin Rowan, <https://www.retiredaussies.com/> reproduced with permission.

# The New Zealand orchids: the editor's 2020 list

## **Acianthus** R.Br. Prodr. Fl. Nov. Holland: 321 (1810).

**Acianthus sinclairii** Hook. f. Fl. Nov.-Zel. 1: 245 (1853).

*Acianthus fomicatus* var. *sinclairii* (Hook.f.) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 369 (1945).

## **Adenochilus** Hook.f. Fl. Nov.-Zel. 1: 246, L56 (1853)

**Adenochilus gracilis** Hook. f. Fl. Nov.-Zel. 1: 246, L56 (1853).

## **Aporostylis** Rupp. & Hatch. Proc. Linn. Soc. New South Wales 70: 60 (1946)

**Aporostylis bifolia** (Hook. f.) Rupp. & Hatch. Proc. Linn. Soc. New South Wales 70: 60 (1946).

*Caladenia bifolia* Hook. f. Fl. Nov.-Zel. 1: 247 (1853).

*Chiloglottis traversii* F. Muell. Veg. Chath. Is. 51 (1864).

*Caladenia macrophylla* Colenso. Trans. & Proc. New Zealand Inst. 27: 396 (1895).

*Chiloglottis bifolia* (Hook. f.) Schltr. Engl. Bot. Jahrb. 45: 383 (1911).

## **Bulbophyllum** Thouars. Hist. Orchid., Tabl. Esp. 3. (1822).

**Bulbophyllum pygmaeum** (Sm.) Lindl. Gen. Sp. Orchid. Pl. 58 (1830).

*Dendrobium pygmaeum* Sm. in Rees. Cycl. (Rees) 11: n.27 (1808).

*Bulbophyllum ichtyostomum* Colenso. Trans. & Proc. New Zealand Inst. 26: 319 (1894).

*Ichthyostomum pygmaeum* (Sm.) D.L.Jones, M.A.Clem. & Molloy. Orchadian 13(11): 499 (2002).

**Bulbophyllum tuberculatum** Colenso. Trans. & Proc. New Zealand Inst. 16: 336 (1884).

*Adeolopetalum tuberculatum* (Colenso) D.L.Jones, M.A.Clem. & Molloy. Orchadian 13(11): 498 (2002).

*Bulbophyllum exiguum* as meant by Buchanan. Trans. & Proc. New Zealand Inst. 16: 397 (1884), is not that of F. Muell. (1861).

## **Caladenia** R.Br. (1810). Prodr. Fl. Nov. Holland. 323 (1810).

**Caladenia alata** R.Br. Prodr. Fl. Nov. Holland.: 324 (1810).

*Caladenia minor* Hook. f. var. *exigua* Cheeseman. Man. New Zealand Fl. 688 (1906).

*Caladenia exigua* Cheeseman. Trans. & Proc. New Zealand Inst. 45: 96 (1913).

*Caladenia carnea* R.Br. var. *alata* (R.Br.) Domin. Bibliotheca Botanica Heft 85: 549 (1915).

*Caladenia carnea* R.Br. var. *exigua* (Cheeseman) Rupp. Proc. Linn. Soc. New South Wales 69: 75 (1944).

*Caladenia holmesii* Rupp. Victoria Naturalist 70: 179 (1954).

*Caladenia catenata* (Sm.) Druce var. *exigua* (Cheeseman) W.M. Curtis. Stud. Fl. Tasman, 4A: 133 (1979).

*Petalochilus alatus* (R.Br.) D.L.Jones & M.A.Clem. Orchadian 13(9): 406 (2001).

**Caladenia atradenia** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 221 (1997).

*Stegostylis atradenia* (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. Orchadian 13(9): 414 (2001).

*Caladenia iridescens* as meant by Hatch. NZNOG Newsletter 16: 1 (1985), is not that of R.S. Rogers (1920).

*Caladenia carnea* R.Br. var. *minor* forma callinger Hatch. Trans. Roy. Soc. New Zealand Bot. 2: 187 (1963).

**Caladenia bartlettii** (Hatch) D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 227 (1997).

*Caladenia carnea* R.Br. var. *bartlettii* Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 402 (1949).

*Petalochilus bartlettii* (Hatch) D.L.Jones & M.A.Clem. Orchadian 13(9): 406 (2001).

The plant tagged by HB Mathews as *Caladenia "nitida-rosea"*, appears to include C. "speckles".

The name *Caladenia bartlettii* Hatch has mistakenly been applied to C. *minor* for some years, but clearly Hatch described Mathews's C. "nitida rosea".

**Caladenia chlorostyla** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 223 Fl (1997).

*Petalochilus chlorostylus* (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. Orchadian 13(9): 406 (2001).

*Caladenia catenata* as meant by Cooper. Field guide to the NZ native orchids 17 (1984), is not that of Druce (1917). *Caladenia alba* is a name used for an Australian plant once confused with NZ *tava*.

*Petalochilus calyciformis* R.S. Rogers. J. Bot. 62: 66 (1924) and *Petalochilus saccatus* R.S. Rogers. J. Bot. 62: 66, L571, 4-7 (1924) are regarded as aberrant floral mutations, probably of this species.

A number of similar forms have been tagged C. "redstem", C. "greenstem", etc.

**Caladenia lyallii** Hook. f. Fl. Nov.-Zel. 1: 247 (1853).

*Stegostylis lyallii* (Hook. f.) D.L.Jones & M.A.Clem. Orchadian 13(9): 413 (2001).

There may be a number of taxa included in the C. *lyallii* group. Some appear close to the Australian *Caladenia alpina*.

**Caladenia minor** Hook. f. Fl. Nov.-Zel. 1: 247, L56b (1853).

*Caladenia carnea* var. *pygmaea* (R.S. Rogers) Rupp. Proc. Linn. Soc. New South Wales 69: 74 (1944).

*Caladenia carnea* R.Br. var. *minor* (Hook. f.) Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 401 (1949).

*Caladenia catenata* var. *minor* (Hook. f.) W.M. Curtis. Stud. Fl. Tasman, 4A: 106 (1979).

*Petalochilus minor* (Hook. f.) D.L.Jones & M.A.Clem. Orchadian 13(9): 410 (2001).

The identity of *Caladenia minor* has been much disputed, but here it is regarded as the plant, for years mistakenly identified as C. *bartlettii*, whose flowers have rounded tepals.

**Caladenia nothofagei** D.L. Jones, Molloy & M.A.Clem. Orchadian 12(5): 226, Fl (1997).

*Petalochilus nothofagei* (D.L. Jones, Molloy & M.A.Clem.) Jones & M.A.Clem. Orchadian 13(9): 410 (2001).

**Caladenia aff. pusilla**

Probably = C. *minor*. The NZ plants may therefore differ from *Caladenia pusilla* W.M. Curtis. Stud. Fl. Tasman, 4A: 133 (1980).

**Caladenia variegata** Colenso. Trans. & Proc. New Zealand Inst. 17: 248 (1885).

*Petalochilus variegatus* (Colenso) D.L.Jones & M.A.Clem. Orchadian 13(9): 410 (2001).

Some have a clear two rows of calli, others have extra calli scattered to either side of the two rows.

## **Calceana** R.Br. Prodr. Fl. Nov. Holland.: 329 (1810).

**Calceana minor** R.Br. Prodr. Fl. Nov. Holland.: 329 (1810).

*Paracaleana minor* (R.Br.) Blaxvell. Contr. New South Wales Natl. Herb. 4: 281 (1972).

*Caleya minor* (R.Br.) Sweet. Hort. Brit. (Sweet) 385 (1827).

*Caleya sullivanii* F. Muell. Australas. Chem. Druggist 4: 44 (1882).

*Calceana nublingii* Nicholls. Victoria Naturalist 48: 15 (1931).

*Paracaleana sullivanii* (F. Muell.) Blaxvell. Contr. New South Wales Natl. Herb. 4: 281 (1972).

*Sullivania minor* (R.Br.) D.L.Jones & M.A.Clem. Orchadian 15: 36 (2005).

## **Calochilus** R.Br. Prodr. Fl. Nov. Holland.: 320 (1810)

**Calochilus herbaceus** Lindl. Gen. & Spec. Orch. Plant.: 45 (1840).

*Calochilus campestris* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 248 (1949), is not that of R.Br. (1810).

**Calochilus paludosus** R.Br. Prodr. Fl. Nov. Holland.: 320 (1810).

*Calochilus robertsonii* Benth. Fl. Austral. 6: 315 (1837).

*Calochilus campestris* as meant by Fitzg. Austral. Orchids 14(4): 1.6 (1878), is not that of R.Br. (1810).

*Calochilus campestris* as meant by Cheeseman. Man. New Zealand Fl. 686 (1906), is not that of R.Br. (1810).

## **Chiloglottis** R.Br. Prodr. Fl. Nov. Holland.: 323 (1810).

**Chiloglottis cornuta** Hook. f. Bot. Antarct. Voy. Vol. 1, Fl. Antarct.: 69 (1844).

*Caladenia cornuta* (Hook. f.) Rchb. f. Beitr. Syst. Pflanzenk. 67 (1871).

*Simpliglotlis cornuta* (Hook. f.) Szlach. Polish Bot. J. 46(1): 13 (2001).

**Chiloglottis formicifera** Fitzg. Austral. Orchids 1(3): (1877).

*Myrmecichla formicifera* (Fitzg.) D.L.Jones & M.A.Clem. Orchadian 15(1): 37 (2005).

Only one record of this vagrant over a century ago.

**Chiloglottis trapeziformis** Fitzg. Austral. Orchids 1(3): (1877).

*Myrmecichla trapeziformis* (Fitzg.) D.L.Jones & M.A.Clem. Orchadian 15(1): 37 (2005).

**Chiloglottis valida** D.L. Jones. Austral. Orchid Res. 2: 43-44, t. 54, plate p.92 (1991).

*Simpliglotlis valida* (D.L. Jones) Szlach. Polish Bot. J. 46(1): 14 (2001).

*Chiloglottis gunnii* as meant by Molloy. Native orchids of NZ: 9 (1983), is not that of Lindl. (1840).

## **Corybas** Salisb. Parad. Lond. t.83 (1805).

**Corybas acuminatus** M.A.Clem. & Hatch. New Zealand J. Bot. 23: 491, f2 (1985).

*Nematoceras acuminatum* (M.A.Clem. & Hatch) Molloy, D.L. Jones & M.A.Clem. Orchadian 13(10): 449 (2002).

*Corysanthes acuminata* (M.A.Clem. & Hatch) Szlach. Richardiana 3(2): 97 (2003).

*Corybas rivularis* as meant by Cheeseman. Man. New Zealand Fl. 697 (1906), and others (1906-1985), is not *Acianthus rivularis* of A. Cum. (1837).

**Corybas carsei** (Cheeseman) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1925).  
*Corysanthes carsei* Cheeseman. Trans. & Proc. New Zealand Inst. 44: 162 (1912).  
*Anzybas carsei* (Cheeseman) D.L.Jones & M.A.Clem. Orchadian 13(10): 443 (2002).  
*Corybas unguiculatus* as meant by L.B.Moore. Fl. New Zealand Vol. 2: 116 (1970) is not *Corysanthes unguiculatus* of R.Br. (1810).

**Corybas cheesemanni** (Hook.f. ex Kirk) Kuntze. Revis. Gen. Pl. 2: 657 (1891).  
*Corysanthes cheesemanni* Hook.f. ex Kirk. Trans. & Proc. New Zealand Inst. 3: 180 (1871).  
*Corybas acutifolius* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945), is not that of Salish. (1807).

**Corybas aconitifolus** Lehnbech Phytotaxa 270 (1): 9 (2016).

**Corybas cryptanthus** Hatch. Trans. Roy. Soc. New Zealand 83: 577 (1956).  
*Molloybas cryptanthus* (Hatch) D.L.Jones & M.A.Clem. Orchadian 13(10): 448 (2002).  
*Corybas saporphyticus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 366, t.71 (1952), is not that of Schltr. (1923).

**Corybas dienemum** D.L. Jones Fl. Australia 50: 572 (1993).  
*Corysanthes dienema* (D.L.Jones) Szlach  
*Nematoceras dienemum* D.L. Jones et al. Orchadian 13(10): 437-468 (2002).

**Corybas hatchii** Lehnbech. NZ. Native Orchid Journal 139: 4 (2016).  
*Corybas macranthus* (Hook.f.) Rehb.f. var. *longipetalus* Hatch. Trans. & Proc. Roy. Soc. New Zealand 76: 580, t.60(1) (1947).  
*Nematoceras longipetalum* (Hatch) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corybas longipetalus* (Hatch) Hatch. NZNOG Journal 47: 6 (1993), is not that of Schltr. (1923).

**Corybas hypogaeus** (Colenso) Lehnbech. NZ. Native Orchid Journal 139: 5 (2016).  
*Corysanthes hypogaea* Colenso. Trans. & Proc. New Zealand Inst. 16: 336 (1884).  
*Nematoceras hypogaeum* (Colenso) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).

**Corybas iridescens** Irwin & Molloy. New Zealand J. Bot. 34: 1, f.1 (1996).  
*Nematoceras iridescens* (Irwin & Molloy) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corysanthes iridescens* (Irwin & Molloy) Szlach. Richardsonia 3(2): 98 (2003).

**Corybas macranthus** (Hook.f.) Rehb.f. Beitr. Syst. Pflanzk. 67 (1871).  
*Nematoceras macranthum* Hook.f. Fl. Nov.-Zel. 1: 250 (1853).  
*Corysanthes macrantha* (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).  
 There are several taxa in the *C. macranthus* complex.

**Corybas oblongus** (Hook.f.) Rehb.f. Beitr. Syst. Pflanzk. 67 (1871).  
*Singularybas oblongus* (Hook.f.) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Nematoceras oblonga* Hook.f. Fl. Nov.-Zel. 1: 250, t.57B (1853).  
*Corysanthes oblonga* (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).  
 Two or three taxa in this complex. One may be HB Matthews's *Corysanthes* "aestivals" and a white flowered form (Nelson lakes and subantarctic islands) appears to be separate.

**Corybas obscurus** Lehnbech Phytotaxa 270 (1): 11 (2016).

**Corybas orbiculatus** (Colenso) L.B.Moore. Fl. New Zealand Vol. 2: 118 (1970).  
*Corysanthes orbiculata* Colenso. Trans. & Proc. New Zealand Inst. 23: 389 (1891).  
*Nematoceras orbiculatum* (Colenso) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corybas orbiculatus* as meant by L.B.Moore. Fl. New Zealand Vol. 2: 118 (1970) and others (1970-1996), is not *Corysanthes orbiculata* of Colenso (1891) (see Molloy & Irwin. New Zealand J. Bot. 34 (1): 5 [1996]).

**Corybas papa** Molloy & Irwin. New Zealand J. Bot. 34(1): 5, f.1 (1996).  
*Nematoceras papa* (Molloy & Irwin) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corysanthes papa* (Molloy & Irwin) Szlach. Richardsonia 3(2): 98 (2003).

**Corybas papillosa** (Colenso) Lehnbech. NZ. Native Orchid Journal 139: 5 (2016).  
*Corysanthes papillosa* Colenso. Trans. & Proc. New Zealand Inst. 16: 337 (1884).  
*Nematoceras papillosum* (Colenso) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
 Nothing clearly separates it from *Corybas macranthus*.

**Corybas rivularis** (A.Cunn.) Rehb.f. Beitr. Syst. Pflanzk. 67 (1871).  
*Nematoceras rivulare* (A.Cunn.) Hook.f. Fl. Nov.-Zel. 1: 251 (1853).  
*Acianthus rivularis* A.Cunn. Companion Bot. Mag. 2: 376 (1837).  
*Corysanthes rivularis* (A.Cunn.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).  
*Nematoceras panduratum* (Cheeseman) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corysanthes rotundifolia* var. *pandurata* Cheeseman. Man. New Zealand Fl. 366 (1925), is not *Nematoceras rotundifolia* of Hook.f.  
*Corysanthes rotundifolia* as meant by Cheeseman. Man. New Zealand Fl. 695 (1906), is not *Nematoceras rotundifolia* of Hook.f. (1853).  
*Corybas orbiculatus* as meant by L.B.Moore. Fl. New Zealand Vol. 2: 118 (1970) and others (1970-1996), is not *Corysanthes orbiculata* of Colenso (1891).  
 Undescribed related taxa have been tagged C. "Kaimai", C. "test area", C. "Kaiteraki", C. "whiskers" (aka C. "viridis"), C. "Mangihua", C. "sphagnum", C. "Pollok" and C. "Moturangi".

**Corybas rotundifolius** (Hook.f.) Rehb.f. Beitr. Syst. Pflanzk. 67 (1871).  
*Nematoceras rotundifolia* Hook.f. Fl. Nov.-Zel. 1: 251 (1853).  
*Corysanthes rotundifolia* (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).  
*Corysanthes matthewsii* Cheeseman. Trans. & Proc. New Zealand Inst. 31: 351 (1899).  
*Corybas matthewsii* (Cheeseman) Schltr. Report. Spec. Nov. Regni Veg. 19: 23 (1923).  
*Anzybas rotundifolius* (Cheeseman) D.L.Jones & M.A.Clem. Orchadian 13(10): 443 (2002).  
*Corybas unguiculatus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945), is not *Corysanthes unguiculatus* of R.Br. (1810).

**Corybas sanctigeorgianus** Lehnbech Phytotaxa 270 (1): 12 (2016).

**Corybas trilobus** (Hook.f.) Rehb.f. Beitr. Syst. Pflanzk. 67 (1871).  
*Nematoceras trilobum* Hook.f. Fl. Nov.-Zel. 1: 250 (1853).  
*Corysanthes triloba* (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).  
 A number of taxa in the *Corybas trilobus* group of speculative taxonomic status include the tiny May to July flowering forms with the tagname C. "pygmy", as well as C. "Remutaka", C. "tribrive", C. "tridolf", C. "Trotters" and others.

**Corybas vitreus** Lehnbech Phytotaxa 270 (1): 12 (2016).

**Corybas walliae** Lehnbech Phytotaxa 270 (1): 13 (2016).

**Cyrtostylis** R.Br. Prodr. Fl. Nov. Holland: 317 (1810)  
**Cyrtostylis subulata** (Labill.) Rehb.f. Beitr. Syst. Pflanzk. 15 (1871).  
*Malaxis subulata* Labill. Nov. Holl. Pl. 2: 62, t.212 (1806).

**Cyrtostylis** R.Br. Prodr. Fl. Nov. Holland: 322 (1810).  
**Cyrtostylis oblonga** Hook.f. Fl. Nov.-Zel. 1: 246 (1853).  
*Acianthus reniformis* var. *oblonga* (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1946).

**Cyrtostylis rotundifolia** Hook.f. Fl. Nov.-Zel. 1: 246 (1853).  
*Cyrtostylis macrophylla* Hook.f. Fl. Nov.-Zel. 1: 246 (1853).  
*Caladenia reniformis* (R.Br.) Rehb.f. Beitr. Syst. Pflanzk. 67 (1871).  
*Cyrtostylis oblonga* (Hook.f.) var. *rotundifolia* (Hook.f.) Cheeseman. Man. New Zealand Fl. 685 (1906).  
*Acianthus reniformis* (R.Br.) Schltr. Engl. Bot. Jahrb. 34: 39 (1906).  
*Acianthus reniformis* var. *reniformis* (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1946).  
*Cyrtostylis reniformis* as used for NZ plants is not that of R.Br. Prodr. Fl. Nov. Holland: 322 (1810).

**Danhatchia** Garry & Christenson. Orchadian 11(10): 469, t.471 (1995)  
**Danhatchia australis** (Hatch) Garry & Christenson. Orchadian 11(10): 470 (1995).  
*Yomaia australis* Hatch. Trans. Roy. Soc. New Zealand Bot. 2: 185 (1963).

**Dendrobium Swartz. Nova Acta Regiae Soc. Sci. Upsal. ser. 2: 6: 82. (1799).**  
**Dendrobium cunninghamii** Lindl. Bot. Reg. 21 sub t.1756 (1835).  
*Dendrobium biflorum* as meant by A.Rich. Essai Fl. Nov. Zel. 221 (1832), is not that of Sw. (1800).  
*Dendrobium lessonae* Colenso. Trans. & Proc. New Zealand Inst. 15: 326 (1883).  
*Winka cunninghamii* (Lindl.) M.A.Clem., D.L.Jones & Molloy. Orchadian 12(5): 214 (1997).

**Drymoanthus Nichols. Victorian Naturalist 59: 173 (1943).**  
**Drymoanthus adversus** (Hook.f.) Dockrill. Australasian Sarcanthaceae: 32, t.3 (1967).  
*Sarcochilus adversus* Hook.f. Fl. Nov.-Zel. 1: 241 (1853).  
*Sarcochilus breviscapa* Colenso. Trans. & Proc. New Zealand Inst. 14: 332 (1882).

**Drymoanthus flavus** St George & Molloy. New Zealand J. Bot. 32: 416, f.1 (1994).

**Earina Lindl. Bot. Reg. sub t.1699 (1834)**  
**Earina aestivalis** Cheeseman. Trans. & Proc. New Zealand Inst. 51: 93 (1919).  
**Earina autumnalis** (G.Forst.) Hook.f. Fl. Nov.-Zel. 1: 239 (1853).  
*Epidendrum autumnale* G.Forst. Prodr. 60 (1786).  
*Earina suaveolens* Lindl. Bot. Reg. 29 (1843).  
*Earina alba* Colenso. Trans. & Proc. New Zealand Inst. 18: 267 (1886).  
**Earina mucronata** Lindl. Bot. Reg. 20 sub t.1699 (1834).  
*Earina quadrilobata* Colenso. Trans. & Proc. New Zealand Inst. 15: 325 (1883).



**Gastrodia R.Br. Prodr. Fl. Nov. Holland: 330 (1810)**

*Gastrodia cooperae* Lehnebach & J.R.Rolle. Phytotaxa 277(3): 242 (2016).

*Gastrodia cunninghamii* Hook.f. Fl. Nov.-Zel. 1: 251 (1853).

*Gastrodia leucopetalata* Colenso. Trans. & Proc. New Zealand Inst. 18: 268 (1886).

*Gastrodia minor* Petrie. Trans. & Proc. New Zealand Inst. 25: 273, 120, 125-7 (1893).

*Gastrodia molloyi* Lehnebach & J.R.Rolle. Phytotaxa 277(3): 244 (2016).

*Gastrodia sesamoides* as meant by Cheeseman. Man. New Zealand Fl. 697 (1906), may not be that of R.Br. (1810).

**Genoplesium R.Br. Prodr. Fl. Nov. Holland: 319 (1810)**

*Genoplesium nudum* (Hook.f.) D.L. Jones & M.A.Clem. Lindleyana 4(3): 144 (1989).

*Conostylis nuda* (Hook.f.) D.L. Jones & M.A.Clem. Orchadian 13(10): 461 (2002).

*Prasophyllum nudum* Hook.f. Fl. Nov.-Zel. 1: 242 (1853).

*Prasophyllum tumucatum* Hook.f. Fl. Nov.-Zel. 1: 242 (1853).

*Prasophyllum variegatum* Colenso. Trans. & Proc. New Zealand Inst. 20: 208 (1888).

*Genoplesium pumilum* (Hook.f.) D.L. Jones & M.A.Clem. Lindleyana 4(3): 144 (1989).

*Conostylis pumila* (Hook.f.) D.L. Jones & M.A.Clem. Orchadian 13(10): 461 (2002).

*Prasophyllum pumilum* Hook.f. Fl. Nov.-Zel. 1: 242 (1853).

**Microtis R.Br. Prodr. Fl. Nov. Holland: 320 (1810)**

*Microtis arenaria* Lindl. Gen. Sp. Orchid. Pl. 1306 (1840).

*Microtis pillola* Nicholls. Victoria Naturalist 66: 93, FO-L (1949).

*Microtis babulosa* Colenso. Trans. & Proc. New Zealand Inst. 18: 269 (1886). The type has not been found but Colenso's notched labellum suggests *M. arenaria*.

*Microtis oligantha* L.B. Moore. New Zealand J. Bot. 6: 473, F1 (1969).

*Microtis magnadenia* as meant by Hatch. Trans. Roy. Soc. New Zealand, Bot. 2: 185-189 (1963), is not that of R.S. Rogers (1930).

*Microtis parviflora* R.Br. Prodr. Fl. Nov. Holland: 321 (1810).

*Microtis javanica* Rehb.f. Bonplandia 5: 36 (1857).

*Microtis berthamiana* Rehb.f. Beitr. Syst. Pflanzk. 24 (1871).

*Microtis porrifolia* (Sw.) R.Br. ex Spreng. var. *parviflora* (R.Br.) Rodway. Tasman. Fl. 159 (1903).

*Microtis aemula* Schlar. Bot. Jahrb. Syst. 29: 37 (1906).

*Microtis bipulvinaris* Nicholls. Victoria Naturalist 66: 92-94, FA-F (1949).

*Microtis holmsii* Nicholls. Victoria Naturalist 66: 93, FG-I (1949).

*Microtis unifolia* (G.Forst.) Rehb.f. Beitr. Syst. Pflanzk. 62 (1871).

*Ophrys unifolia* G.Forst. Fl. Ins. Austr. 59 (1786).

*Eppactis porrifolia* Sw. Kongl. Vetensk. Acad. Nya Handl. 21: 233 (1800).

*Microtis porrifolia* (Sw.) R.Br. ex Spreng. Syst. Veg. (ed. 16) [Sprengel] 3: 713 (1826).

*Microtis banksii* A.Cunn. Bot. Mag. 62: sub 13377 (1835).

*Microtis frutetorum* Schidl. Linnaea 20: 568 (1847).

*Microtis viridis* F. Muell. Fragm. (Mueller) 5: 97 (1866).

*Microtis longifolia* Colenso. Trans. & Proc. New Zealand Inst. 17: 247 (1885). This is a small autumn flowering grassland form and is probably distinct.

*Microtis pulchella* as meant by Lindl. Gen. Sp. Orchid. Pl. 395 (1840), is not that of R.Br. (1810).

**Orthoceras R.Br. Prodr. Fl. Nov. Holland: 316 (1810)**

*Orthoceras novae-zealandiae* (A.Rich.) M.A.Clem., D.L. Jones & Molloy. Austral. Orchid Res. 1: 100 (1989).

*Diuris novae-zealandiae* A.Rich. Essa Fl. Nov. Zel. 163 t25, f1 (1832).

*Orthoceras solandri* Lindl. Gen. Sp. Orchid. Pl. 512 (1840).

*Orthoceras rubrum* Colenso. Trans. & Proc. New Zealand Inst. 18: 273 (1886).

*Orthoceras caput-serpentis* Colenso. Trans. & Proc. New Zealand Inst. 22: 490 (1890).

*Orthoceras strictum* R.Br. forma viride Hatch. Trans. Roy. Soc. N.Z. Bot. 2: 195 (1963).

*Orthoceras strictum* R.Br. Prodr. Fl. Nov. Holland: 317 (1810).

Many botanists regard *Orthoceras* as a monotypic genus; the reported differences between *O. strictum* and *O. novae-zealandiae* are inconsistent.

**Prasophyllum R.Br. Prodr. Fl. Nov. Holland: 317 (1810)**

*Prasophyllum colensoi* Hook.f. Fl. Nov.-Zel. 1: 241 (1853).

*Prasophyllum pauciflorum* Colenso. Trans. & Proc. New Zealand Inst. 18: 273 (1886).

*Prasophyllum rogersii* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 76: 290 (1946), is not that of R.S. Rogers & Rees (1921).

Probably a number of taxa, including Irwin's P. "A" and P. "B" (NZNOG Journal 79: 9-10 [2001]).

*Prasophyllum hectorii* (Buchanan) Molloy, D.L. Jones & M.A.Clem. Orchadian 15: 41 (2005).

*Gastrodia hectori* Buchanan. Trans. & Proc. New Zealand Inst. 19: 214 (1886).

*Prasophyllum patens* as meant by Cheeseman. Man. New Zealand Fl. (1906), is not that of R.Br. (1810).

*Prasophyllum suttonii* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 76: 291 (1946), is not that of Rupp (1928).

**Pterostylis R.Br. Prodr. Fl. Nov. Holland: 326 (1810)**

*Pterostylis agathicola* D.L. Jones, Molloy & M.A.Clem. Orchadian 12(6): 266 (1997).

*Pterostylis graminea* (Hook.f.) var. *rubricaulis* H.B. Mathewes ex Cheeseman. Man. New Zealand Fl. 351 (1925).

*Pterostylis montana* (Hatch.) var. *rubricaulis* (Cheeseman) Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 240, plate 23 (1949).

*Pterostylis albota* (Hatch) L.B. Moore. New Zealand J. Bot. 6: 486, f3 (1969).

*Pterostylis trullifolia* as meant by Cheeseman. Man. New Zealand Fl. (1906), is not that of Hook.f.

*Pterostylis trullifolia* Hook.f. var. *albota* Hatch. Trans. Roy. Soc. NZ 77: 244, t30, f3E-H (1949).

*Diplodum albulum* (Hatch) D.L. Jones, Molloy & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).

*Pterostylis alveata* Garnet. Victoria Naturalist 59: 91 (1939).

*Diplodum alveatum* (Garnet) D.L. Jones & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).

*Pterostylis areolata* Petrie. Trans. & Proc. New Zealand Inst. 50: 210 (1918).

*Pterostylis auriculata* Colenso. Trans. & Proc. New Zealand Inst. 22: 489 (1890).

*Pterostylis australis* Hook.f. Fl. Nov.-Zel. 1: 248 (1853).

*Pterostylis brumalis* L.B. Moore. New Zealand J. Bot. 6: 485, f3 (1969).

*Pterostylis trullifolia* Hook.f. var. *rubella* Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 244 (1949).

*Diplodulum brumaec* (L.B. Moore) D.L. Jones, Molloy & M.A.Clem. Austral. Orchid Res. 4: 70 (2002).

*Pterostylis banksii* A.Cunn. Companion Bot. Mag. 2: 376 (1837).

*Pterostylis cardiogramma* D. Cooper. New Zealand J. Bot. 21: 97, f1,2 (1983).

*Pterostylis cernua* D.L. Jones, Molloy & M.A.Clem. Orchadian 12(6): 267, f2 (1997).

*Pterostylis emarginata* Colenso. Trans. & Proc. New Zealand Inst. 15: 328 (1883).

Structurally similar to *P. banksii* but consistently smaller and with a consistently notched labellum tip.

*Pterostylis foliata* Hook.f. Fl. Nov.-Zel. 1: 249 (1853).

*Pterostylis verenaec* R.S. Rogers. Trans. & Proc. Roy. Soc. South Australia 38: 360-361, f18(2) (1914).

*Pterostylis gracilis* Nicholls. Victoria Naturalist 43: 324-326 (1927).

*Pterostylis graminea* Hook.f. Fl. Nov.-Zel. 1: 248 (1853).

There are several taxa in the *P. graminea* complex, including tagnamed P. "sphagnum" and P. "peninsula".

*Pterostylis humilis* R.S. Rogers. Trans. & Proc. Roy. Soc. South Australia 46: 151 (1922).

*Pterostylis irsoniana* Hatch. Trans. & Proc. Roy. Soc. New Zealand 78: 104, t18 (1950).

*Pterostylis irwinii* D.L. Jones, Molloy & M.A.Clem. Orchadian 12(6): 269 (1997).

*Pterostylis micromega* Hook.f. Fl. Nov.-Zel. 1: 248 (1853).

*Pterostylis polyphylla* Colenso. Trans. & Proc. New Zealand Inst. 22: 489 (1890).

*Pterostylis furcata* Lindl. var. *micromega* Hatch. Trans. Roy. Soc. New Zealand 80: 326 (1953).

*Pterostylis montana* Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 239, t22 (1949).

The *Pterostylis montana* group may include as many as 14 undescribed taxa.

*Pterostylis nutans* R.Br. Prodr. Fl. Nov. Holland: 327 (1810).

*Pterostylis matthewsii* Cheeseman. Trans. & Proc. New Zealand Inst. 47: 46 (1915).

*Pterostylis oliveri* Petrie. Trans. & Proc. New Zealand Inst. 26: 270 (1894).

*Pterostylis pallidosa* D.L. Jones, Molloy & M.A.Clem. Orchadian 12(6): 271 (1997).

*Pterostylis furcata* Lindl. var. *linearis* Hatch. Trans. & Proc. Roy. Soc. NZ 77: 243, plate 29, 2 (1949).

*Pterostylis patens* Colenso. Trans. & Proc. New Zealand Inst. 18: 270 (1886).

*Pterostylis banksii* Hook.f. var. *patens* (Colenso) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 370 (1945).

*Pterostylis porrecta* D.L. Jones, Molloy & M.A.Clem. Orchadian 12(6): 272 (1997).

*Pterostylis puberula* Hook.f. Fl. Nov.-Zel. 1: 249 (1853).

*Linguleta puberula* (Hook.f.) D.L. Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 75 (2002).

*Pterostylis nana* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 77: 237 (1949) is not that of R.Br. (1810).

*Pterostylis sibiriculifera* (F. Muell.) Molloy, D.L. Jones & M.A.Clem. Austral. Orchid Res. 4: 66 (2002).

*Pterostylis banksii* var. *sibiriculifera* F. Muell. Veg. Chth. Is. 51 (1864).

*Pterostylis speciosa* Colenso. Trans. & Proc. New Zealand Inst. 22: 488 (1890).

This name may apply to a widespread entity similar to *P. patens* but with shorter tepals.

*Pterostylis subsimilis* Colenso. Trans. & Proc. New Zealand Inst. 28: 611 (1896).

This name is here applied to distinct large-flowered Ruahine & Taranaki plants.

*Pterostylis tanypoda* D.L. Jones, Molloy & M.A.Clem. Orchadian 12(6): 273 (1997).

*Hymenochilus tanypodus* (D.L. Jones, Molloy & M.A.Clem.) D.L. Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 74 (2002).

*Pterostylis cynoccephala* as meant by L.B. Moore. Fl. New Zealand Vol. 2: 135 (1970) and others (1970-1997), is not that of Fitzg. (1876).

**Pterostylis tasmanica** D.L. Jones, Muellera 8(2): 177 (1994).  
*Plumatichilus tasmanicum* (D.L. Jones) Sidaeh. Polish Bot. J. 46(1): 23 (2001).  
*Pterostylis squamata* as meant by Hook.f. Fl. Nov.-Zel. 1: 249 (1853), is not that of R.Br. (1810).  
*Pterostylis barbata* as meant by Cheeseman. Man. New Zealand Fl. 683 (1906), is not that of Lindl. (1840).  
*Pterostylis prismosa* as meant by Cooper. Field guide to NZ native orchids 51 (1981), is not that of Cady (1969).

**Pterostylis tritosis** Colenso. Trans. & Proc. New Zealand Inst. 18: 271 (1886).  
*Hymenochilus tritosis* (Colenso) D.L. Jones, M.A. Clem. & Molloy. Austral. Orchid Res. 4: 74 (2002).  
*Pterostylis notula* as meant by Cheeseman. Trans. & Proc. New Zealand Inst. 15: 300 (1883), is not that of R.Br. (1810).

**Pterostylis trullifolia** Hook.f. Fl. Nov.-Zel. 1: 249 (1853).  
*Pterostylis rubella* Colenso. Trans. & Proc. New Zealand Inst. 18: 271 (1886).  
*Pterostylis trullifolia* Hook.f. var. *gracilis* Cheeseman. Trans. & Proc. New Zealand Inst. 47: 271 (1915).  
*Diplodium trullifolium* (Hook.f.) D.L. Jones, Molloy & M.A. Clem. Austral. Orchid Res. 4: 72 (2002).

**Pterostylis venosa** Colenso. Trans. & Proc. New Zealand Inst. 28: 610 (1896).  
*Pterostylis trifolia* Colenso. Trans. & Proc. New Zealand Inst. 31: 281 (1899).  
*Pterostylis confertifolia* Allan. Trans. & Proc. New Zealand Inst. 56: 32 (1926).

**Spiranthes** Rich. De Orchid. Eur. 20, 28, 36 (1817)

**Spiranthes australis** Lindl. Bot. Reg. subit. 823 (1824).  
*Spiranthes novae-zelandiae* Hook.f. Fl. Nov.-Zel. 1: 243 (1853).  
*Neotia australis* R.Br. Prodr. (1810).  
*Spiranthes sinensis* as meant by Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 58 (1946), is not that of Arnes (1908).  
*Spiranthes lancea* as meant by Hatch. Trans. Roy. Soc. New Zealand 62: 614 (1954), is not that of Backer, Bakh. & Steenis (1950).

**Spiranthes "Motung"** appears a larger and structurally different plant, but not separable by DNA.

**Taeniophyllum** Blume, Bijdr. Fl. Ned. Ind.: 355 (1825)

**Taeniophyllum norfolkianum** D.L. Jones, B. Gray & M.A. Clem. in Jones et al., 15: 157 (2006)

**Thelymitra** J.R. Forst. & G. Forst. Char. Gen. Pl. 97 t. 49 (1776)

**Thelymitra aemula** Cheeseman. Trans. & Proc. New Zealand Inst. 51: 94 (1919).  
**Thelymitra alba** Colenso. Trans. & Proc. New Zealand Inst. 18: 272 (1886).  
*Thelymitra longifolia* J.R. Forst. & G. Forst. var. *alba* (Colenso) Cheeseman. Man. New Zealand Fl. 339 (1925).  
*Thelymitra* "Whakapapa", an undescribed taxon from Ruapehu appears identical.

**Thelymitra brevifolia** Jeanes. Muellera 19: 19-79 (2004).  
This is probably the identity of *T. comata* Colenso. Trans. & Proc. New Zealand Inst. 20: 206 (1888).

**Thelymitra carnea** R.Br. Prodr. Fl. Nov. Holland.: 314 (1810).  
*Thelymitra imberbis* Hook.f. Fl. Nov.-Zel. 1: 244 (1853). A yellow form.  
*Thelymitra carnea* R.Br. var. *imberbis* (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1946).

**Thelymitra colensoi** Hook.f. Handb. N. Zeal. Fl. 271 (1864).  
*Thelymitra intermedia* Berger. Minneskr. Fisiög. Sällsk. Lund 8: 21 f (1878) is a synonym.  
*Thelymitra longifolia* J.R. Forst. & G. Forst. var. *stenopetala* Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 F-H (1952).  
*Thelymitra longifolia* J.R. Forst. & G. Forst. var. *intermedia* Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 J (1952).

**Thelymitra concinna** Colenso. Trans. & Proc. New Zealand Inst. 20: 207 (1888) may be a pink-ciliated form of *T. hutchii*, (and if so would have precedence) or may be a separate species.

**Thelymitra cyanea** Lindl. Benth. Fl. Austral. 6: 323 (1873).  
*Macdonaldia cyanea* Lindl. Bot. Reg. 25 (1840).  
*Thelymitra uniflora* Hook.f. Bot. Antart. Voy. Vol. 1, Fl. Antart.: 70 (1844).  
*Thelymitra venosa* as meant by Cheeseman. Man. New Zealand Fl. 671 (1906), is not that of R.Br. (1810).  
*Thelymitra venosa* R.Br. var. *typica* Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 390, plate 77 A-C (1952).  
*Thelymitra venosa* R.Br. var. *codnismithii* Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 390, plate 77 D-E (1952).  
*Thelymitra venosa* R.Br. var. *cyanea* Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 391, plate 77 F-H (1952).

**Thelymitra X dentata**: a sterile hybrid of *T. longifolia* X *T. pulchella*.  
*Thelymitra dentata* L.B. Moore. New Zealand J. Bot. 6: 478, f2 (1969).

**Thelymitra formosa** Colenso. Trans. & Proc. New Zealand Inst. 16: 338 (1884).  
*Thelymitra circumscpta* as meant by Hatch. NZNOG Journal 65: 8 (1997), is not that of Fitzg. (1878).

**Thelymitra hutchii** L.B. Moore. New Zealand J. Bot. 6: 477, f2 (1969).  
*Thelymitra pachyphylla* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 394, plate 79 D-H (1952), is not that of Cheeseman (1906).

**Thelymitra ixoides** Swartz. Kongl. Vetensk. Acad. Nya Handl. 21: 253, t3, fL (1800).  
*Thelymitra ixoides* var. *typica* (Hook.f.) Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 59 (1945).  
This may not be the same as the Australian plant.

**Thelymitra longifolia** J.R. Forst. & G. Forst. Char. Gen. Pl. 98 t. 49 (1776).  
*Scaptias regularis* Banks & Sol. ex G. Forst. Prodr. 59 (1776).  
*Thelymitra forsteri* Sw. Kongl. Vetensk. Acad. Nya Handl. 21: 228 (1800).  
*Thelymitra longifolia* J.R. Forst. & G. Forst. var. *forsteri* Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 B-E (1952).  
The name *T. longifolia* is here restricted to plants with wide ridged floppy leaves and entire column midlobes.

**Thelymitra malvina** M.A. Clem., D.L. Jones & Molloy. Austral. Orchid Res. 1: 141 (1989).

**Thelymitra matthewsii** Cheeseman. Trans. & Proc. New Zealand Inst. 43: 177 (1911).

**Thelymitra nemoralis** Colenso. Trans. & Proc. New Zealand Inst. 17: 249 (1885).

**Thelymitra nervosa** Colenso. Trans. & Proc. New Zealand Inst. 20: 207 (1888).  
*Thelymitra decora* Cheeseman. Man. New Zealand Fl. 1151 (1906). Spotted and unspotted forms grow together.

**Thelymitra pauciflora** R.Br. Prodr. 314 (1810).  
*Thelymitra pauciflora* sens. strict. is in NZ according to Jeanes (Muellera 19: 19-79 [2004]); however, there are also a number of other forms in this group.

**Thelymitra pulchella** Hook.f. Fl. Nov.-Zel. 1: 244 (1853).  
The name *T. pulchella* is here restricted to plants with bare or shallowly toothed (not fimbriate nor ciliate) column arms from north of the Waikato. *Thelymitra "sansfimbria"* with plain blue flowers and *T. pulchella sensu* Cheeseman are included.

**Thelymitra pulchella s.l. (aff. erosa)**  
*Thelymitra fimbriata* Colenso. Trans. & Proc. New Zealand Inst. 22: 490 (1890).  
*Thelymitra pachyphylla* Cheeseman. Man. New Zealand Fl. 1151 (1906).  
*Thelymitra caesia* Petrie. Trans. & Proc. New Zealand Inst. 51: 107 (1919).  
The anatomy and distinguishing features of these three need to be clarified. They appear to be consistently different from *T. pulchella* s.s.

**Thelymitra purpureofusca** Colenso. Trans. & Proc. New Zealand Inst. 17: 249 (1885).

**Thelymitra sansifolia** Irwin ex Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 397, plate 81 B-E (1952).

**Thelymitra thalifloris** Molloy & Hatch. New Zealand J. Bot. 28: 111, f6 (1996).  
*Thelymitra thalifloris* as meant by L.B. Moore. Fl. New Zealand Vol. 2: 129 (1970), is not that of Berggren (1878).

**Thelymitra "Alipara"**: an unnamed taxon from the Far North, similar to *T. "darkie"* and to the Australian *T. holmesii*.

**Thelymitra "Conec"**: a large, late-flowering *Thelymitra* from the Kaweka range. Appears to be sterile, so probably a hybrid.

**Thelymitra "darkie"**: undescribed taxon from the Far North (see McCrae. NZNOG Journal 24: 11; 77: 22 [1987]).

**Thelymitra "fusa"**: a tiny, brown-leaved beech forest plant.

**Thelymitra "Mangawhai"**: undescribed Far North taxon (K. Matthews).

**Thelymitra "rough leaf"**: undescribed taxon from the Far North (see McCrae. NZNOG Journal 24: 11; 77: 22 [1987]).

**Thelymitra "sly"**: undescribed taxon from the Far North (see Scanlen. NZNOG 70: 30-35, f6 [1998]).

**Thelymitra "stunted"**: tiny plant from Scotts Point, Far North.

**Thelymitra "tholingira"**: (see Scanlen. NZNOI 85: 10, 15). *Thelymitra aristata* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 395, plate 79 M-N, plate 80 A (1952), is not that of Lindl. (1840), and may be *T. "tholingira"*.

#### Townsonia Cheeseman. Man. New Zealand Fl. 692 (1906).

#### Townsonia deflexa Cheeseman. Man. New Zealand Fl. 692 (1906).

*Townsonia viridis* as meant by Schltr. Repert. Spec. Nov. Regni Veg. 9: 250 (1911), is not *Acianthus viridis* of Hook.f. (1860).  
*Acianthus viridis* as meant by L.B. Moore. Fl. New Zealand Vol. 2: 107 (1970), is not that of Hook.f. (1860).

#### Waireia D.L. Jones, M.A. Clem. & Molloy. Orchadian 12(6): 282 (1997)

#### Waireia stenopetala (Hook.f.) D.L. Jones, M.A. Clem. & Molloy. Orchadian 12(6): 282 (1997).

*Thelymitra stenopetala* (Hook.f.) Bot. Antart. Voy. Vol. 1, Fl. Antart.: 69 (1844).  
*Lyparochilus antarcticus* Hook.f. Bot. Antart. Voy. Vol. 1, Fl. Antart.: 544 (1847).

### The New Zealand Native Orchid Group

**Chair:** Gael Donaghy, 52 Anne Rd, Tauranga, 3110, GaelDonaghy@gmail.com.

**Secretary:** Pam Shearer, 7 Ring Terrace, St Marys Bay, Auckland, pam@insidetrack.co.nz

**Treasurer, books and publications:** Judith & Brian Tyler, 4 Byrd St, Levin, banj.tyler@tra.co.nz

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

**Editor:** Ian St George, 32 Hawkestone St, Thorndon, Wellington 6011, istge@yahoo.co.nz

The *Journal* is published quarterly from February; deadline is 1st of the preceding month. Please send email or printed copy. The website posts journals six months after publication. The main aim of the Group is to improve knowledge about native orchids, so authors should be aware we allow others to copy material published in the Journal, provided the author and source are acknowledged. Publication here does not necessarily indicate the editor or members of the Group share authors' views.

# Editorial: Ian St George, modified from a presentation at the NZNOG AGM in Dannevirke

## The cottonwool ciliated flowers can't all be *Thelymitra longifolia*

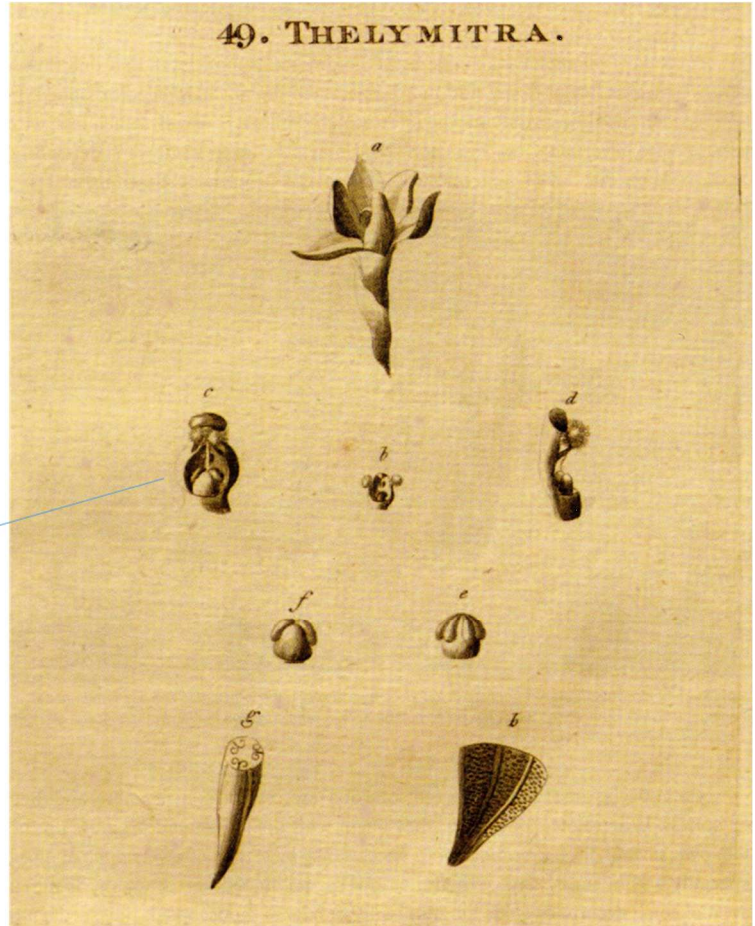
In 1769 Joseph Banks and Daniel Solander, naturalists on Cook's *Endeavour*, found a form of *Thelymitra longifolia* at Tolaga Bay and Whitianga and called it "Serapias regularis" in manuscript, no doubt thinking it a regular form of the European orchid *Serapius* (**Fig. 1** below). Their artist Sydney Parkinson drew it and Frederick Polydore Nodder engraved its likeness (**Fig. 2**) for Banks's *Florilegium*.

In November 1773 Johann Forster, naturalist on Cook's *Resolution*, found and later formally described *T. longifolia* from plants collected on Long Island, Queen Charlotte Sound; his son Georg Forster (**Fig. 3** below) and the ship's artist William Hodges (**Fig. 4**) drew it. Hodges's image appears to be a copy of Forster's.



Johann Forster wrote (translated from Latin by Dan Hatch),  
“Column, a single structure, 2-lobed, the upper lobe truncate (*as if cut off*)... Midlobe cucullate (*hood shaped*)...”

William Colenso clearly took these terms to mean the midlobe, as Forster had illustrated it, was “entire” (ie, not notched)....





*On Long Island now...*

◀◀▲ *T. longifolia* s.s. from Long Island, its type locality. A robust, many-flowered plant, the midlobe indeed entire, the leaf long, wide and floppy.

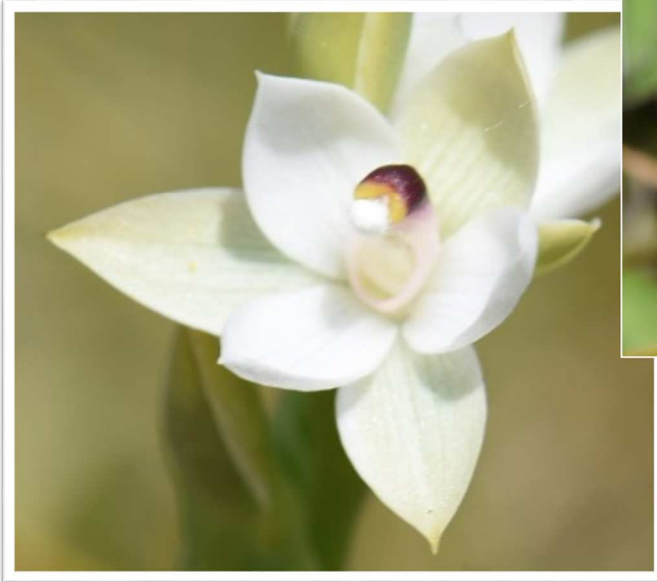
*Thelymitra longifolia* s.s. from Long Island (left) and Airlie Road Plimmerton (right). Each has an entire (unnotched) midlobe, a raceme of many flowers opening serially from below and a wide floppy leaf.



## *Thelymitra alba*

The first to be separated off was Colenso's *Thelymitra alba*, a plant with a narrow C-section leaf (up to 10mm broad) and a flower with a "deeply notched" midlobe, sent to Colenso from Glenross, Hawke's Bay. Colenso's had eight flowers but usually there are fewer.

This seems to be the common small grassland plant, green in some places, purple-stemmed in others.



Plants matching Colenso's concept of *T. alba*.

*Left:* Wairarapa.

*Above & right:* Central Otago.

## Are a notched midlobe and a different leaf shape sufficient to separate off a new species?

- Colenso clearly thought so and he was no fool.
- Cheeseman thought not, then backtracked a little.
- We do regard small differences in the column as the significant differentiators among other *Thelymitra* species, for instance Jeanes divided *T. pauciflora* s.l. into 20 species, 15 of them new.



### *Thelymitra nemoralis*

Colenso next separated off *Thelymitra nemoralis*, a plant with the wide leaf of *T. longifolia* s.s. but a flower with a “deeply emarginate” midlobe, found by Colenso near Norsewood. It has a leaf widest at the base—an elongated isosceles triangle rather than a parallel-sided ribbon.

This from the Apiti track, near Norsewood.



# *Thelymitra purpureofusca*

Colenso's third separation was *Thelymitra purpureofusca*, a plant with a very narrow wiry leaf (up to 7.5mm broad) and a flower with a "much emarginate" midlobe, found by Colenso near Norsewood, clump-forming. Green forms as well as purple-brown exist. "Not every *Thelymitra purpureofusca* is purple and not every purple *Thelymitra* is *T. purpureofusca*."



# *Thelymitra* “Whakapapa”

Found and described informally in ms by Bruce Irwin (Figs 1, 2), this seems to me to be a colour form of *T. alba*. Certainly it is very like Eric Scanlen’s plant tagged *T. aff. longifolia* “blue halo” (Fig. 3).



## *Thelymitra "fusca"*

This is a tiny beech forest plant, common in Canterbury and Otago tracksides, with a bronze to green wiry leaf and a small blue-white flower with an entire midlobe (centre and right).

It looks the same as Mike Lusk's *T. longifolia* "slim" (left below) from Hawke's Bay.

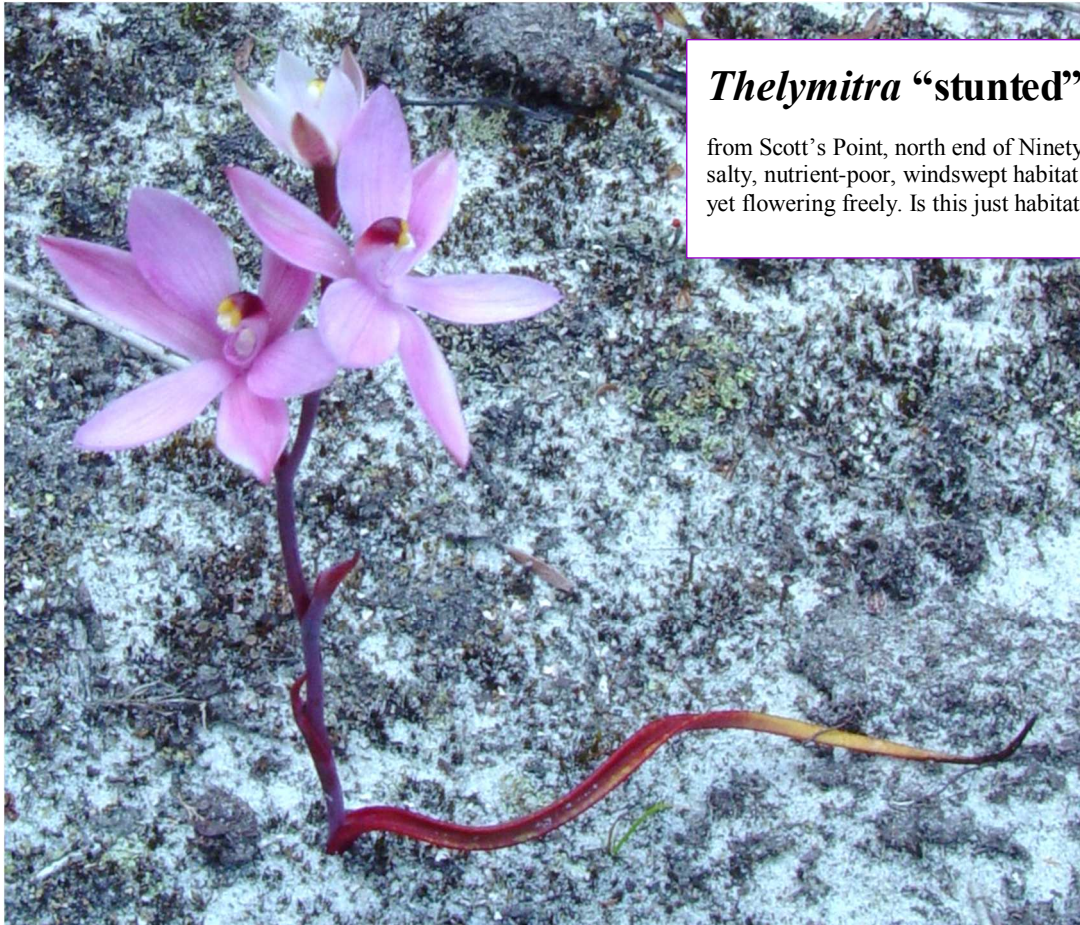


## *Thelymitra*

### “Mangawhai”

Kevin Matthews's from the Far North: a long, bent, deeply split column, the flower fragrant.





## *Thelymitra* “stunted”

from Scott’s Point, north end of Ninety Mile Beach—a sandy, salty, nutrient-poor, windswept habitat: a plant often only 5cm tall, yet flowering freely. Is this just habitat effect?

## *Thelymitra* “tholinigra”

Eric Scanlen found this north of Auckland, the midlobe entire. Leaf,  $\pm 300 \times 10$ mm, three angled in cross section. . . . Its flowers were the largest in NZ *Thelymitra*, up to 42mm diam. Black, tuberculate bonnet-like post anther lobe, the tuberculate brown margin pulled in as if by a draw-string.



## More from Northland, identified by Bill Campbell...

“At Te Pahi there appear to be three distinct forms of *T. longifolia*. The first is fairly typical *T. longifolia*, which flowers from the beginning of September through to at least mid-October. The first three attached (figs 1–3) are of this form. The second form, with a knobby dark post anther lobe, appears to flower from mid-October through to early November—see figs 4 & 5 attached, both 26 Oct 19. The third is a delicate small flowered form, with only 1–3 flowers. Ones I have seen, only at Shenstone Block and Albany Scenic Reserve, have flowers that are tinged pink or blue. It would appear that the flowering time is mid-November to early December. See attached figs 6–9 inclusive. The only other one I will attach at this stage is from the road frontage fringe of the Iwitahi Native Orchid Reserve. This has a very black post anther lobe with no yellow on it at all.”



*Most of Bill's plants have notched columns which I contend should distinguish them from T. longifolia s.s. —Ed.*

## Other variations...

- A South Island form with a pyramidal scape and flowers that all open simultaneously (Mark Moorhouse)
- Another with extremely narrow leaves and not a lot of flowers which is either a *T. longifolia* or *T. pauciflora* variant. Beech forest tracksides in the S Is, rarely open, perhaps *T. purpureofusca* but not clumping ▶
- A couple from the Far North photographed by Eric Scanlen ▼▶



What can I say about *Thelymitra longifolia* s.l?

We have different views about the distinctness of these, as did Colenso and Cheeseman.

Did the Forsters see only one end of a range of column and leaf shapes in a single species (Hooker's position)? if so, is the variation caused by habitat? isolation? or are these different growth stages?

No. There really are several entities in *T. longifolia* (Colenso's position) but how many? and what are their names?



# The inbox

Lara Shepherd's Te Papa blog on SW Australian orchids can be seen if you [Ctrl-click] on [https://blog.tepapa.govt.nz/2014/10/27/a-blue-fairy-pink-candy-a-crab-lipped-spider-several-donkeys-and-a-flying-duck/?mc\\_cid=eef09710d6&mc\\_eid=1d6eb84dee](https://blog.tepapa.govt.nz/2014/10/27/a-blue-fairy-pink-candy-a-crab-lipped-spider-several-donkeys-and-a-flying-duck/?mc_cid=eef09710d6&mc_eid=1d6eb84dee).



**C**orybas circinatus has recently been described from the Philippines.

David McConachie emailed, “There is a video presentation on Facebook about the Symbiotic Germination and Conservation of Terrestrial Australian Orchids by Richard Dimon: <https://www.facebook.com/groups/509610969709917/permalink/527886737882340/>. For those of you who are not on Facebook you can view it through this link [\*\*W\*\*ild Orchid Watch launches app \(from NOSSA Journal June 2020\). Wild Orchid Watch is an Australian national citizen science project designed to collect, record and share scientific information about Australian native orchids. Users can now install the Wild Orchid Watch \(WOW\) app on their mobile devices, simply by typing in their internet browser: \[app.wildorchidwatch.org\]\(http://app.wildorchidwatch.org\) and following the prompts. Orchid observations collected using the WOW app are identified, managed and stored by \*iNaturalist\*. An \*iNaturalist\* user name and password can be used when logging into the WOW app, otherwise the WOW app sign-up prompts a user to follow a few simple steps to create an \*iNaturalist\* username and password. The WOW app will put an icon on a user's home screen so after the initial sign-up they can always log in to the WOW app via the icon. To find out more, and to watch the instructional videos, one of them featuring Sophie Thompson, go to the website, <https://www.wildorchidwatch.org/>. This needs to be modified for NZ use—Ed.](https://video-lga3-1.xx.fbcdn.net/v/t39.24130-2/10000000_260329755177937_151851599512862649_n.mp4?nc_cat=100&nc_sid=985c63&efg=eyJ2ZW5jb2RlX3RhZyl6Im9lcF9oZCJ9&nc_ohc=bWnICDHSSqwAX9y30nb&nc_ht=video-lga3-1.xx&oh=04971904006681fe0675a844c45c9b86&oe=5EED6FED.”</a></p></div><div data-bbox=)

**P**at Enright directs those interested in Australian orchid conservation to [https://www.fncv.org.au/wp-content/uploads/publications/fnnews/2018/finn\\_292.pdf](https://www.fncv.org.au/wp-content/uploads/publications/fnnews/2018/finn_292.pdf).

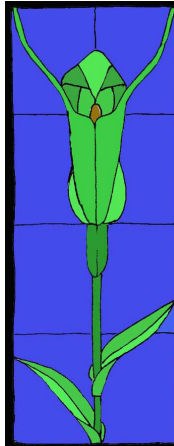
[Control-Click] on the underlined blue (hyperlinked) text to go to these sites—Ed.

## Two heads are better than one...

A rare two-flowered *Corybas cheesemanii* from Papatahi in the southern Wairarapa on 13 June: it took the eagle eyes of both Pat Enright and the editor to spot the tiny plants at the base of a beech. *Pterostylis alobula* and *Acianthus sinclairii* were also flowering and there was a promising show of *Thelymitra* and *Caladenia* leaves.



# THE 2020 NZNOG AGM AND FIELD DAYS



## The 2020 AGM & field days will be in Northland

The dates are 30 October to 1 November, although a second trip to Te Pahi or another location may be made on 2 November for those able to stay a bit longer.

Field trips are planned for the Kaimaumuau wetlands and various sites at Te Pahi, subject to the approval of local stakeholders. There is no shortage of other options if any of the planned outings cannot proceed.

Participants will be based in Pukenui/Houhora, where there is a range of accommodation available. The main accommodation venues are Pukenui Lodge Motel, Wagener Holiday Park and Pukenui Holiday Park. All of these, along with holiday homes and boutique accommodation, are within a few minutes' drive of our dining and meeting venue on Friday and Saturday nights, the Houhora Big Game & Sports Fishing Club. Please google Houhora/Pukenui accommodation for more information.

Please arrange your own accommodation. A registration form will be sent out in the not too distant future, so we can get an indication of who is intending to be there for catering and transport purposes.

If you have any queries please contact Bill at [bill-campbell@xtra.co.nz](mailto:bill-campbell@xtra.co.nz) or by phone on 021 406173.

**The NZNOG 2019 AGM minutes** summarised,  
*Dannevirke Services & Citizens Club 7 December 2019.*

**Apologies:** Eric Scanlen, Murray Dawson, Gordon Sylvester, Mark Moorehouse, Kath & Neville Henderson, Bill Liddy, Georgina Upson, Michael Pratt.

**Present:** David McConachie (Chair), Allan Ducker, Mike Lusk, Cheryl Dawson, Marilyn Hewitt, Brian & Judith Tyler, Margaret Menzies, Glyn Wren, Clair Francis, Ian St George, Alisdair Nichol, Graeme Jane, Carlos Lehnebach, Andreas Zeller, Tina Qin, Gael Donaghy, Bill Campbell, Pat Enright, Pam Shearer (minutes).

**Minutes** of the 2018 AGM had been circulated with the Journal. There were no matters arising from the 2018 minutes.

**Chairman's Report:** David McConachie mentioned this was his last day as Chair. Membership number is 82 – half the number of five years ago. David called for proposals to increase membership. At the 2018 AGM, there was discussion about whether to continue with the Hatch Medal or replace it with another. The original mould is missing, and a new mould will cost about \$1,500 – \$2,000.

David thanked the executive, Ian for his sterling work on the Journal, and Judith for keeping the books going.

**Treasurer's Report** – Judith Tyler distributed the accounts. A copy of both years' accounts will be lodged with the Companies Office (we are an incorporated Society). Income was down this year, due to lower membership and fewer *Pocket Guide* sales.

Balance at start of financial year (1 October 2018):	\$14,753.13
Income:	\$3,472.42
Expenditure:	\$2,657.79
Bank Balance:	\$15,567.76

**Elections:** David McConachie preferred not to stand again for the Chair, and this was accepted by the board. Bill thanked David for his many years of service to the Group. Judith Tyler wished to stand down from her role as Treasurer, and nominated David McConachie. David agreed to take on the role next year. So the board created the position of Deputy Treasurer.

**Chair:** Gael Donaghy  
**Deputy Chair:** Mark Moorhouse  
**Treasurer:** Judith Tyler

**Deputy Treasurer:** David McConachie  
**Secretary:** Pam Shearer

**Committee:** Ian St George, Graeme Jane, Bill Liddy, Brian Tyler, Michael Pratt, Mike Lusk, Murray Dawson, Alasdair Nichol, Carlos Lehnebach, Bill Campbell.

#### **Presentation of the Hatch Medal 2019.**

David McConachie is the recipient of the Hatch Medal 2019.

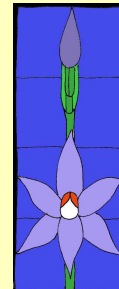
David seems to have been our chair since time immemorial. The earliest record we can find of him in that office is 2007, but it may have been longer. At any rate for more than the last ten years David has guided, in his quiet, benign and gentlemanly way, the NZ Native Orchid Group and its annual meetings. 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.

#### **General Business**

Ian St George had given **notice of two motions:**

1. *The Hatch medal should be awarded from time to time when a deserving recipient, nominated by a financial NZNOG member, is approved by a majority of the executive. It need not be annual.*

There are 6 medals left from the original casting. The award should probably cease when that supply is exhausted, at which time the then members should discuss any desire for a replacement. *Carried.*



2. All financial Members of the Group should receive the NZNOJ by email. Those who wish to receive the NZNOJ in printed form should pay an extra amount to be determined from time to time according to the costs of publishing and postage. People under 30 years who are not Members may request the NZNOJ free by email.

Current email sub is \$20: no printing costs.

Current postal sub is \$35 (ie, \$15 more): they cost \$31 p.a. (Current postage is \$2.70 per journal. Current printing is about \$5 per journal. Total c.\$31 p.a.)

Thus postal recipients pay \$15 more than email members for a \$31 extra cost – ie, their sub is \$4 cf. \$20 for email recipients.

Ian recalled that we increased the email sub last year and he supported that. In retrospect he thinks it was a mistake: Membership has fallen as free online interest groups have appeared. He believes we have to compete by becoming more accessible to the young.

Ian noted that Membership of the Group is an altruistic act rather than one associated with rewards. He would like to make the email journal free for under 30s, asking recipients only to make a voluntary donation – which, if \$10 or more, would give them Membership. Charges could be: For over-30 years old – email recipients \$10 for Membership, and for posted copies \$40: \$10 membership + \$30 costs.

There was general discussion about Ian's motion.

Judith mentioned that a number of members don't have computers so can't receive emailed journals, and some journals sent are complimentary – such as to Kew Gardens. She thought all members should pay for the Journal. Allan Ducker asked if the Journal was free, did this include membership. *Not carried.*

**Native Orchid Website.** General discussion on whether we should continue with it. The annual cost of the website is reasonable, at \$248.00, Michael Pratt has indicated he will keep it updated.

There was a discussion around starting a **Wikipedia Page** for native orchids and comment on the Group using the NZ native orchid **Facebook** page.

**Yahoo Group.** As there are not many users we should discontinue this Group.

**Fund raising.** Judith didn't think it was necessary to fund raise at this point. At the last AGM Carlos mentioned a calendar to fund raise, Judith didn't think a calendar would raise a lot – given the cost of production. Carlos also suggested placing a "donation fee" on the website, Gael would look into it.

Mark Moorehouse emailed he would like to see an **annual topic set for research/discussion** by the Group. This was agreed to by the Group, and the topic of "Hybridisation in Orchids" was chosen.

Judith mentioned that as he had done a lot for NZOG, including proof reading the Journal, recruiting new members, co-writing native orchid books, contributing regularly to the Journal, etc., she would like to nominate **Eric Scanlen for life membership**. *Carried – unanimously.*

Allan mentioned that this year the **Iwitahi field days** clashed with the Native Orchid field days weekend, meaning some members would have had to choose which field days to attend. The Group will confer with the Iwitahi Group over the field days dates.

Mike mentioned that **Iwitahi is now reverting to native forest** and is no longer a suitable habitat for a lot of the orchids there, which appear to be dying out. He would like the situation to be reviewed by the Group. Pat Enright commented that re-forestation is a natural process and this is the situation at Iwitahi.

**Presentations:** Ian St George discussed *Thelymitra longifolia* s.l. (see this journal issue) and Carlos Lehnebach spoke on **Orchid Conservation**. Carlos talked about his research work over the last year, and also about different types of orchid conservation, including propagation, seed germination, restoration of orchid habitat and translocation.

The next AGM is to be held in the Far North, perhaps at Labour Weekend.

*Gael declared the meeting closed at 7:20pm on 7 December 2019.*

