

# The New Zealand Native Orchid Journal

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Have a look through your archived orchid photographs and see if you too can find shots you took of an unusual plant that now turns out to be one of the newly described species.

# The type locality: Ian St George

## *Thelymitra xdentata* from the Puffer track, Kaitoke.

In 1968, tidying up the orchid taxonomy in preparation for *Flora II*, Lucy Moore described *Thelymitra dentata*. [1]

### ***Thelymitra dentata* L. B. Moore sp. nov. (Fig. 1)**

Folium lineare, plus minusve canaliculatum, crassum. Inflorescentia pauciflora. Perianthium purpurascens, lineis saturioribus striatum. Sepala petalaeque lata, labellum oblongum vel obovatum. Columnae brachia basin versus applanata et plus minusve canaliculata, margine lobis, dentibus vel fimbriis instructa, apicem versus ciliis numerosissimis lutescentibus demum ferrugineis ornata; lobus post antheram ascendens, plus minusve cucullatus, antheram obtegens, rubescens, marginem versus subtuberculatus, luteus.

TYPUS: CHR 168063, Puffer Track, Kaitoke, Wellington. *L. B. Moore, I. M. Morice*, 13 Dec 1965.

Plant at flower c. 15-40 cm tall. Leaf 10-20 mm wide, shallowly channelled, thick. Inflorescence few-flowered. Perianth c. 15 mm long, pinkish to very pale lavender or blue with strong blue stripes, especially on petals. Sepals and petals subsimilar, broad, slightly obovate. Labelium more oblong-obovate. Column-arms thickened about the nerve, flanged towards the base with delicate pinkish lobes, teeth or fimbriae that sometimes extend down the front margin of the column-wing; the arms bent inwards so that the two globose bunches of crowded cilia meet just above the anther-tip; cilia at first pale yellow, turning brown with age, in old flowers standing more erect; post-anther lobe taller than anther and more or less hooded over it, usually dark red and more or less tuberculate towards the yellowish margin.

DISTRIBUTION: NZ North and South Islands, on clay and peaty soils. Plants have been found only in small numbers but specimens from widely scattered localities are remarkably uniform. Fl.: Nov–Jan.

Moore listed representative specimens, including one collected by AP Druce from the Puffer track in 1964; Inangahua, Lake Brunner, Kaikohe. She added,

The denticulate margin of the flanged column-arm (to which the specific epithet refers) distinguishes *T. dentata* from all other New Zealand species with tall post-anther lobes except *T. pulchella* Hook.f. in which the yellow cilia do not form close globose masses, and the column is less inclined to be hooded. The striped perianth gives a strong superficial resemblance to *T. pulchella*.

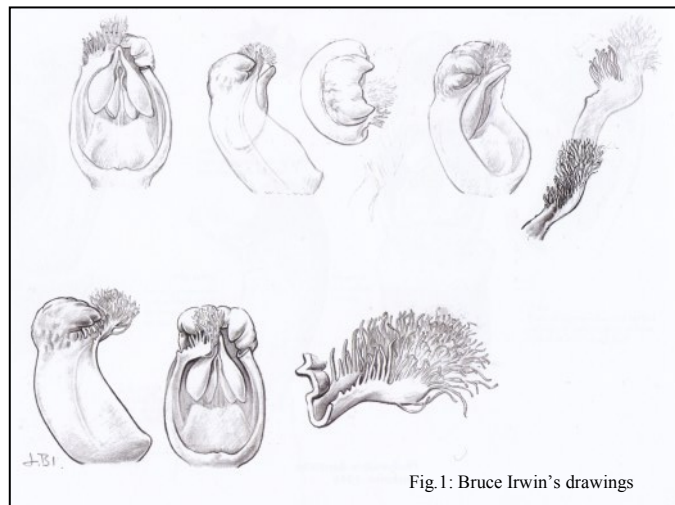


Fig. 1: Bruce Irwin's drawings

Druce's notes indicate he suspected this was a hybrid between *T. pulchella* and *T. pauciflora*.

Doug McCrae thought it was a hybrid between *T. pulchella* and *T. longifolia* and determined to try to remake the hybrid artificially. He and Brian Molloy reported the successful hand pollination of a northern insect-dependant *T. aff. longifolia* using pollen from the northern insect-dependant *T. pulchella sensu* Cheeseman [2]. Seed from the cross was sown in December 1986 and the seedlings deflasked and grown on in 1989. The flowers (Fig.2) produced by these F1 crosses closely resembled those of naturally growing *T. dentata*, confirming it is a hybrid, *Thelymitra xdentata* (Fig.3). The pollen morphology of this "rare taxon" strongly suggests it is sterile.

They went on to make a backcross between the F1 hybrid and *T. pulchella*, producing a vigorous but sterile plant, and remarking, "The occurrence of such backcrosses in nature is unknown, but is probably unlikely."

Moore wrote, "Column-arms thickened about the nerve, flanged towards the base with delicate pinkish lobes, teeth or fimbriae that



Fig.2: Doug McCrae & Brian Molloy's artificial reconstruction of *Thelymitra xdentata*.

sometimes extend down the front margin of the column-wing; the arms bent inwards so

that the two globose bunches of crowded cilia meet just above the anther-tip; cilia at first pale yellow, turning brown with age, in old flowers standing more erect; post-anther lobe taller than anther and more or less hooded over it, usually dark red and more or less tuberculate towards the yellowish margin." (*My emphases*).

#### References

1. L. B. Moore (1968) Taxonomic notes on New Zealand monocotyledons, *New Zealand J. Bot.* 6: 473-492.
2. McCrae, D.P. and Molloy, B.P.J. (1998). The artificial reconstruction of the natural New Zealand hybrid *Thelymitra X dentata* (Orchidaceae). *New Zealand J. Bot.* 36: 121-125.

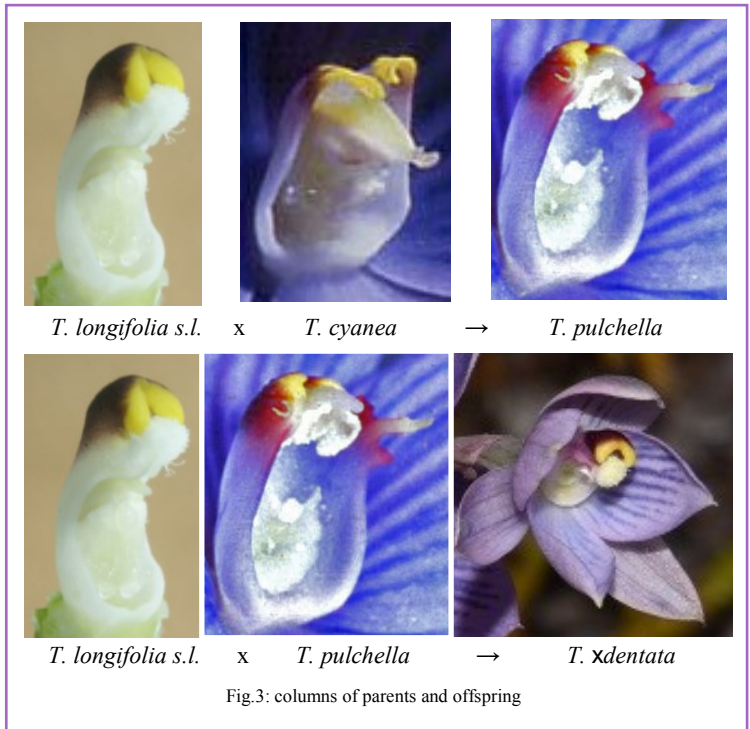


Fig.3: columns of parents and offspring

# Eponymous orchids

## Wallburga Zeller (1946 –) & *Corybas walliae*

By Val Smith

Born in Burggriesbach in Bavaria, Germany, on 22 August 1946, Walburga (Walli) Zeller, née Zech, was the daughter of Anton Zech (1889–1959) and Kreszens Zech, née Körner, (1909–1992). She was the only child of Anton Zech's second marriage, and was named after her god-mother.

She grew up on a small 5-hectare farm and has fond memories of long Sunday walks with her father through the forests and meadows. His sudden death changed the living conditions of the family and thirteen-year-old Walburga and her mother had to run the family farm alone. They worked in the fields growing potatoes, corn, and grain, and tended five cows and ten to twelve pigs. These chores, coupled with the delicate health of her mother, were very time consuming, and Walli quit school when she was fourteen. At the age of fifteen, she took a position assisting the local veterinarian with work on various farms, and housekeeping.

At eighteen years old, she moved back to her mother and worked in a toy factory. As a young woman she was actively involved in Kolping, a Catholic group. She was also part of the local theatre group; she loved acting and performed in several plays. In February 1971 at a Fasching (carnival) event she met her future husband Fritz Zeller. After their marriage, as well as taking care of their five children, she took over the administrative tasks of her husband's family stonemasonry business. A keen gardener, she liked spending time outdoors, maintaining a large vegetable garden, cultivating berry bushes, fruit trees and flowers. She

also enjoyed travelling, and visited Italy, Greece, Syria, Jordan, Spain, and Egypt – her highlight was sailing along the River Nile!

Now (2016), after her second battle against cancer, she spends her time knitting, helping with the business customer service and taking care of her husband.

Meanwhile Walli's son Andreas Zeller came to Victoria University of Wellington, New Zealand, as a PhD student in 2008, and graduated Doctor of Philosophy (Chemistry) in 2014. Te Papa botanist Carlos Lehnebach had received a grant to study spider orchids, and invited Andreas to conduct the scent analyses in the project Carlos was leading. For Andreas it was an opportunity to combine his knowledge of chemistry with his lifetime interest in the natural world. However, he became so fascinated by the New Zealand orchids and their biology that his involvement extended beyond the chemistry, and he participated in field trips, pollination and taxonomy studies.

An unexpected result of the team's research was the discovery that what was previously considered one species of orchid is actually more than five, and although the scientists had to use genetic data to differentiate among the species, fungus gnats appeared to do it based on smell. *Corybas walliae*, one of five new spider orchid species described in their 2016 paper, "is named after Walli (Walburga) Zeller, mother of the second author of [the] article". Andreas wished his mother could have come to New Zealand, but unfortunately her state of health prevented it. Naming the orchid after Walli was a way of giving her a connection with Aotearoa New Zealand.

### *Corybas walliae*

(*Corybas*: Greek *korys* 'helmet', from the shape of the flower).

Previously included with *Corybas trilobus*, this spider orchid was first described in 2016. It is a seasonal orchid, 13-34 mm tall at flowering in October to mid-November. The solitary leaf is heart-shaped, the flower mostly pale green or yellowish, occasionally with a few

blotches of pink on the upper parts. Montane to subalpine, *Corybas walliae* is found in leaf litter under southern beech or kamahi forest, or growing in mossy seepages or gravelly soils between 600 and 1150 m. The species is endemic and fairly common in the North and South Islands of New Zealand.

#### References

- Ballance, A 2016. When orchids smell like mushrooms—a tale of botanical deceit. <http://www.radionz.co.nz/> (accessed 9 December 2016).
- Lehnebach, C A; Zeller, A J; Frericks, J; Ritchie, P 2016. Five new species of *Corybas* (Diurideae, Orchidaceae) endemic to New Zealand and phylogeny of the *Nematoceras* clade. *Phytotaxa* 270(1): 1-24 (accessed online 5 November 2016).
- Zeller, AJ 2016. pers. comm.

*Corybas walliae* ►  
photographed by  
Carlos Lehnebach,  
Te Papa

Andreas Zeller and  
Wallburga Zeller with  
Carlos Lehnebach ▼  
(photo by Simon Fisher for the  
*Hilpoltsteiner Kurier*)



# The NZ orchids

## the editor's 2017 list

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

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

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

### **Adenochilus Hook.f. Fl. Nov.-Zel. 1: 246, t.56 (1853)**

**Adenochilus gracilis** Hook.f. Fl. Nov.-Zel. 1: 246, t.56 (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).

*Adelopetalum 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).

*Stegostyla 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 *calliniger* 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).

**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).

*Arethusa catenata* and *Caladenia alba* are names used for Australian plants once confused with NZ taxa.

*Petalochilus calyciformis* R.S.Rogers. J. Bot. 62: 66 (1924) and *Petalochilus saecularis* R.S.Rogers. J. Bot. 62: 66, t.571, 4-7 (1924) are treated as aberrant floral (epicleric) mutations, probably of this species.

A similar taxon has red hairs and later flowering. There is also a larger late flowering plant with (usually) 2-3 fls.

**Caladenia fuscata** (Rchb.f.) M.A.Clem. & D.L.Jones, Austral. Orchid Res. 1: 25 (1989).

*Petalochilus fuscatus* (Rchb.f.) D.L.Jones & M.A.Clem., Orchadian 13: 410 (2001).

*Caladenia carnea* var. *fuscata* Rchb.f., Beitr. Syst. Pflanzenk.: 63 (1871).

HB Matthews's *Caladenia "nitida-rosea"* (see Scanlen E. Matthews & son on orchids. NZNOG Historical Series 2006; 14: 12) may be this or the Tasmanian *C. atrocilia* (E. Scanlen, pers. com.)

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

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

There seem to be a number of taxa currently included in the *S. lyallii* group, including a small form from Nelson Lakes, tagnamed *C. "Bacon creek"*. Some plants appear close to the Australian *Caladenia alpina*.

**Caladenia minor** Hook.f. Fl. Nov.-Zel. 1: 247, t.56b (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* is not clear, but it may be a form of *C. chlorostyla*.

**Caladenia nothofageti** D.L.Jones, Molloy & M.A.Clem. Orchadian 12(5): 226, f1 (1997).

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

**Caladenia pusilla** W.M.Curtis. Stud. Fl. Tasman., 4A: 133 (1980).

A tiny pink flowered entity with broad oval sepals and petals, an incurved dorsal sepal and a triangular labellar midlobe; grows near Wellington, Taranaki and in Northland.

**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 flowers have a clear two rows of calli on the labellum, others have extra calli scattered to either side of the two rows.

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

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

*Paracaleana minor* (R.Br.) Blaxell. 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).

*Caleana nubingii* Nicholls. Victoria Naturalist 48: 15 (1931).

*Paracaleana sullivanii* (F.Muell.) Blaxell. 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 (1873).

*Calochilus campestris* as meant by Fitzg. Austral. Orchids 1(4): t.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).

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

The NZ form of *Chiloglottis cornuta* may differ from the Australian; the colour and pattern of labellar calli vary.

**Chiloglottis formicifera** Fitzg. Austral. Orchids 1(3): (1877).  
*Myrmecilia formicifera* (Fitzg.) D.L.Jones & M.A.Clem. Orchadian 15(1): 37 (2005).

Only one record of this vagrant 100 years ago.

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

*Simpliglottis 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, f.2 (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.Cunn. (1837).

**Corybas carsei** (Cheeseman) Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945).

*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 cheesemanii** (Hook.f. ex Kirk) Kuntze. Revis. Gen. Pl. 2: 657 (1891).

*Corysanthes cheesemanii* Hook.f. ex Kirk. Trans. & Proc. New Zealand Inst. 3: 180 (1871).

*Corybas acontiflorus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945), is not that of Salisb. (1807).

**Corybas confusus** Lehnebach Phytotaxa 270 (1): 9 (2016).

The species tagged C. “roundleaf”. A form on the Chathams identified as C. aff. *sulcatus* may fall within C. *confusus*.

**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 saprophyticus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 366, t.71 (1952), is not that of Schltr. (1923).

**Corybas dienemus** D.L. Jones Fl. Australia 50: 572 (1993).

*Corysanthes dienema* (D.L.Jones) Szlach

*Nematoceras dienemus* DL Jones et al. Orchadian 13(10): 437–468 (2002).

**Corybas hatchii** Lehnebach. N.Z. Native Orchid Journal 139: 4 (2016).

*Corybas macranthus* (Hook.f.) Rchb.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* “Waiouru” tagname.

**Corybas hypogaeus** (Colenso) Lehnebach. N.Z. 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. Richardiana 3(2): 98 (2003).

**Corybas macranthus** (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 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 entities in the C. *macranthus* group. Probable hybrids with insect-pollinated members of the C. *trilobus* group have been reported.

**Corybas oblongus** (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 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).

There are two or three taxa included in this complex. One appears to be identical with HB Matthews’s *Corysanthes* “aestivalis” (see Scanlen E. Matthews & son on orchids. NZNOG Historical Series 2006; 14: 12). A white flowered form (Nelson lakes and subantarctic islands) is more clearly separate.

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

The species tagged C. “darkie”.

**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. Richardiana 3(2): 98 (2003).

**Corybas papillosus** (Colenso) Lehnebach. N.Z. 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).

**Corybas rivularis** (A.Cunn.) Rchb.f. Beitr. Syst. Pflanzenk. 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 orbiculatus* of Colenso (1891).

The *Corybas rivularis* complex includes taxa with the tagnames C. “Kaimai”, C. “rest area”, C. “Kaitarakihī”, C. “whiskers” (aka C. “viridis”), C. “Mangahua”, C. “sphagnum”, C. “Pollock” and C. “Motutangi”.

**Corybas rotundifolius** (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 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. Repert. 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** Lehnebach Phytotaxa 270 (1): 12 (2016).

The species tagged C. “trisetp”.

**Corybas trilobus** (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 67 (1871).

*Nematoceras trilobum* Hook.f. Fl. Nov.-Zel. 1: 250 (1853).

*Corysanthes triloba* (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 265 (1864).

A number of taxa in the *Corybas trilobus* group are still of speculative taxonomic status; they include the tiny May to July flowering forms with the tagname C. “pygmy”: C. “Rimutaka”, C. “Craigieka”, C. “Inbrive”, C. “tridd”, C. “Trotters” and others.

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

The species tagged C. “eastern hills”.

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

The species tagged C. “lriwhite”.



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

**Cryptostylis subulata** (Labill.) Rchb.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.) Rchb.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 by many authors until now is not that of R.Br. Prodr. Fl. Nov. Holland.: 322 (1810).

**Danhatchia Garay & Christenson. Orchadian 11(10): 469, f.471 (1995)**

**Danhatchia australis** (Hatch) Garay & Christenson. Orchadian 11 (10): 470 (1995).

Yoania 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 lessonii Colenso. Trans. & Proc. New Zealand Inst. 15: 326 (1883).

Wimika cunninghamii (Lindl.) M.A.Clem., D.L.Jones & Molloy. Orchadian 12(5): 214 (1997).

**Drymoanthus Nicholls. Victorian Naturalist 59: 173 (1943)**

**Drymoanthus adversus** (Hook.f.) Dockrill. Australasian Sarcocochilus adversus Hook.f. Fl. Nov.-Zel. 1: 241 (1853).

Sarcocochilus adversus 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.Rolfé. Phytotaxa 277 (3): 242 (2016). The species tagged G. "long column black".

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

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

**Gastrodia minor** Petrie. Trans. & Proc. New Zealand Inst. 25: 273, t.20, f.5-7 (1893).

**Gastrodia molloyi** Lehnebach & J.R.Rolfé. Phytotaxa 277 (3): 244 (2016). The species tagged G. "long column".

**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).

Corunastylis 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 tunicatum 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).

Corunastylis 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. t.306 (1840).

Microtis biloba Nicholls. Victoria Naturalist 66: 93, f.O-L (1949).

Microtis papillosa Colenso. Trans. & Proc. New Zealand Inst. 18: 269 (1886). The type has not been found but Colenso's notched labellum suggests M. arenaria (which in turn has been included in M. unifolia by others).

**Microtis oligantha** L.B.Moore. New Zealand J. Bot. 6: 473, f.1 (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 Rchb.f. Bonplandia 5: 36 (1857).

Microtis benthamiana Rchb.f. Beitr. Syst. Pflanzk. 24 (1871).

Microtis longifolia Col. Trans. & Proc. New Zealand Inst. 17: 247 (1885).

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

Microtis aemula Schltr. Bot. Jahrb. Syst. 39: 37 (1906).

Microtis bipulvinaria Nicholls. Victoria Naturalist 66: 92-94, f.A-F (1949).

Microtis holmesii Nicholls. Victoria Naturalist 66: 93, f.G-I (1949).

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

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

Epipactis 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 1.3377 (1835).

Microtis fritetorum Schldt. 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 an autumn flowering form and may be 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-zeelandiae** (A.Rich.) M.A.Clem., D.L.Jones & Molloy. Austral. Orchid Res., 1: 100 (1989).

Diuris novae-zeelandiae A.Rich. Essai Fl. Nov. Zel. 163 t.25, f.1 (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).

**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 hectorii 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 suttoni 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.Matthews 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 alobula** (Hatch) L.B.Moore. New Zealand J. Bot. 6: 486, f.3 (1969).

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

*Pterostylis trullifolia* Hook.f. var. *alobula* Hatch. Trans. Roy. Soc. NZ 77: 244, t.30, f3E–H (1949).

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

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

*Diplodium 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, f.3 (1969).

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

*Diplodium brumale* (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 cardiostigma** D.Cooper. New Zealand J. Bot. 21: 97, f.1,2 (1983).

**Pterostylis cernua** D.L.Jones, Molloy & M.A.Clem. Orchadian 12 (6): 267, f.2 (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 vereanae* R.S.Rogers. Trans. & Proc. Roy. Soc. South Australia 38: 360–361, f.18(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 tagname *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, t.18 (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, t.22 (1949).

**Pterostylis montana** group: includes as many as 14 undescribed taxa.

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

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

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

**Pterostylis puldososa** 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).

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

*Pterostylis banksii* var. *silvicultrix* F.Muell. Veg. Chath. Is. 51 (1864).

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

This name is apt for N.Is. plants resembling *P. australis*.

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

This name is apt for large-flowered Ruahine & Tararua plants.

**Pterostylis tanyпода** 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 cyncephala* 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. Muelleria 8(2): 177 (1994).

*Plumatichilus tasmanicum* (D.L.Jones.) Szlach. 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 plumosa* as meant by Cooper. Field guide to NZ native orchids 51 (1981), is not that of Cady (1969).

There may be a second unnamed NZ entity.

**Pterostylis tristis** Colenso. Trans. & Proc. New Zealand Inst. 18: 271 (1886).

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

*Pterostylis mutica* 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).

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

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

**Spiranthes novae-zelandiae** Hook.f. Fl. Nov.–Zel. 1: 243 (1853).

*Spiranthes australis* as meant by Hook.f. Handb. N. Zeal. Fl. 272 (1864), is not that of Lindl. (1824).

*Spiranthes sinensis* as meant by Rupp & Hatch. Proc. Linn. Soc. New South Wales 70: 58 (1946), is not that of Ames (1908).

*Spiranthes lancea* as meant by Hatch. Trans. Roy. Soc. New Zealand 82: 614 (1954), is not that of Backer, Bakh. f. & Steenis (1950).

*Spiranthes alticola* D.Jones has been applied to Kew specimens from New Zealand (wrongly we think).

The names *Neottia sinensis* and *Spiranthes sinensis* var. *australis* (R.Br.) H.Hara & Kitam. Acta Phytotax. Geobot. 36 (1–3): 93 (1985) have been used for *Spiranthes australis* in Australia.

**Spiranthes "Motutangi"**: tagname for endangered Far North taxon.

**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 brevifolia** Jeanes. Muelleria 19: 19–79 (2004).

**Thelymitra carnea** R.Br. Prodr. Fl. Nov. Holland.: 314 (1810).

*Thelymitra imberbis* Hook.f. Fl. Nov.–Zel. 1: 244 (1853). A colour form only.

*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. Fislog. Sallsk. Lund 8: 21 f (1878) may be 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 cyanea** (Lindl.) Benth. Fl. Austral. 6: 323 (1873).  
 Macdonaldia cyanea Lindl. Bot. Reg. 25 (1840).  
 Thelymitra uniflora Hook.f. Bot. Antarct. Voy., Vol. 1, Fl. Ant-art.: 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. cedricsmithii 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 circumseptata as meant by Hatch. NZNOG Journal 65: 8 (1997), is not that of Fitzg. (1878).
- Thelymitra hatchii** 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 concinna Colenso. Trans. & Proc. New Zealand Inst. 20: 207 (1888) appears to be the pink-ciliated form of T. hatchii, and if so has precedence.
- Thelymitra ixioides** Swartz. Kongl. Vetensk. Acad. Nya Handl. 21: 253, t.3, f.L (1800).  
 Thelymitra ixioides 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).  
 Serapias regularis Banks & Sol. ex G.Forst. Prodr. 59 (1776).  
 Thelymitra forsteri Sw. Kongl. Vetensk. Acad. Nya Handl. 21: 228 (1800).  
 Thelymitra nemoralis Colenso. Trans. & Proc. New Zealand Inst. 17: 249 (1885).  
 Thelymitra alba Colenso. Trans. & Proc. New Zealand Inst. 18: 272 (1886).  
 Thelymitra cornuta Colenso. Trans. & Proc. New Zealand Inst. 20: 206 (1888).  
 Thelymitra longifolia J.R.Forst. & G.Forst. var. alba (Colenso) Cheeseman. Man. New Zealand Fl. 339 (1925).
- Thelymitra longifolia J.R.Forst. & G.Forst. var. forsteri Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 B–E (1952).  
 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 has been tagnamed T. “tholinigra” by Scanlen.
- Thelymitra longifolia** group: some undescribed taxa that appear to be insect-pollinated.
- Thelymitra malvina** M.A.Clem., D.L.Jones & Molloy. Austral. Orchid Res. 1: 141 (1989).
- Thelymitra mathewsii** Cheeseman. Trans. & Proc. New Zealand Inst. 43: 177 (1911).
- 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 (Muelleria 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).  
 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).  
 T. pulchella is a very variable species, yet all of these appear to have features that are relatively stable in some populations.
- Thelymitra purpureofusca** Colenso. Trans. & Proc. New Zealand Inst. 17: 249 (1885).
- Thelymitra sanscilia** Irwin ex Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 397, plate 81 B–E (1952).
- Thelymitra tholiformis** Molloy & Hatch. New Zealand J. Bot. 28: 111, f6 (1990).  
 Thelymitra intermedia as meant by L.B.Moore. Fl. New Zealand Vol. 2: 129 (1970), is not that of Berggren (1878).
- Thelymitra “Ahipara”**: an unnamed taxon from the Far North, may be identical with T. “darkie”.
- Thelymitra “Comet”**: 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]). May be identical with T. “Ahipara”.
- Thelymitra “rough leaf”**: undescribed taxon from the Far North (see McCrae. NZNOG Journal 24: 11; 77: 22 [1987]).
- Thelymitra “sansfimbria”**: plain blue flowers from Far North (see Scanlen. NZNOJ 98: 36 & 102: 39, 45).
- Thelymitra “sky”**: undescribed taxon from the Far North (see Scanlen. NZNOG 70: 30–35, f6 [1998]).
- Thelymitra “tholinigra”**: (see Scanlen. NZNOJ 85: 10, 15).
- Thelymitra “Whakapapa”**: undescribed taxon from Ruapehu, that may correspond to T. purpureofusca, or may be distinct.

**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. Antarct. Voy., Vol. 1, Fl. Antarct.: 69 (1844).  
 Lyperanthus antarcticus Hook.f. Bot. Antarct. Voy., Vol. 1, Fl. Antarct.: 544 (1847).

Are you worried about what a species really is? Does it concern you when you read, “The biological species concept defines a species as members of populations that actually or potentially interbreed in nature, not according to similarity of appearance. Although appearance is helpful in identifying species, it does not define species”? If so you are not alone. [https://en.wikipedia.org/wiki/Species\\_problem](https://en.wikipedia.org/wiki/Species_problem) is worth a look. Most other sensible people are worried too.

You can read (at <https://mro.massey.ac.nz/handle/10179/4063>) Roger Watkins’s PhD thesis on *The biogeography, ecology and endophyte mycorrhiza of the New Zealand Corybas alliance (Orchidaceae): specifically, Nematoceras iridescens (Irwin et Molloy) Molloy, D.L.Jones & M.A.Clem. (species).*

# Notes etc

## The New Zealand Native Orchid Journal

The main aim of the New Zealand Native Orchid Group is informing people about native orchids, so we permit others to copy material published here, provided the source and author are acknowledged. Authors should note this as a condition of acceptance of their work. The *Journal* is published quarterly from February, and deadline for copy is the first of the month beforehand. We like copy to be typed or sent on disk or by email.

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WE MAY NOT SHARE AUTHORS' VIEWS .



**Above:** *Corybas confusus*, photos Pat Enright, Tauherenikau, Wairarapa.  
**Below:** *Corybas* "Trotters", photos Te Wharau, Wairarapa.





▲ *Corybas iridescens*,  
Cambourne, Wellington, 1 August 2017:  
photo Matt Ward taken to show the bead  
in the throat of the labellum.

◀◀ *Acianthus sinclairii*,  
Awapikopiko reserve, Taranua, 22 July  
2017: photo Cheryl Dawson.

◀ But in the same week they were well in  
fruit at Airlie Rd, Plimmerton—Ed.

Photographs by Cheryl Dawson.

*Corybas iridescens*  
on the Coppermine track in the western Ruahine foothills on 30 July—early for this species. ►

*Corybas cheesemanii*  
on the Mt Holdsworth track, Taranaki on 31 July —late for this species. ▼





Matt Ward posted these photographs from near Wellington on our yahoogroups site. They show *Corybas vitreus* in full flower (1, 2), *C. hatchii* in bud (4) and a hybrid between the two (3, 4). The putative hybrid has features (eg, dorsal sepal and leaf) intermediate between the two species. A similar phenomenon was reported from Lowe's Bush, near Masterton, in NZNOJ 93.



Robbie Graham's (left) and Mike Lusk's (right) photographs of this undescribed *Pterostylis* near Taupo in early September. Robbie had notified the Group of its surprisingly early flowering.

This is similar to the plant tagged *P.* "pulchragalea" by HB Matthews and that drawn by Bruce Irwin (see next page) as *P.* aff. *montana* "late" because he had seen it at Ruapehu in December 1983.

It is certainly unique, with its labellum bent acutely forward  $\frac{2}{3}$  up, and with its labellar midlobe curiously elongated.

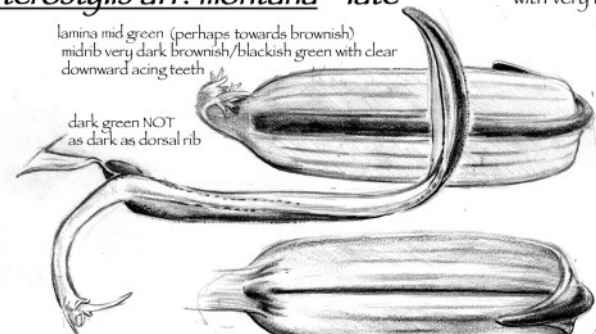


*Pterostylis aff. montana* "late"

with very long labellum from Ruapehu Dec 1983

lamina mid green (perhaps towards brownish)  
midrib very dark brownish/blackish green with clear  
downward aching teeth

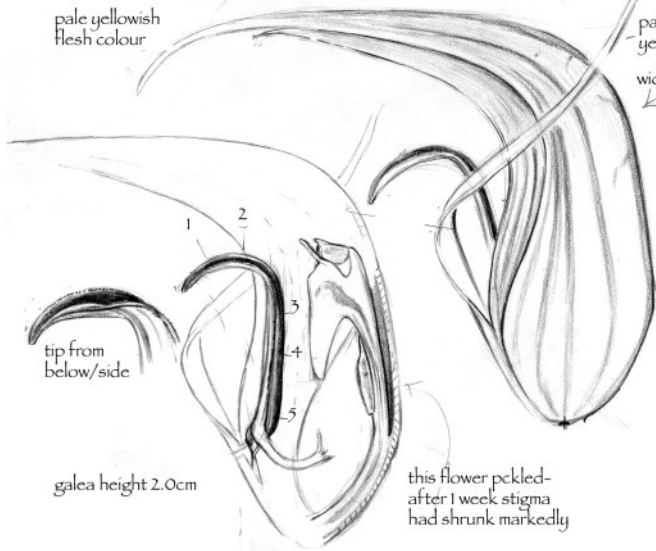
dark green NOT  
as dark as dorsal rib



pale yellowish  
flesh colour

pale flesh  
yellow

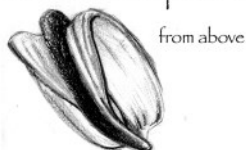
widely spaced veins



tip from  
below/side

galea height 2.0cm

this flower pickled-  
after 1 week stigma  
had shrunk markedly



from above



1



2



3



4



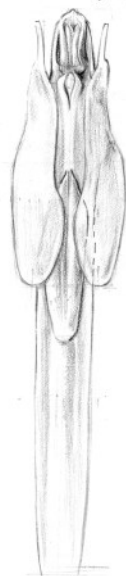
5

NOTE:-

this plant may have been collected just south of  
Pokaka which is only 5 or 6kms from where P. "Erua"  
was later collected 6 Dec 1991 see drawing 19 Dec 1983

this plant seems to resemble Pt. "Erua" 6 Dec 1991

- but:- (1) lateral sepals are bent (as is usual) at sinus  
(2) labellum almost rectangular with very tapered  
apex whereas P. "Erua" tapers more gently but  
again has very tapered apex  
(3) labellum much more strongly arched at 2/3 height



lateral sepals  
divided  
longitudinally

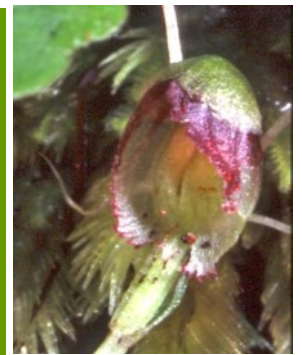
lateral sepals  
seem much  
narrower than  
P. sp. "X" probably  
from Pokaka

seems not typical of P. sp. aff. montana

- (1) long tapered tip to labellum (2) strongly bent labellum  
(3) curved appendage (4) veining of dorsal as in gramineae



◀▲ Mike Lusk photographed this *Corybas* aff. *trilobus*, with its curiously short dorsal sepal and rather flared labellum, in the eastern Ruahine foothills on 8 September. Eric Scanlen points out the short dorsal is very similar to that of *Corybas* “triaug” which he found in the Hunua foothills and mentioned in J81:41. ▶



# The Column: Eric Scanlen

## *Caladenia* “green stem” historical

Upgrading the Journal’s index has rubbed the Column’s nose in the chequered history of *Caladenia* “green stem” which seriously needed clarifying. It featured first, noticeably from the earlier mix-ups with *C. carnea* etc. in the June 1996 issue, J59, p19, with the Column’s tiny, stuck-on colour photo, (Fig. 1 herein) as *Caladenia* “green column”, from the Coromandel Pinnacles, 2 Dec. 1995. That name was in accord with Doug McCrae’s original tag, J35:32, which however, also included *C. chlorostyla* and *C. minor*. “Chlorostyla” is Brian Molloy’s Latin name for Doug’s “green column”, but Brian’s species, *C. chlorostyla*, although it has the green stem, lacks the red topped trichomes on the outer tepals, and doesn’t include either *C. “green stem”* or *C. minor*.



**Fig.1.** *Caladenia* “green stem” at 160m, 2 Dec. 1995, Coromandel Pinnacles, as depicted minutely in J59: 13. Note the atypical white legged disc calli on the foremost twin pairs, plus a stray.

Earlier, on 3 Feb. 1996, Bruce Irwin took Anne Fraser and the Column up the Waitonga Falls Track, on Ruapehu, especially to see a plentiful orchid there, which Bruce didn’t identify. It too was *C. “green stem”* **Fig. 2**, at 1,260m which altitude might explain why it was so late in the season. The Column slipped away

from the others and photographed this specimen in 3-D, which seemed to make Bruce quite uneasy when he found out about it, a few minutes later. Thus this revealing field-trip didn’t get published. The diary note has the orchid as Doug’s *C. “green column”*, but the slide labels got changed later to *C. minor* then, much later to *C. “green stem”*.



**Fig.2.** *Caladenia* “green stem” from 1,260m by Waitonga Falls Track, Ruapehu 3 Feb. 1996. Note the sparse red-topped trichomes appearing around the edges of all tepals.

Notably, Bruce found *Caladenia* “green stem” again on 21 January 2001, by the Turoa Road, at the lower end of the Blythe Track, altitude 920m. His detailed drawings and brief description are featured in Journal 79 pps. 6 & 7, but he did not tagname the orchid so it languished there, as “a small *Caladenia* from Turoa” and just got forgotten!

The Column then featured *C. “green stem”* from Albany Scenic Reserve, altitude 100m, on 21 Nov. 2001, but as “*Petalochilus minor* with a green stem”. See Journal 82 p12, with drawing Fig. 1 on p13. This flawed

*Caladenia minor* ID was maintained for nine years, as in *Colour Field Guide 3*. **Fig. 3** is another view of that *C.* “green stem” from South arm Lake Manapouri showing the taxon’s typical labellum and column. NB Fig. 2 in J82:13, was actually *C. minor* s.s. but was depicted as *Petalochilus chlorostylus* with a “red stem”, **Fig. 4**. It was also from Albany Scenic Reserve, 21 Nov. 2001. Such was the confusion at the time about these *Caladenia*, it is no wonder that Bruce wasn’t willing to tagname his Turoa specimen, five years earlier, in 1996.

Allan Ducker took up the cudgels in 2009 and at last tagged *C.* “green stem” at Waikumete Cemetery when he came across distinct colonies of both *C.* “green stem” and *C. minor*, at a mere 100m altitude. They were flowering mid-november 2009 & 2010 and showed no obvious hybrids—different pollinators? So we finally began taking *C.* “green stem” as definitely different from *C. minor*.

But some *C.* “green stem” have disc calli with all white legs as in **Fig. 5**, Allan’s from Waikumete. It is unusual but has appeared also at Albany, Awhitu, Moutere Hills and Rainbow Mountain so does need hunting out as a potential new form. Typically, *C.* “green stem” has red legged disc calli (as do *C. chlorostyla* & *C. minor*) from Lake Manapouri, Bealey Spur, St Arnaud, Waitonga Falls Track, Coromandel Pinnacles, Waikumete and Albany Scenic Reserve. But beware, all three of these taxa, *C.* “green stem”, *C. minor* and *C. chlorostyla*, can occasionally have pink legged disc calli. Note that marginal calli to the midlobe on *C.* “green stem” can be either yellow or white, due no doubt to variation within the taxon.

**Acknowledgements:** Many thanks to Allan Ducker and many other NZNOG members, who have provided photos for the above analyses.



**Fig.3.** *C.* “green stem” at 180m altitude, L. Manapouri, head of South Arm, 21 Jan. 2004. Note typical disc calli with dark red legs and yellow tops, yellow topped marginal calli to midlobe with yellow tip.

**Fig. 4.** *C. minor* Albany Scenic Reserve, 21 Nov. 2001, the model for drawing, Fig.2. J82:13. Doug McCrae could be excused for lumping them. Note a labellum similar to that on *C.* “green stem” but the stem is red. Also, the outer tepals have many dark red trichomes; close-packed on the dorsal sepal.

**Fig. 5.** *C.* “green stem” from a colony at Waikumete Cemetery, with white legs to the disc calli. This is an unusual variant occurring widely as in the text, but sporadically.