



The  
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#119



**Fig.1: *Thelymitra brevifolia* Jeanes**  
see p.4.

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*Thelymitra* "roughleaf", photographed by Kevin Matthews.

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# Editorial: Ian St George

## 1. *Thelymitra brevifolia* Jeanes Muelleria 19: 30 (2004): a new orchid for New Zealand

On 13 November I found an unusual *Thelymitra* at the Queen Charlotte walkway trackside in Endeavour Cove. Its flower had the barely-opening pale grey-lavendar tepals and fawn bifid post-anther lobe of the column of *T. colensoi*, but overall the plant was taller, and one plant had 13 inflorescences – though most had less than five. Most striking, however, was the leaf, quite distinctly different from those of other *thelymitras*: short (a quarter to a half the height of the plant); wide (100mm x 20mm on the plants I saw); and pointed—stiff and upright. There were ten plants, growing on a sunny trackside clay bank with stunted manuka and weeds (**Fig.1**).

The *T. pauciflora* complex in New Zealand is urgently in need of clarification, with named species (*T. colensoi*, *T. malvina*, *T. pauciflora* s.s., *T. sanscilia*) outnumbered by a range of tagnamed taxa (*T.* “Ahipara”, *T.* “darkie”, *T.* “orange-top”, *T.* “rough leaf”, *T.* “sansfimbria”, *T.* “sky”, *T.* “Hukatere”, *T.* “Waharara”), some of which may prove to be identical with Australian plants.

In 2004 Jeffrey Jeanes revised the complex in Australia, creating 15 new species for a total of 23 species. One of these was *T. brevifolia*, so named because “the leaf is proportionately very short compared to the height of the inflorescence”. Jeanes noted, “*Thelymitra brevifolia* is a widespread species that has been confused with *T. pauciflora*. It can be distinguished from all other members of the *T. pauciflora* complex by a combination of characters. The leaf is relatively short, usually less than half the height of the inflorescence, and often as little as a quarter the height of the inflorescence. It is also usually rather broad and flat, ribbed on the back and suffused with purplish markings, often most obvious on the margins and base.

There are usually 3 to 10 flowers (but sometimes as many as 20) that open tardily and are autogamous. The perianth segments are usually up to 10 mm long, often prominently apiculate, purplish in colour, rarely blue, pink or white. The post-anther lobe is not inflated and its apex has a rather rectangular appearance when viewed from the side and is bibbed to varying degrees ranging from shallowly emarginate to deeply and irregularly slit producing two more or less parallel lobes. It is often a distinctive reddish-orange to reddish-brown in colour. The lateral lobes are up to 1 mm long and project forward and upward in a gentle curve. The trichomes on the lateral lobes are white, usually up to 1 mm long and are arranged in small, neat, dense, sub-terminal bundles that embrace the tip of the post-anther lobe. *Thelymitra pauciflora* has a relatively longer, narrower leaf, fewer flowers and an entire to emarginate post-anther lobe on the column.”

I emailed photographs to Jeffrey Jeanes, who replied, “Not a bad match for *Thelymitra brevifolia*. The short, broad, flattish leaf looks good, but *T. brevifolia* usually has quite a bit of red pigmentation on the surface and margins, particularly towards the base. The colour of, and deep irregular looking notch in the post-anther lobe also look good. I can’t make out the structure of the lateral lobes in the photo as they’re a bit fuzzy. The hair tufts are usually quite small and more-or-less terminal in *T. brevifolia*.”

Georgina Upson reported a similar NZ plant [J112:Fig.25]. She wrote, “This last season I found plants that also seemed to match the *Thelymitra brevifolia* description in Abel Tasman National Park, but then baulked when confronted with a folded leaf. These plants are growing in sandy clay soils in a

relatively dry, baking trackside situation. They are similar to *Thelymitra* aff. *pauciflora* and very reluctant to open even on a hot day.”

A number of us had, before then, reported “*Thelymitra* aff. *brevifolia*” [e.g., J115: 38] for a taxon whose flower had an orange post-

anther lobe shaped like that in photographs we had seen of *T. brevifolia*. This will now be referred to as *T. “orange-top”*.

*T. brevifolia* is widespread in S. Australia, NSW, ACT, Victoria and Tasmania, growing in a wide variety of habitats.

## 2. Orchids of Endeavour Inlet

We spent 11-14 November 2010 at Furneaux Lodge, and walked about 4 hours each way on the Queen Charlotte walkway, from Punga Cove around to the heights about Resolution Bay. We found 29 orchid taxa, all at trackside (we did not leave the track), as follows.

Key: b = in bud; fl = flowering; fr = fruiting; s = dry seed capsules; a = abundant; m = many, f = few.

<u>taxon</u>	<u>stage</u>	<u>no.</u>	<u>notes</u>
<i>Acianthus sinclairii</i>	s	m	
<i>Caladenia chlorostyla</i>	fl	f	
<i>C. variegata</i>	fl	f	
<i>C. aff. pusilla</i>	fl	f	One small colony
<i>C. sp.</i>	b	f	Early bud
<i>Cyrtostylis rotundifolia</i>	s	f	Two small colonies seen.
<i>Diplodium trullifolium</i>	s	f	One plant and a few rosettes
<i>Earina autumnalis</i>	s	f	One terrestrial clump
<i>Gastrodia sp.</i>	b	f	One black plant in early bud
<i>Microtis unifolia</i>	b, fl	a	
<i>Nematoceras macranthum</i>	fl, fr	m	The only <i>Nematoceras</i> seen
<i>Orthoceras sp.</i>	b	m	
<i>Pterostylis banksii</i>	fl	a	Everywhere! A wide range of height and leaf size
<i>P. cardiostigma</i>	fl	f	
<i>P. foliata</i>	fr	f	
<i>P. graminea</i>	fl	a	
<i>P. irsoniana</i>	fl	f	A single [plant
<i>P. montana sensu Moore</i>	fl	f	
<i>Simpliglottis cornuta</i>	fl	f	Surprisingly scarce
<i>Singulariobas oblongus</i>	fl, fr	f	
<i>Thelymitra brevifolia</i>	fl	f	!
<i>T. colensoi</i>	fl	f	Deeply cleft PAL cf. <i>T. brevifolia</i> , but long leaf
<i>T. hatchii</i>	fl	f	
<i>T. longifolia s.s.</i>	fl	a	
<i>T. aff. longifolia</i>	fl	m	Narrow-leaved green plants, leaves channelled, PAL notched
<i>T. purpureo-fusca</i>	fl	m	Narrow-leaved dark coloured slender forms, emarginate PAL
<i>T. nervosa</i>	fl	f	
<i>T. pauciflora</i>	fl	f	Lavender and white flowered forms
<i>T. sp.</i>	b	f	Stiff upright leaf suggests <i>T. formosa</i> or <i>T. hatchii</i>

### 3. *Taeniophyllum norfolkianum* D.L.Jones, B.Gray & M.A.Clem. Orchadian 15 (4): 156 (2006).

#### *Taeniophyllum* Blume 1825

SUBFAMILY Epidendroideae, TRIBE Vandeeae, SUBTRIBE Aeridinae.

Type species: *Taeniophyllum obtusum* Blume 1825.

A genus of leafless orchids. About two hundred species from India, Sri Lanka, Japan, the Philippines to New Guinea, Australia, some Pacific Islands as far as Tahiti. New Guinea has at least eighty species. These are very small leafless epiphytes with flattened green roots which contain chlorophyll for photosynthesis. The leaves are reduced to minute, overlapping scales covering the stem apex. The flowers are short-lived and are mostly greenish-white to yellow. They grow either on tree trunks near the forest floor or on the twigs. They are found from sea level to about 1000 m. [<http://www.orchidspecies.com/indextuvwxyz.htm> accessed 26 October 2010.].

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#### *Taeniophyllum norfolkianum* (Orchidaceae), a new species from Norfolk Island.

(reprinted from *The Orchadian* 2006; 15 (4): 156-158, with permission).

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#### Abstract

*Taeniophyllum norfolkianum*, from Norfolk Island, is described as new and illustrated.

#### Key Words

*Taeniophyllum norfolkianum*, new species, flora, Norfolk Island.

#### Introduction

The Norfolk Island species of *Taeniophyllum* was included as *T. muelleri* Lindley ex Benth. in the treatment of the island's flora (Green 1994). In 1995 a flowering specimen was sent to David Jones from Norfolk Island by Margaret Christian. This specimen was dissected, a drawing prepared and subsequently detailed comparisons were made with Australian species of *Taeniophyllum*, particularly *T. muelleri*. The species was found to be distinct and it is here described as new.

#### Taxonomy

*Taeniophyllum norfolkianum* D. L.Jones, B.Gray & M.A.Clem., **sp. nov.**; affinis *T. muelleri* Lindley ex Benth., sed radicibus relative condensis (1-2 mm diam.); floribus minoribus, pinguibus, olivinis; labello obscure trilobo, appendice apicali relative condensens, erecto; capsulis laevibus, majoribus (6-6.5 mm longis), differt.

**Type:** Norfolk Island, NE slopes of Mt Bates, ridge above Bird Rock, 24 Oct. 1967, *R.D.Hoogland 11.168* (holo CANB 175400).

Leafless epiphytic herb. Plants single. Roots appressed to the host, spreading, round in cross-section, 15-60 mm long, 1-2 mm wide, pale green. Stems c. 1 mm long. Racemes 8-25 mm long, erect, increasing in length as flowering progresses, 5-12-flowered; buds, open flowers and capsules sometimes present

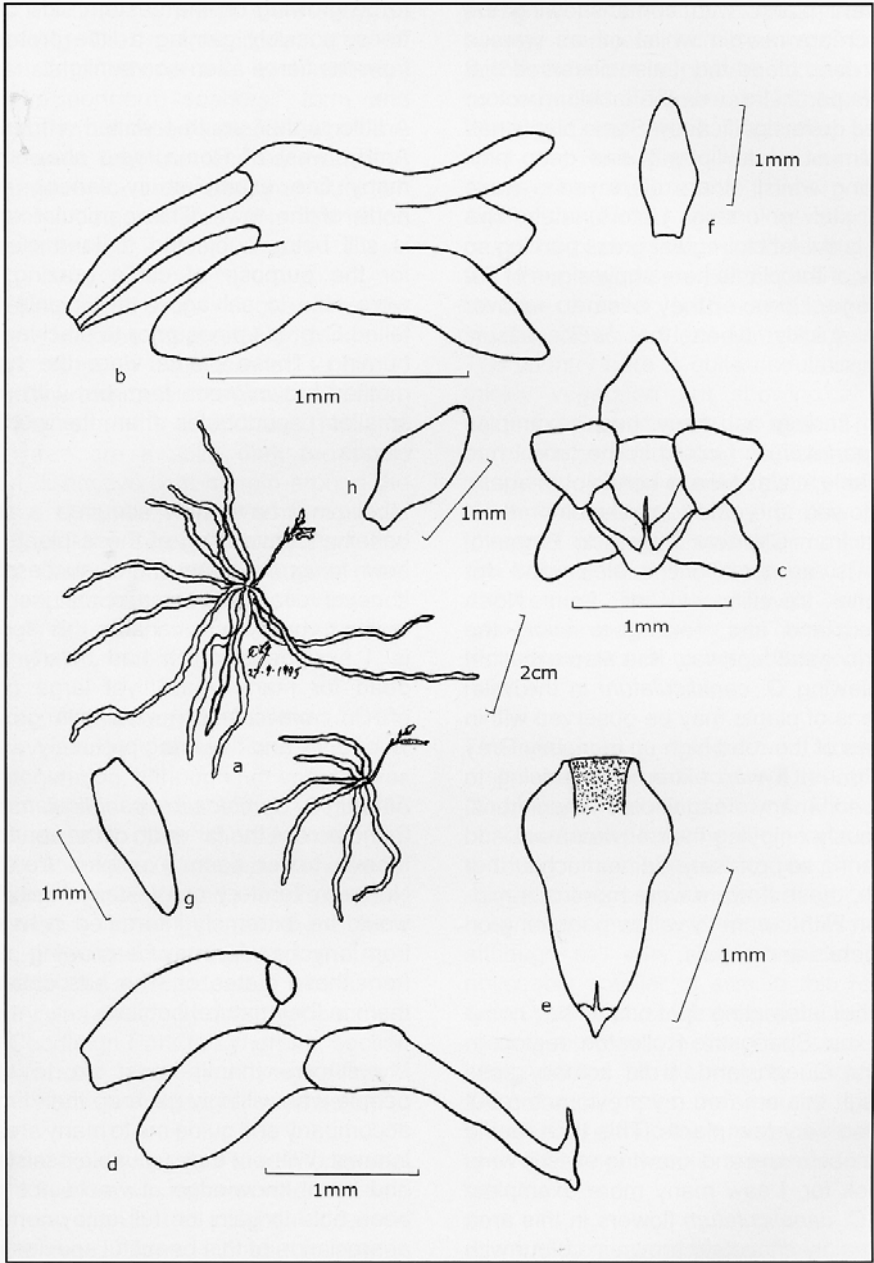


Fig.1: *Taeniophyllum norfolkianum*, Norfolk Island. a. plants (from Hoogland 11-168); b. flower from side; c. flower from front; d. labellum and column from side; e. labellum from above; f. dorsal sepal; g. lateral sepal; h. petal (b-g from M. Christian s.n.).

simultaneously; peduncle filiform, glabrous; rhachis slightly flexuose, with projecting bracts. *Flowers* opening singly, tubular at the base with spreading tips, c. 2.2 mm long, c. 1.5 mm wide, appearing plump, olive green. *Sepals* and *petals* fleshy, spreading in the distal half. *Dorsal sepal* porrect, narrowly ovate, c. 1.5 mm long, c. 0.6 mm wide. *Lateral sepals* porrect, narrowly ovate-lanceolate, c. 1.5 mm long, c. 0.6 mm wide. *Petals* narrowly ovate, c. 1.3 mm long, c. 0.7 mm wide. *Labellum* porrect; lamina cymbiform, c. 1.6 mm long, c. 1 mm wide, obscurely 3-lobed; lateral lobes rounded, c. 0.3 mm wide; midlobe tapered, with a substantial, erect, acuminate apical appendage c. 0.3 mm long; spur more or less parallel with the ovary, ellipsoid, c. 1.3 mm long. *Column* c. 1.3 mm long. *Stelidia* short, pointed. *Anther cap* shortly rostrate. *Pollinia* 4, in 2 unequal sized pairs, orange. *Stipes* vestigial. *Viscidium* ovate. *Stigma* sunken. *Capsules* narrowly ellipsoid, c. 6-6.5 mm long, smooth. Fig. 1.

### Distribution and Ecology

Endemic on Norfolk Island. This species is apparently restricted to Norfolk Island Pine (*Araucaria heterophylla*) as a host and occurs on trees growing on slopes and shady gullies in closed forest. It has been recorded growing on the lower trunks of large trees and has also been found on relatively young leafy branches brought down during storms. Altitude: 200-300 m alt. Flowering: August to October.

### Recognition

The main distinguishing features of this species are plants remaining single (not forming clonal colonies) with relatively thick roots (1-2 mm wide) that are round in cross section, short, thread-like racemes, small, tubular, relatively plump olive green flowers, an obscurely 3-lobed labellum with an erect, substantial apical appendage, and large (6-6.5 mm long) smooth capsules. The new species is probably most similar to *T. muelleri* from eastern Australia which usually forms colonies of plants connected by root tip proliferation and has narrower roots (0.6-1 mm wide),

yellowish-green, narrower flowers, unlobed labellum with a filiform retrorse apical appendage and smaller (3.5-5 mm long), verrucose capsules. In addition the labellum spur of *T. norfolkianum* is more or less continuous with the labellum lamina whereas the spur of *T. muelleri* is at a steep angle to the lamina.

### Notes

This tiny epiphyte is highly localised and rarely seen. Its ability to colonise the relatively young growths of Norfolk Island Pine is interesting.

### Conservation Status

Of restricted distribution but poorly known and in need of detailed surveys to determine its conservation status; conserved in Norfolk Island National Park. Of concern for its conservation is the severe dieback of its host, *Araucaria heterophylla*, which results in decline and death of the trees. Estimates suggest that more than half of the mature *Araucaria* trees on Norfolk Island are either dead or in decline (see Benson 1980, Green 1994).

### Etymology

The specific epithet alludes to Norfolk Island.

### Other Specimens

Norfolk Island: Bird Rock track, c. 1 km NNE of Mt Bates, 26 Oct. 1978, *I.R.Telford* 7125 (CBG 7810254); S of Mt Bates Track, rat bait station F.19, 15 Nov. 1996, *P.D.Zeising* 349 (CANB 616542).

### Acknowledgements

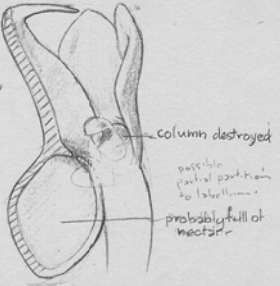
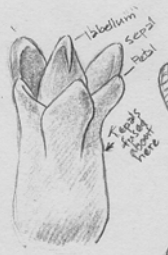
We thank Laurie Adams for the Latin diagnosis and Margaret Christian for supplying a flowering specimen and discussions about the species.

### Literature Cited

Benson, M.L. (1980). Dieback of Norfolk Island Pine in its natural environment. *Austral. Forestry* 43: 245-252.  
Green, P.S. (1994). Norfolk Island and Lord Howe Island. *Flora of Australia* Volume 49, Oceanic Islands 1. Australian Government Publishing Service, Canberra.



Taeniophyllum on underside of Norfolk pine branch: drawing by JB Irwin



drawn 14 Oct 89

Taeniophyllum - species in doubt - Urmie of Australia -  
 Now recognised as the only sp. on Norfolk Island  
 Now described as T. norfolkianum X2 & X20 AF  
 AS 5140/119

original

### *Taeniophyllum norfolkianum*

minute orchid, ribbon-root orchid [<http://www.environment.gov.au/biodiversity/threatened/species/norfolk-island-floravulnerable.html>].

**Description:** a small epiphytic orchid with tiny greenish yellow flowers.

**Conservation significance:** endemic to Norfolk Island Group.

**Distribution and abundance:** there were fewer than 500 mature plants in 2003 (Orchard 1994, TSSC 2003c). It has been recorded from Mt Bates (Orchard 1994). Mills (2010 pers.comm) has recorded the species south of Mount Pitt and in the vicinity of Red Road.

**Ecology:** leafless with photosynthetic roots.

**Habitat:** grows on the underside of branches of the Norfolk Island pine (*Araucaria heterophylla*).

**EPBC Listing:** Vulnerable.

**Threats:** the main threats come from impacts on forest health, the small population size, and catastrophic events.

**Impact on other species:** grows on Norfolk Island pines.

**Management action:** for all epiphytic orchids, monitor likely areas of the national park after storms, rescue any fallen specimens and attempt to cultivate them in the botanic garden (Sykes & Atkinson 1988).

### References

Orchard, A. (ed.) 1994. *Flora of Australia. Vol. 49. Oceanic Islands 1*. Australian Government Publishing Service, Canberra;

Sykes, W.R., & Atkinson, I.A.E. 1988. *Rare and Endangered Plants of Norfolk Island*. Unpublished report to the Australian National Parks and Wildlife Service, Norfolk Island;

Threatened Species Scientific Committee (TSSC). 2003c. Listing Advice – 15 Vulnerable Norfolk Island Flora Species.

*Taeniophyllum* = “headband leaf”. From the Latin taenia, –ae = headband, and phyllos = leaf. (*Taenia scolex* is a tapeworm that also must have been thought to look like a headband). I googled “headband” to try to see why Blume would have called it that, and discovered the young lady at right, wearing just such a classically-inspired headband as Blume must have been thinking about.



**Karl Ludwig von Blume** 1796–1862 was a German-Dutch botanist. He spent his professional life working in the Dutch East Indies and in the Netherlands, where he was Director of the state herbarium at Leiden. He carried out extensive studies of the flora of southern Asia, particularly in Java, then a colony of the Netherlands. From 1823 to 1826 Blume was Deputy Director of Agriculture at the botanic garden in Bogor (Buitenzorg) in Java. The botanical journal *Blumea* is named after him.

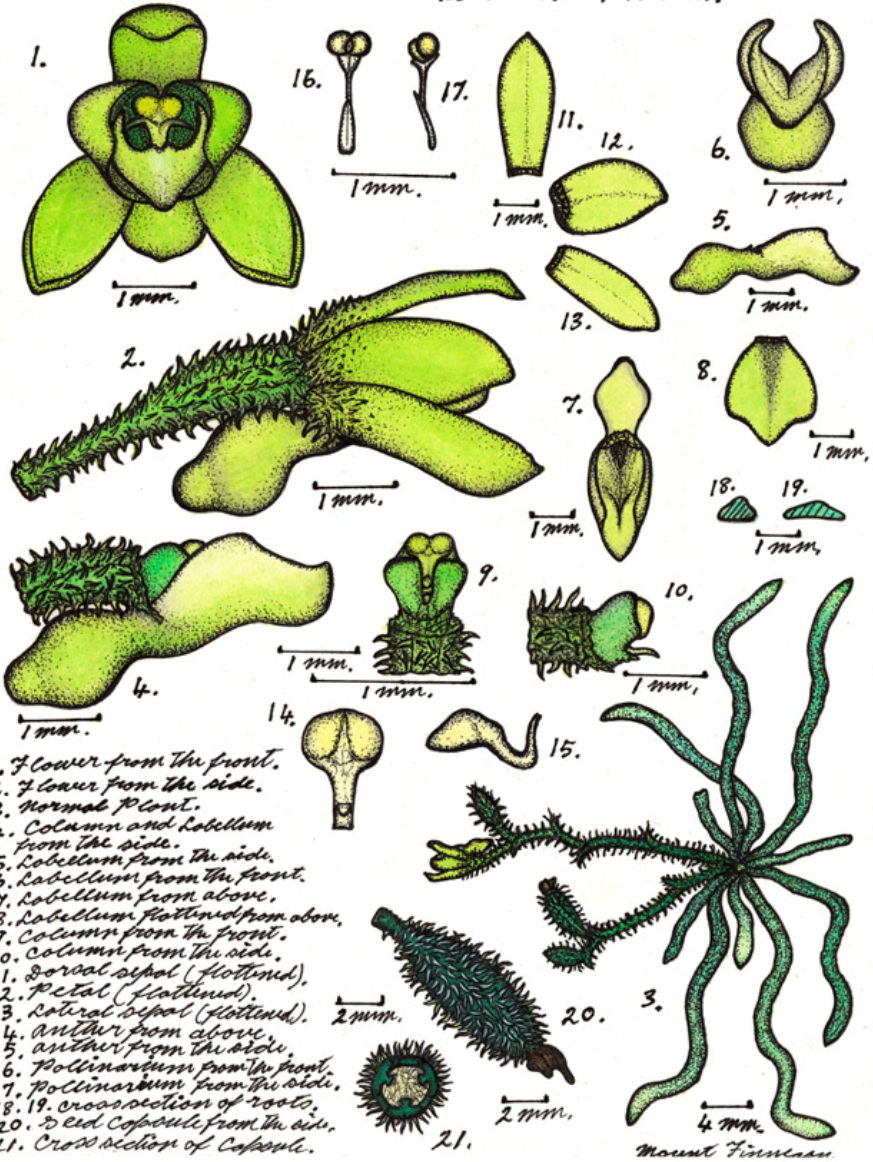


# Close relations: orchids like ours

This picture is one of a series by Lewis Roberts: Orchids of far north-eastern Queensland.  
 The file is licensed under the Creative Commons Attribution—Share Alike 3.0 Unported license.

## Taeniophyllum lobatum.

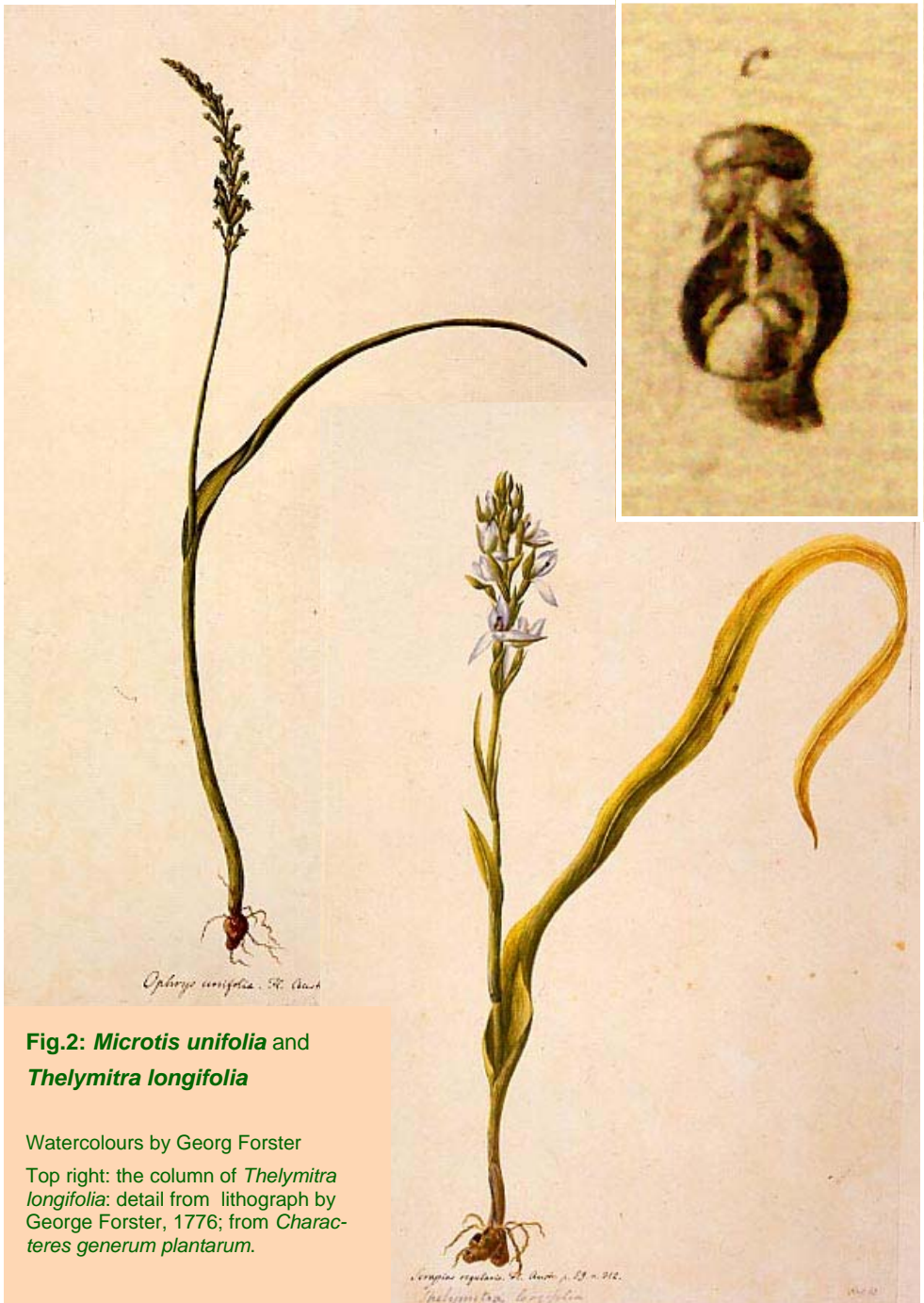
26-10-95. L.F. Roberts.







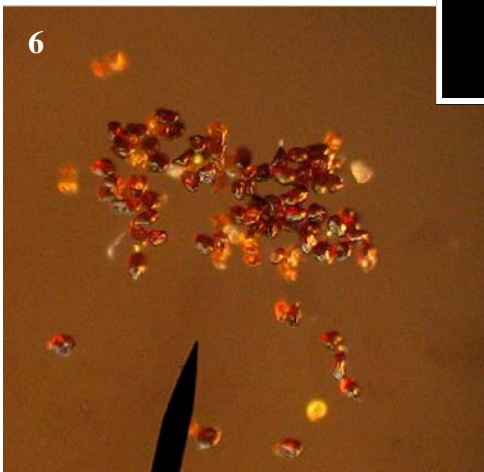
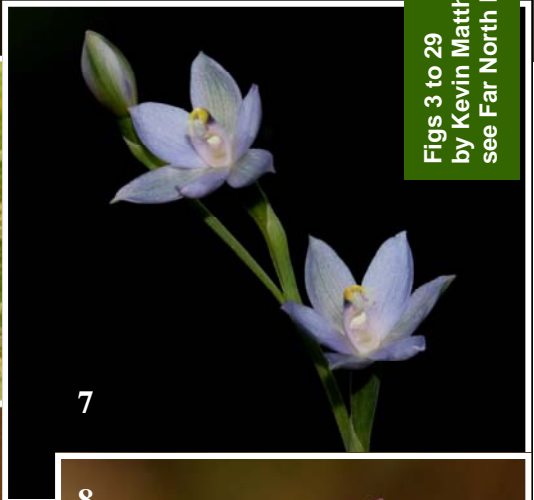




**Fig.2: *Microtis unifolia* and *Thelymitra longifolia***

Watercolours by Georg Forster

Top right: the column of *Thelymitra longifolia*: detail from lithograph by George Forster, 1776; from *Characteres generum plantarum*.



Figs 3 to 29  
by Kevin Matthews:  
see Far North Diary, p.19

# The type locality: Ian St George

Long Island: *Thelymitra longifolia* J.R. & G. Forst.  
and *Microtis unifolia* (Forst.f.) Reichb.f.

## The discovery in 1773

Johann Reinhold Forster, the naturalist on Cook's second (*Resolution*) voyage, wrote in his diary, at Queen Charlotte's Sound, on 9 November 1773,

*9<sup>br</sup> y<sup>e</sup> 13<sup>th</sup> In the Afternoon we brought our plants overside and drew and described the new ones. The next morning we went over to Long-Island & mounted the hill, where we found several fine plants. This & the day before were remarkably fine & warm. In the night the small diving Petrels retire to the hills, where they have some holes under ground like Rabbits, & there they all together make a great noise, like the croaking of Frogs at a Distance, & sometimes to the*

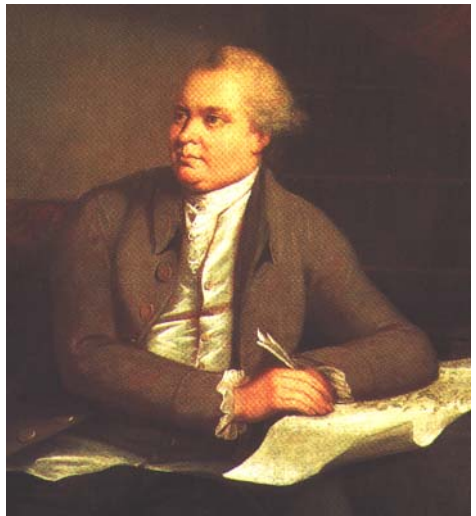
*cackling of Hens. We returned to dinner, having found a new Orch & an other new plant nearly related to the Class of Orches, but of a very singular structure & making absolutely a new genus. Several more new plants were likewise discovered, besides them [1]*

Michael Hoare identified the first as *Ophrys unifolia* Forst.f. (*Microtis unifolia*) [2], and the second as *Thelymitra longifolia* J.R. & G. Forst. [3].

Daniel Solander, of Cook's first (*Endeavour*) voyage, had a mixed collection, with *Thelymitra* plants from Tolaga Bay, Whitianga and northern Queensland, which he placed in the European genus *Serapius*, as *Serapius regularis*, in his manuscript [4]. He noted, "There are strong reasons for placing



JR Forster holding a bird for G Forster to draw.



Daniel Solander

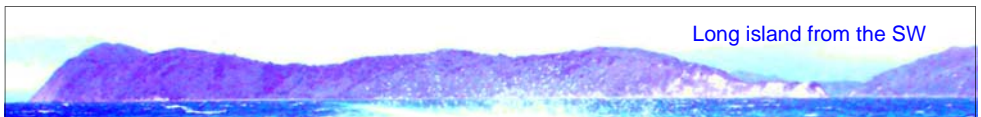


# 49. THELYMITRA.



*Thelymitra longifolia*, lithograph by George Forster, from *Characteres generum plantarum* 1776, t49, p98. Forster's key reads, "a Flos. b Nectarium. c idem auctum. d idem a latere visium. e, f stamina pistillo adnata. g capsula dissecta. h eadem longitudinaliter dissecta."

Long island from the SW





this plant in a separate genus – the regular, spreading, 6-tepalled corolla, etc. George Forster also used the name *Serapius regularis* in *Prodromus* [J117:18 has, for example, a photograph of *Serapius cordillera*].

George Forster made a lithograph (p.16) of *T. longifolia* for *Characteres*, and watercolour drawings of both plants, from which lithographs were made but never published. A set of 301 of his watercolour drawings was sold to Banks in 1776 for 400 guineas and now forms part of the Banksian collection housed at the British Museum (Natural History). The fully coloured illustrations of both these species are among them (Fig.2). It appears the other artist on the second voyage, William Hodges, made copies, and these are preserved in a small volume in the Alexander Turnbull Library [5].

With the discovery now of a number of taxa related to these two orchids – later-flowering *Microtis* with affinities to *M. unifolia*, and insect-pollinated *Thelymitra* with affinities to *T. longifolia* – it is important to know what the type specimens are.

Forster’s lithograph of *T. longifolia* shows a column with an uncleft anterior lobe well above the cilia, but otherwise no discriminatory features; his description says only “cucullate” = hooded. The pollinia have dislodged and fallen onto the stigma.

No detailed illustrations of *M. unifolia* appear to have survived.

## Descriptions

The original descriptions had no reason to emphasise the differences between these and what we now regard as related taxa, so they are brief and unhelpful. Some years ago the late Dan Hatch kindly translated Solander’s (unpublished) and Forster’s (published) descriptions from the Latin. Here are the Forsters’...

### *Thelymitra longifolia* [3]

**Name** – from the Greek – a woman’s mitra or head covering, since the female parts of the flower are hidden by the mitra.



To Long Island...  
Our route from Endeavour Inlet →  
Cook's & Forster's route from Ship Cove - - - →

**Floral bract** – lanceolate, acute, with a single flower.

**Petals** – 6, [3 sepals, 3 petals], ovate-lanceolate, spreading, concave, the 3 sepals larger.

**Column** – a single structure, 2-lobed, the upper lobe truncate, very short, the lower lobe erect, 3-fid with jagged edges. Midlobe cucullate. Lateral lobes with spreading tufts of thin hairs at the tips.

**Stamens** – 2, mounted on short filaments. **Antthers** ovate, hidden by the 2 lateral lobes of the column.

**Ovary** – inferior, stigma in the centre of the column, ovate, obtuse, short, with a nectar-filled hollow at the base.

**Seed** – very numerous, dust-like, adhering longitudinally to the wall of the ovary.

### *Serapius regularis* [2]

**Tubers** ovate. **Leaf** keeled, with a fibrous sheath, the erect scape bearing a spike. **Corolla** 6-petalled. Forster. NZ. Name taken from the Ms of the late Dr Solander.



### **Ophrys unifolia** [2]

*Tuber ovate, scape terete, sheathing. Leaf single, terete, hollow throughout, emerging from a split in the middle of the scape, the leaf-lamina reflexed.* Forster. NZ.

### **What is there now?**

Both of these species are therefore November-flowering Marlborough plants (Forster's "9br" is November, not September).

We took the water taxi out from Endeavour Inlet on 12 November 2010, 237 years after the Forsters had left from Ship Cove. We were greatly helped by Bill Cash from the DoC base in the Sounds. He has recorded orchids from many of the Sounds islands; he sent us an aerial map showing the tracks, and advised us to land at the shingle fan on the SW of the island, bush bash up to the summit ridge, and follow the ridge track.

That is exactly what we did. The island is of course no longer covered with the virgin forest of Cook's day, but has been burned, grazed, and is now regenerating with secondary forest. It is surrounded by a marine reserve, and is close to Motuara island, a bird reserve. We saw bellbirds galore, saddlebacks, bush robins, pigeons.

And we saw orchids: *Pterostylis banksii*, *P. montana sensu Moore*, *P. graminea*, *Diplodium* sp., *Acianthus sinclairii*, *Nematoceras macranthum*, *Chiloglottis cornuta*, *Caladenia* sp. and, of course, *Microtis unifolia* and *Thelymitra longifolia* (**Fig.2, p.13**).

*Thelymitra longifolia* s.s. has a wide strap-like floppy ridged leaf, large stem leaves, flowers that open beginning from the lowest, and a post-anther lobe that is entire, or at most very shallowly emarginate. On the mainland I observed a couple of *T. aff. longifolia* taxa with narrow, arched, concave-upwards-in-cross-section leaves, and all had more notched post-anther lobes.

*Microtis unifolia* s.s. is a robust plant compared with other taxa: 10mm thick at the base of the stem in large specimens. In other words it is exactly as we have been led to believe.

### **References**

1. Hoare M (ed.) 1982. *The Resolution journal of Johann Reinhold Forster 1772-1775*. Volume III. Hakluyt Society, London.
2. Forster JGA 1786. *Florulae Insularum Australium Prodrromus*. Gottingen, Joann. Christian. Deiterich, p.59.
3. Forster JR and JGA Forster 1776. *Characteres Generum Plantarum quas in Itinere ad Insulas Maris Australis Collegerunt, Descripserunt, Delinearunt*. White, Cadell and Emsly, London, p.98.
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# Far North Diary: Kevin Matthews

**1 October:** this is an account of a trip over the Tauroa Peninsula dunelands that Bill Campbell and I undertook on 1 July 2010. The main objective of the trip was to look for new sites for *Thelymitra matthewsii*.

There were lots of emergent *Thelymitra* about and some very good habitat for *T.matthewsii* but we failed to turn it up; however there are still many good sites to search. Some of the open pan sites are proving difficult to access with dense scrub and steep terrain to traverse.

We found a further 2 new isolated sites for the Tauroa *Nematoceras* “pygmy” (**Fig.3, p.14**); one is growing facing SW on a sand hillock with a few low growing Kanuka in more-or-less open dune country. Growing with it is presumably *T. aff. longifolia* stunted; the old flower stems are still evident. The other site is under open Kanuka 1km SW.

Also of interest was the fresh flowering *Coronastylis pumila* and some still with emerging peduncle. This was a bit of surprise being so late in the season; possibly influenced by the severe northland summer/autumn drought, then a late growth spurt triggered by the rain.

**1 October (2):** I found this *Thelymitra* (**Fig.4**) on the farm about 4 years ago but have never managed to get a photo of a fully open flower. The colony of 4 plants is growing on a steep north facing sandstone sidling under Kanuka. Three have intact peduncle with up to 6 flower buds so hopefully may get a chance of a better photo. It's very early flowering just like the *Thelymitra* from Mangawhai [J118] and it also has that delicious vanilla scent. Note that the post anther has no split although this one forms the outline of a “bishops’ hat” and the cilia are fluffier than *T. “mangawhai”*. Also hidden amongst the cilia are 2 finger-like post anther lobes which are a feature of some of our confusing *T.pauciflora* lot up here. I'll try to capture this on another

flower; it may require some surgery. The pollen is in no way friable and the flower would appear to need insect pollination. Even though the flower is open and in a breeze no pollen has made contact with the stigma.... This one has previously flowered as early as 22 September, no doubt the dry start to the season has influenced the flowering time.

**5 October:** photomicrography of *Uromyces thelymitrae* (rust mold) on *Thelymitra* (**Figs 5, 6, p.14**). The *Thelymitra* rust was on *T. “Ahipara”* leaf. I note it has been recorded from here in the north to Stewart Island and has also been found on *Prasophyllum* leaf. It doesn't seem to impact on the plants' ability to flower. *See table.*

## Collections of *Uromyces thelymitrae* McAlpine and its synonyms, New Zealand

(Auckland) [PDD 19059](#), [PDD 23852](#), [PDD 24777](#), [PDD 30077](#), [PDD 30358](#), [PDD 30359](#), [PDD 35417](#).

(Dunedin) [PDD 10083](#).

(Northland) [PDD 19500](#), [PDD 28548](#), [PDD 35642](#), [PDD 61222](#).

(Stewart Island) [PDD 13050](#).

(Taupo) [PDD 53757](#), [PDD 89830](#).

(Wanganui) [PDD 3022](#).

(Wellington) [PDD 319](#), [PDD 802](#), [PDD 3023](#), [PDD 10084](#), [PDD 10085](#), [PDD 11603](#), [PDD 19189](#), [PDD 56732](#).

(Waikato) [PDD 6129](#).

**23 October:** The colony of *Thelymitra* “ahipara” is small at Lake Ngatu and living precariously on the lake margin amongst loose cover of oioi, *Apodismia similis*, in wet sand. It was very pleasing finally to confirm it as *T. “ahipara”* after missing the flowers the past 2 seasons. The only other colony known is on Sand Hills Road which has had a trashing with cattle due to the drought conditions going into late autumn. It's

very dry there now with only 3 *T. "ahipara"* confirmed. Bill Campbell and I have covered a lot of Lake Ohia over the past few years and have yet to turn it up, perhaps next season? Had an interesting trip to the Sand Hills Road wetland yesterday and confused myself more with the *T. pauciflora* lot! Too much stuff for the Journal this time round but will put something together on these unique *Thelymitra* growing in this ancient Kauri wetland.

**26 October:** How's this for a floral display? 23 flowers open or opening on 5 stems! (*Thelymitra* "roughleaf": cover) Had a ripper of a day Thely-wise all round with *T. "ahipara"* open with 2 flowers; this is from a new site at Lake Ngatu (Fig.7, p.14). At Houhora there is an abundance of *T. "roughleaf"* in various stages of flowering. Accompanying it is *T. sanscilia* which had at least 8 open flowers. Lots of *T. longifolia* and *T. "darkie"* (which refused to open) and a few *T. "ngatu"* threatening to open fully.

This (*T. "roughleaf"* Fig.8, p.14) has to be one of the most stunning Thelys colour wise!

**9 November:** *T. "Hukatere"* (Fig.9, p.25): the p.a.l. split is variable and in most cases forms a wide short "V" and generally not that consistent deep split of *T. sanscilia*. As you will note in the photo a few cilia adorn the column arms but most are bare. This varies even on the same peduncle as does that degree of the "V" in the post anther lobe. The top peduncle bract always extends and forms a long "c" (Fig.10). This colony grows in sand substrate trackside with a mainly kanuka back drop and appears to be self perpetuating. It's free flowering in good sun with up to 5 flowers open at once. I guess one could say it is akin to *T. sanscilia* but certainly not in the same camp as the recent find of *T. sanscilia* at Houhora a few kilometre further north. I believe *T. "hukatere"* has some affinity with *T. brevifolia* as per the Retired Aussies website—bar the lack of cilia of course.

**9 November (2):** *Thelymitra* "orange-top" (Figs 11-13, p.26): this is the 3rd site that I've found this wetland *Thelymitra*. It also grows at the *T. "ahipara"* Sandhills Road site and also Lake Ngatu also associated with *T. "ahipara"*. The *T. "orange top"* grows in wet but drier habitat than *T. "ahipara"* and at all three sites it grows in association with the sundew *Drosera binata*. There appears to be no *T. "ahipara"* present at Waihopo (which lies north of Houhora). Personally I don't believe it has an affinity to *T. brevifolia* other than the colour of the post anther lobe. This I base on the photos on the Retired Aussies website. In fact *T. "hukatere"* shows a far closer affinity to *T. brevifolia*. The post anther of *T. "orange top"* is yellow prior to opening turning bright orange as the flower opens. The prominent anther tip is at right angles to the column and it protrudes between the column arms and post anther. The pollen is friable. Leaf length generally ¾ of peduncle, e.g. leaf 310mm: peduncle 400mm. Leaf with deep "V" and strongly keeled, held upright although arching. Leaf base and peduncle tinged red, 2 bracts either green or tinged red. Generally 4-5 flowers fully open on hot days.

**11 November:** *T. "waharara"* (Figs 14, 15): these opened freely in hot morning sun. They form a substantial colony in open dry conditions in sand substrate. Growing to 180mm, 1-2 lightly violet scented (when self opened) flowers measuring 14mm across on a red tinged peduncle, 2 bracts red, leaf base red, narrow "V" leaf with keel up to 160mm long. Flowers range from violet, mauve to pink. The column is squat with no or very little shoulder, deep split post anther margin is notably blunt. Blunt post anther split edge notably uneven. Post anther top flat, cilia sparse, anther at right angles to column with an up turned tip, pollen highly friable. It would be great to get a Chromosome count on this one.



**11 November (2):** This is a first for me to get this beast open and on camera (Figs 16, 17, p.27). I've labelled this *T. colensoi* but maybe inadvertently. I've others that are close to *T. colensoi* and that maybe the possible link/confusion with what I think could be *T. intermedia* which is scented, a bigger plant overall and freer flowering. I have what I'm calling *T. colensoi* here at home on the farm in low numbers and it also appears uncommon at Tauroa. The leaf although much reduced is not too dissimilar from *T. "roughleaf"* however it occasionally presents narrower. A general leaf description is 120mm x 7mm, stiff and arching to about 45 degrees, slightly keeled and slightly ribbed on occasion. Base of plant is always maroon, peduncle about 250mm with 2 bracts and up to 5 small flowers. The 14mm flowers are unscented, pollen very friable and presents with sparse upright cilia hugging the post anther lobe.

**15 November:** "My thoughts were that this one was close to *T. intermedia* as per Field Guide?" (Figs 18, 19).

**28 November:** "This *T. x dentata* (Fig.20, p.28) is a new one for me up here. Robust plant, flower 32mm across lateral sepals. Scented and lacking stripes, unable to say if it's fertile and needs further investigation."

**29 November:** "I had a perfect *Thelymitra* day up in the Ahipara Gumfields on 24 November. I accompanied Neil Fitzgerald from Landcare Research who was keen to get photos of some of the rarities this unique plateau has to offer. This native *Hylaeus* bee species (Fig.21) was intent on getting its filling of pollen and thus provided an excellent photographic subject. John Early from the

Auckland Museum kindly identified the bee as most possibly *H. relegatus* or *H. agilis*. *Hylaeus* bees transport pollen in their crop back to their nest to provision cells, and not by special adaptations on the back legs like honey bees and the native *Leioproctus* species—these are hairy bees and they scrape pollen from their pollen-trapping body hair to concentrate it on the special organ on the back legs. While photographing the bee flew between separate *Thelymitra pulchella* plants also bearing flower. It would seem highly likely that cross pollination can occur directly by *Hylaeus* mouth parts. Note the Thrips stuck fast in the stigma."

(Here is a close-up of the fertile bits of *Cryptostylis subulata*. This is from a new site for this species and now the most southern on the Aupouri Peninsula known and south of the Lake Ohia population) Fig.22.

The attached and following photos (Figs 23-27, pp. 28, 39) are to give you some idea of the variation of *Thelymitra pulchella* and their like that occur at the same site more-or-less as the *T. dentata* var. scented. Those without stripes are generally strongly scented while those with stripes have no scent or on the odd occasion a mild fragrance. These flowers all exceed 30mm across the lateral sepal in their self opened set.

And just to compare with the Karikari *T. "sansfimbria"*, it is quite typical for these (Fig.28, p.39) to have this "v" to the column arm end.

This one (Fig. 29, p.39) I'm still thinking on, a very robust plant. Two plants seen side by side, one plant finished flowering, the other plant as per photo presenting flowers with split post anther lobe; other plants in locality smaller in stature presenting with variable split p.a. Needs more research.

# Notes etc

**P**at Enright emailed, 4 October, “There are some nice orchids up the Mangatoetoe Stream. A lot of *N. macranthum* in early flower and a variety of pterostylis with *P. banksii*, *P. foliata*, and *P. aff. australis* in flower. I have another one growing on at home and it should be in flower in a day or so. My biggest problem is the chickens as they love to empty out any flower pots they can access. The thelymitras are very common with most being *T. longifolia* agg. I would think—although the one closest to flowering has a narrow upright leaf.”

... and on 8 November: “I was along the coast between the Mukamuka Stream and Windy Point on Sunday. There is the remnant of what must have been an old shore line which now exists as a rocky bank about 2 m high running parallel to the coast. *Thelymitra longifolia* is relatively common along the lip and in crevices on this bank where stock cannot get at it. One small (2 inches) plant was in bud with its tuber exposed and one small root in loess that had blown into the crevice. What with the wind, salt spray and the stock it has done well to survive. There are some very interesting looking areas including a high waterfall along this stretch of coast so I will go back and see what orchids might be growing there.”

**P**eter de Lange emailed, 4 October, “A pleasant amble yesterday with my children along the gumlands and *Kunzea ericoides* var. *linearis* ‘forest’ at one of my favourite places on the northern side of the Waitemata Harbour was made all the more interesting by finding a new population of *Caladenia (Stegostyla) atradenia*. One plant in full flower on the track served to teach my children how to recognise it, and within minutes they (not I) found 15 more! Biggest surprise was to see one *Thelymitra aemula* in

flower (well one flower open but more to come) - earliest I have ever seen this species out. Otherwise the usual carpets of *Pterostylis graminea* s.l. Theo (my eldest) was delighted with the *Caladenia* which was ‘almost’ he said, ‘as interesting as triggering the flower’ (irritable labella) ‘of the tutukiwi’ (*P. graminea* s.l. swards), ‘or playing with the’ (myriad) ‘sundews’ (*Drosera auriculata* plants) ‘covering the track sides’.”

**M**ore than half of all flowering plant names to be scrapped: is the age of splitting nearing its end? are we entering a lumping stage of the cycle at last? *Nature News* highlights: 21 September 2010 reported that botanists had long believed the accepted number of flowering plant species to be an overestimate, but few are likely to have guessed the scale of the miscalculation. New research suggests that at least 600,000 flowering plant names - more than half - are synonyms, or duplicate names.

Alan Paton of the Royal Botanic Gardens, Kew is part of the team working to tackle synonymy, says the problem occurs across the plant kingdom. “There are generally about two and a half synonymous names for every accepted name,” he says.

Information about plant names is spread around several databases in different parts of the world, and the data have never been gathered in one place before.

Now, after nearly three years of working to weed out synonymy in some of the largest and most comprehensive of these databases, researchers at Missouri Botanical Garden in St Louis and Kew have produced ‘The Plant List’, a definitive working list of all plant species.

The researchers have downgraded the likely number of flowering plant species from previous estimates of around one

million to about 400,000, suggesting that at least 600,000 accepted species names are invalid.

The team hopes the final list will be published and made widely available to researchers by the end of 2010. “We want to provide something useful quickly because at the moment there is nothing which is globally comprehensive and provides synonyms,” says Paton. “It won’t be perfect, but it will be the best thing there is in one place.”

**M**aurice Sinclair wrote, ““I see in Journal #117 that there is the implication that Colin Burrows had included both *Pterostylis venosa* and *P. humilis* on his Arthurs Pass species list. *P. humilis* is not on his list and the only species of *Pterostylis* shown there as extending to the subalpine zone is *P. venosa*.

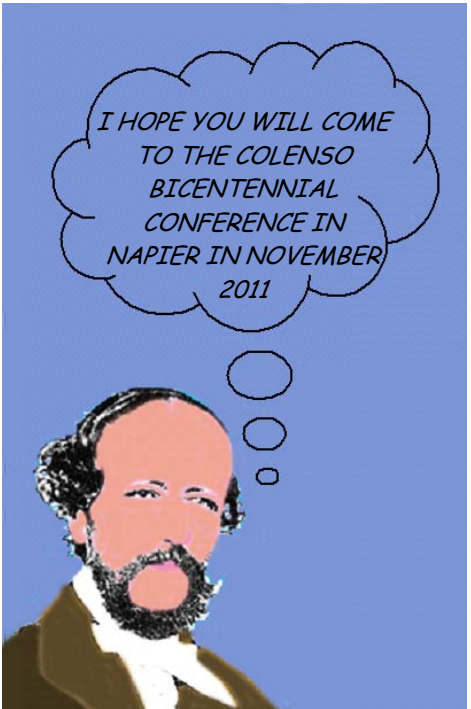
“Unfortunately, I put those two species together and it happened because having seen just one of those species in March at Temple Basin, and not having previously experienced either of them, I wondered how I could distinguish between the two without the flower present. Obviously I had to keep both species in mind until one could be eliminated. That is how the two species slipped into the correspondence and I apologise for a mistake which impugns the scholarship of Colin Burrows, a superb botanist.”

**G**raeme Jane emailed (16 October), “Last weekend we were very surprised to find *Nematoceras iridescens* in full flower on the Whirinaki track - the expected taxon was *N. “Kaimai”* or *N. “whiskers”*. There were two patches in wet areas alongside the track between Mangamate Stream and the Te Waiti Nui a Toi canyon. Previously I had been sceptical of Chris Ecroyd’s record from Rotoma. Need to eat humble pie on that one! Unfortunately we had left our cameras at home.

“On another tack the recent threatened plants book states that *Pterostylis irwinii* is known from only two localities (Erua and Hawkes Lookout) in both localities from few plants. This ignores records of several localities noted in the Journal as well as NZ

Botanical Society Newsletter.” *We need to send voucher specimens to herbaria I think—Ed.*

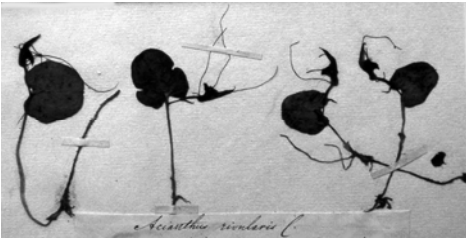
**R**ebecca Bowater emailed (29 October), “I found this (Fig.32, p.41) under scrub on Adele Is. today (Abel Tasman park). It was only 7cms high and so pale. Have you any idea which *Pterostylis* it is please?” *Well, no: but that pale upright stance has been observed before: see J112: 23. I think it’s a partial reversion to a saprophytic form of P. aff. montana—Ed.*



**K**athy Warburton emailed (1 November), “I just love when spring comes around, because it means I can go spider hunting. No matter where I go locally, there is usually a spider orchid colony or two to look for. Yesterday was no exception, and I set off up Morrisons Creek to see what I could find on the sides of the water dept road. Delving into

the grasses on the uphill (shady ) side, I quickly found a large colony of *Nematoceras macranthum*, but alongside of this, and out of the long grass on a thick mossy waterlogged base was another spider orchid which I do not know. The leaf was ground-hugging and orbicular in shape, it seemed to be sessile (Fig.30, 31, p.40) I am intrigued, what can it be? Is it possible that it could be *N. orbiculatum*?- now I have just looked up the latest locality list and I see that this orchid is listed for coastal Otago.” *This has been identified as N. iridescens, but it is a little different from Northern forms, and is a very disjunct population if indeed that is what it is. This is the plant John Buchanan painted as "Corysanthes rivularis" from Leith Valley (in his diary in the Early Settlers Museum)—Ed.*

**I**t's time we put the name *Nematoceras panduratum* to decent rest. Nobody (even Cheeseman) has suggested differences other than the pandurate leaves, and such forms of *N. rivulare* have been reported often enough—in fact there is a specimen on Alan Cunningham's original type sheet at Kew... (below).



**T**he 4th International Congress on Orchid Conservation (“Orchids in a changing world”) is to be held 29 May to 6 June 2011 in the beautiful setting of the Hluboká castle park in the Czech Republic: see <http://www.iocc4.cz/>.

**G**ordon Sylvester emailed (22 November), “September-October 2010 will remain in my memory. Firstly as a month of weather disasters—lightning, rain, storms, etc.

Secondly as a month of contrasts. We were visited by 4 lightning events, one of which destroyed yet another computer and modem. The rainfall total exceeded 530mm for the month and it rained for twenty-six days. We went up to Punakaiki to check the *Nematoceras* colony on Bullock Creek Rd. I had maintained there was more than one species present. This year, we started to go up early in July. Yes all of the *N. longipetalum* was finished, and *N. macranthum* was in full flower—and extending the length of the roadside site some 150m. This makes three confirmed species.

Late September Neil Bradley arrived with a flowering cane of *Earina mucronata*; he wanted me to confirm its identity. He said he had collected it from Larrikin's Road. As this was an area I had only visited once in late summer last year, we decided it warranted a visit in closer detail.

We called into Londonderry Rock first: all of the *E. mucronata* were in tight bud. And someone had vandalised the small *Ichthyostomum* colony having removed over two thirds of it. Backtracking we went over to Larrikins Road. Lots of *Microtis unifolia* was present in the grass. None in flower as yet. All of the *Earina mucronata* noted was in the same condition. Found a new site where both *Winika cunninghamii* and the earinas were easily accessible but nothing was open.

Murray and Gwenda Lister called in on a little R & R and the decision was quickly made to visit Lake Mahinapuna and environs. Accordingly early on Saturday morning we arrived at Mananui. Surprise surprise, *E. mucronata* was in tight bud. A *Drymoanthus adversus* colony was noted lying on the ground having recently been brought down by high winds. The *Nematoceras* aff. *trilobum* colony was noted to extend over some 400m by about 6m centred on the track. All of it had finished flowering with only a few seed pods in evidence and a few leaf bracts and ovary column traces still evident. Also present was *W. cunninghamii* and *E. autumnalis*. Further along the track *Pterostylis* became evident, with a mixture of leaf shapes showing up,



9

Figs 3 to 29  
by Kevin Matthews:  
see Far North Diary, p.19



Figs 3 to 29  
by Kevin Matthews:  
see Far North Diary, p.19



Figs 3 to 29  
by Kevin Matthews:  
see Far North Diary, p.19



16



17



18



19

20



21



22



23



24



26





including one plant with orange coloured ribs, indicative of *P. cardiostigma*, a first for the area, being some 20kms further south from the Shantytown site noted last year. The other leaf shapes indicated that *P. irsoniana*, *Pt. "giganteum"* [J115: pp.21, 29] .and one other species were making their presence known.

On to Swimmers beach track and the same results. *W. cunninghamii*, *E. autumnalis*, *M. unifolia*, at the entrance to the track. Further on *Pt. "giganteum"* was at its previously recorded site and advancing in growth spectacularly already 200-250mm high.

After a whitebait patty luncheon at Hokitika we returned to Kumara, with the intention of going to Larrikins Road. More eyes this time: we noted *M. unifolia*, further on, on the "new" tailings field track. Three species of *Thelymitra* were observed, based on leaf shapes including the distinctive leaf of *T. longifolia*. The other leaves noted were the trefoil short leaf and an almost cylindrical leaf with a prominent groove on one face of the leaf. Out on the tailing heaps, the usual clumps of *Earina* and *Winika* were highly visible just showing above the large rocks. Further on we spotted some *E. mucronata* on the west side of the tailings face. Strangely none were present on the east side of the tailings heap. The plants were investigated and were found to be in varying stages of flower—most of them were finished.

The contrasts between the sites in a twentyfive kilometre radius was striking with the *Earina mucronata* ranging from tightly budded in the north to almost finished flowering further south.

**R**esearchers from Jordan, writing in the 1 October 2010 issue of the [Journal of Complementary and Integrative Medicine](#) write that *Orchis anatolica* root ingestion improves sexual motivation and performance in male rats. *Orchis anatolica* Boiss. is a species that grows in the Mediterranean region and has been for centuries assumed to have an aphrodisiac property; it is the ingredient of the drink *salep*. *O. anatolica* root ingestion significantly reduced the mount, intromission,

and ejaculation latencies in male rats. Also, a significant increase in the copulatory efficacy was reported. Weights of reproductive organs and testosterone serum levels were significantly increased in *O. anatolica* treated rats compared to controls. The researchers conclude that continuous ingestion of *O. anatolica* root over a period of thirty days can improve the sexual motivation and performance in adult male rats. This effect can be ascribed to increased testosterone level.  
*Hmmm—Ed.*

**G**raeme Jane emailed, "We visited the Paeroa Reservoir reserve on 31 October 2010 and found this one patch of deeply coloured *Corybas (Nematoceras)* "Kaimai" (Fig.33, p.41). We usually find only weakly coloured plants. After some debate we took it to Bruce and he commented that he has been rather puzzled by *C. "Kaimai"* for some time and it seemed to merge into *C. rivularis* especially in the north. We revisited the area two weeks later and found a "normal" pale flowered colony 100 m further upstream. At the recent Te Kauri camp on the Kauri Track we spotted this odd ball. Its a spotted *Thelymitra pauciflora*." (Fig.34, 35)

**G**ordon Sylvester (1 December): "Journal 118 has an article by Gael Donaghy on pages 13-14. Woods Creek is at Dugganville ED 48.11 not Hokitika 50.01, which is some 25km away. The plant looks suspiciously like *Pt. 'peninsula'* in both the text description as well as the photos.

"I would like to acknowledge the presentation of the certificate that David McConachie made to me. It was unexpected and a pleasure to receive it. I will place it with my DOC Certificate received a couple of years ago now."

**M**enzel A and others (2006. European phenological response to climate change matches the warming pattern. *Global Change Biology* 12 (10): 1969–1976) conclude the average advance of spring has been 2.5 days per decade in Europe. The pattern of change matches measured national warming across 19 European countries.

# Websites...

## - useful sites for researching New Zealand orchids

NZ native orchids: <http://www.nativeorchids.co.nz/>

Flora of New Zealand Vol II: <http://floraseries.landcareresearch.co.nz/pages/search.aspx>

Flora Novae-Zelandiae (Hooker): <http://pds.lib.harvard.edu/pds/view/12416873?n=290&imagesize=1200&jp2Res=.25>

Manual NZ Flora (Cheeseman): <http://www.archive.org/texts/flipbook/flippy.php?id=manualofnewzeala00chee>

NZ Plant Conservation Network: <http://www.nzpcn.org.nz/default.asp>

[The International Plant Names Index \(IPNI\)](#) "Database of the names and associated basic bibliographical details of all seed plants. IPNI is the product of a collaboration between [The Royal Botanic Gardens, Kew](#), The [Harvard University Herbaria](#), and the [Australian National Herbarium](#).

ANOS: <http://www.anos.org.au/links/>

<http://www.anos.org.au/links/australian-orchid-image-websites/>

<http://www.anos.org.au/links/orchid-societies---australia/>

<http://www.anos.org.au/links/orchid-societies---world/>

Wikimedia Commons <http://commons.wikimedia.org/wiki/Category:Orchidaceae> – for a worldwide repository of high resolution images.

National Library Wellington: <http://www.natlib.govt.nz/catalogues>

PapersPast: <http://paperspast.natlib.govt.nz/cgi-bin/paperspast>

Latin dictionary: <http://archives.nd.edu/latgramm.htm>

Transactions NZ Institute: <http://rsnz.natlib.govt.nz/>

Te Papa collections: <http://collections.tepapa.govt.nz/objectdetails.aspx?>

Swiss Orchid Foundation: <http://orchid.unibas.ch/site.home.php>

Tropicos: Missouri Botanical Garden: <http://www.tropicos.org/Home.aspx>

Wildwood Gallery: <http://www.wildwoodgallery.co.nz/Iwitahi.orchids.htm>

Orkology: <http://www.nor.com.au/users/kreation/Imajbank.htm>

<http://www.retiredaussies.com/> Good Australian orchid photographs

Orchid Research Newsletter <http://www.kew.org/herbarium/orchid/>

Terrestrial Orchid Forum <http://forum.terrorchid.org/>

Scottish Rock Garden Club Forum (Pleione and Orchidaceae) <http://www.srgc.org.uk/smf/index.php?board=27.0> (Australian orchids)

Thanks to Murray Dawson, Pat Enright, Eric Scanlen, David McConachie: if you have a useful website, please tell us about it....

# Book review

## Illustrated guide to New Zealand sun orchids, *Thelymitra* (Orchidaceae)

By Jeremy R. Rolfe and Peter J. de Lange. Published by Jeremy Rolfe, Lower Hutt, New Zealand. Paperback, 64 pages, 145 × 210 mm (A5), 2010. ISBN 978-0-473-16881-0. NZ\$25.00. Available from Jeremy Rolfe (co-author and publisher) and the New Zealand Plant Conservation Network ([www.nzpcn.org.nz](http://www.nzpcn.org.nz)).

Reviewed by Murray Dawson

Sun orchids belong to the genus *Thelymitra* and are so-named because they typically open their flowers on hot sunny days. Their showy flowers range in colour from white to pink to dark blue and may also be spotted or striped. *Thelymitra* are found throughout New Zealand commonly in open sites from coastal to subalpine environments.

Jeremy Rolfe and Peter de Lange are two authors from the Department of Conservation who have again teamed up to write a book on this genus. Previous collaborations include *Wild Orchids of the Lower North Island* (reviewed in the *New Zealand Garden Journal*, 2008, Vol. 11(1): 32–33), which provided the impetus for this current book, and the recent *Threatened Plants of New Zealand* (reviewed in the *New Zealand Garden Journal*, 2010, Vol. 13(1): 31–32). For an *Illustrated guide to New Zealand sun orchids*, Jeremy Rolfe provided the photographs, layout and introductory text and Peter de Lange wrote the descriptions.

This new work is a welcome addition to the growing body of guidebooks on New Zealand native orchids (e.g., de Lange et al., 2007; Scanlen and St George, 2010; St George, 1999; St George et al., 2006). Unlike previous titles, this book concentrates on the one genus, *Thelymitra*, and delivers a useful and easy to use guide for their identification.

The Introduction (p. 1) explains that *Thelymitra* is a taxonomically complex genus (like many other native orchids) and comprises some 100 species (mainly in Australasia), with eight species endemic to New Zealand.

As discussed in the taxonomy section (pp. 2–5), the authors accept 12 endemic and indigenous species (*Thelymitra aemula*, *T. carnea*, *T. colensoi*, *T. cyanea*, *T. formosa*, *T. hatchii*, *T. malvina*, *T. matthewsii*, *T. nervosa*, *T. pulchella*, *T. sanscilia* and *T. tholiformis*), two species aggregates (*T. longifolia* agg. and *T. pauciflora* agg.), *T. aff. ixioides* and the hybrid *T. ×dentata*. Additional taxa (*T. aff. longifolia* “Whakapapa”, *T. aff. longifolia* “rough leaf”, *T. aff. pauciflora* “Ahipara”, *T. aff. pauciflora* “Darkie” and *T. cf. brevifolia*) with no formal taxonomic status are excluded from the identification key but illustrated in the notes and photosets. The relatively conservative approach of the authors is fully justifiable in lieu of urgently needed taxonomic research to resolve the status of the numerous informal (tag-named) orchid taxa in New Zealand.

Following pages discuss similar orchid genera (p. 5), flower structure (pp. 6–7) and stem bracts (p. 7). These pages provide a concise but informative preamble. For example, the structure of *Thelymitra* flowers is an important diagnostic character and is nicely explained and illustrated.

The key to New Zealand *Thelymitra* (pp. 8–18) is a pictorially-based adaptation of the dichotomous identification key originally published in the *Flora of New Zealand*, Vol. II (Moore, 1970). For the non-expert trying to identify a sun orchid, it is a great help to see thumbnails of what the characters actually look like, and these complement the specialised orchid terminology.

The book then divides each species into two sections. The first (pp. 19–43) contains photosets with short text and captions and the

second has descriptions (pp. 44–55). For keeping all of the images and all of the descriptions together, I think that it was a valid decision to organise the content this way, regardless of the need to flick between the two sections. However, this separation may have resulted in a few inadvertent contradictions between the captions and the descriptions. For example, the *Thelymitra colensoi* caption (p. 21) states “Flowers 1–4 per stem” whereas the description (p. 45) incorrectly states “Flowers 1–7”. Similarly, the *T. ‘rough leaf’* caption (p. 29) states “up to 5 flowers...” but the description (p. 55) more correctly states “Flowers 1–8”.

The photo section contains excellent images that are a credit to Jeremy Rolfe, the main photographer; images contributed by Kevin Matthews are equally impressive. There are about 130 colour photos that provide a tremendously useful guide for identifying *Thelymitra*. Remarkably, Jeremy Rolfe’s images have been taken especially for this book; none are shared with *Wild orchids of the lower North Island* (de Lange et al., 2007).

Another strength of this book is the comprehensive descriptions prepared by Peter de Lange. Guidebooks by other authors all too often summarise (to the point of trivialisation) descriptions already published in floras. Not so for an *Illustrated guide to New Zealand sun orchids*. A close comparison of the descriptions in this book reveals that there are a lot of new character measurements and observations not found in the *Flora of New Zealand*, Vol. II (Moore, 1970) or in the other guidebooks that include native *Thelymitra*. This is painstaking and detailed work and provides a valuable contribution to *Thelymitra* taxonomy. Very similar descriptions appear on the New Zealand Plant Conservation Network website ([www.nzpcn.org.nz](http://www.nzpcn.org.nz)). These were also prepared by Peter de Lange (pers. comm.) but updated for the book so the drafts have diverged with a few differences in the quantitative characters.

The book concludes with a glossary (p. 56) and references (p. 57); both are concise rather than extensive to appeal to a wide readership.

Although I am biased, the authors could perhaps have also referenced my paper (Dawson et al., 2007) which updates some of Molloy and Dawson’s (1998) discussion of hybridism and amphidiploidy in *Thelymitra*. Amphidiploidy (or allopolyploidy as it is also known) is chromosome doubling of often sterile hybrids to produce fertile progeny. This has been an important process in the evolution of *Thelymitra* and is an interesting story barely mentioned in the book. The authors have perhaps wisely refrained from digressions such as this and have kept the guidebook brief and focussed on identification. I also noticed that the authors have not used common names for *Thelymitra* (unlike their earlier book; de Lange et al., 2007).

I recommend an *Illustrated guide to New Zealand sun orchids*; it is the best reference available for identifying this fascinating group of plants.

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- St George, I.; Irwin, B.; Hatch, D. (2006). *Field guide to the New Zealand orchids*. 4th ed. Wellington, New Zealand Native Orchid Group. 136 p.



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# The New Zealand orchids

## The editor's annual list 2010

*With thanks to Murray Dawson for constructive comments and for correcting the formatting.*

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

**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).

### **Adelopetalum Fitzg. J. Bot. 29: 152 (1891). Bulbophyllum alliance**

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

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

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

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

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

### **Anzybas D.L.Jones & M.A.Clem. Orchadian 13(10): 442 (2002). Corybas alliance**

**Anzybas carsei** (Cheeseman) D.L.Jones & M.A.Clem. Orchadian 13(10): 443 (2002).

*Corysanthes carsei* Cheeseman. Trans. & Proc. New Zealand Inst. 44: 162 (1912).

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

*Corybas unguiculatus* as meant by L.B.Moore. Fl. New Zealand Vol. 2: 116 (1970) is not *Corysanthes unguiculatus* of R.Br. (1810).

**Anzybas rotundifolius** (Hook.f.) D.L.Jones & M.A.Clem. Orchadian 13(10): 443 (2002).

*Nematoceras rotundifolia* Hook.f. Fl. Nov.-Zel. 1: 251 (1853).

*Corysanthes rotundifolia* (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).

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

*Corysanthes matthewsii* Cheeseman. Trans. & Proc. New Zealand Inst. 31: 351 (1899).

*Corybas matthewsii* (Cheeseman) Schltr. Repert. Spec. Nov. Regni Veg. 19: 23 (1923).

*Corybas unguiculatus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 75: 367 (1945), is not *Corysanthes unguiculatus* of R.Br. (1810).

### **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).

**Caladenia R.Br. Prodr. Fl. Nov. Holland.: 323 (1810).** Hopper & Brown (2004) have argued convincingly for the reinstatement of the genus *Caladenia* in its broad sense.

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

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

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

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

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

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

*Caladenia catenata* 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 bartlettii** (Hatch) D.L.Jones, Molloy & M.A.Clem. *Orchadian* 12(5): 227 (1997).  
*Caladenia carnea* 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).  
*Caladenia carnea* var. *minor* (Hook.f.) Hatch. *Trans. & Proc. Roy. Soc. New Zealand* 77: 401 (1949).  
*Caladenia* “green column” tagname.  
*Arethusa catenata* and *Caladenia alba* are names used for Australian plants once confused with NZ taxa.
- Caladenia aff. chlorostyla** is a similar taxon to *Caladenia chlorostyla*, with red hairs on the backs of the tepals and later flowering.  
*Caladenia minor* Hook.f. *Fl. Nov.-Zel.* 1: 247, t.56b (1853) may be the correct name for this taxon.  
*Caladenia carnea* var. *pygmaea* (R.S.Rogers) Rupp. *Proc. Linn. Soc. New South Wales* 69: 74 (1944).  
*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 the taxon known as *C. aff. chlorostyla*.
- Caladenia nothofageti** D.L.Jones, Molloy & M.A.Clem. *Orchadian* 12(5): 226, f.1 (1997).  
*Petalochilus nothofageti* (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. *Orchadian* 13(9): 410 (2001).
- 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).  
*Caladenia* “big pink” tagname. Some flowers have a clear two rows of calli on the labellum, others have extra calli scattered to either side of the two rows.
- Caladenia aff. fuscata**: a small pink flowered entity which appears similar to the variable Australian species *Caladenia fuscata*. See Scanlen. *NZNOG Journal* 72: 22 [1999]). It appears to be identical with HB Matthews’s *Caladenia* “nitida-rosea” (see Scanlen E. Matthews & son on orchids. *NZNOG Historical Series* 2006; 14: 12).
- Caladenia aff. pusilla**: 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 (W.M.Curtis. *Stud. Fl. Tasman.*, 4A: 133 [1980]).
- Caladenia R.Br. subgenus Stegostyla (D.L.Jones & M.A.Clem.) Hopper & A.P.Br. Austral. Syst. Bot. 17: 171–240 (2004).**
- Caladenia atradenia** D.L.Jones, Molloy & M.A.Clem. *Orchadian* 12(5): 221 (1997).  
*Caladenia iridescens* as meant by Hatch. *NZNOG Newsletter* 16: 1 (1985), is not that of R.S.Rogers (1920).  
*Caladenia carnea* var. *minor forma calliniger* Hatch. *Trans. Roy. Soc. New Zealand, Bot.* 2: 187 (1963).  
*Stegostyla atradenia* (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. *Orchadian* 13(9): 414 (2001).  
“*Caladenia calliniger*” and *Caladenia aff. iridescens* tagnames.
- 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 *C. lyallii* agg., including a small form from Iwitahi and Nelson Lakes.
- Caladenia aff. alpina**: plants structurally closer to *C. alpina* than to *C. lyallii* are in NZ (see St George. *NZNOG Journal* 63: 4 [1997]).
- 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).

**Corunastylis Fitzg. Austral. Orchids 2(3): t.1 (1888). Prasophyllum alliance**

**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 nudum* (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).

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

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

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

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

**Cryptostylis subulata** (Labill.) Rchb.f. Beitr. Syst. Pflanzenk. 15 (1871).

*Malaxis subulata* Labill. Nov. Holl. Pl. 2: 62, t.212 (1806).

**Cyrtostylis R.Br. Prodr. Fl. Nov. Holland.: 322 (1810). Acianthus alliance**

**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. Pflanzenk. 67 (1871).

*Cyrtostylis oblonga* 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).

*Yonia australis* Hatch. Trans. Roy. Soc. New Zealand, Bot. 2: 185 (1963).

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

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

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

*Pterostylis trullifolia* var. *alobula* Hatch. Trans. Roy. Soc. NZ 77: 244, t.30, f.3E-H (1949).

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

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

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

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

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

*Pterostylis brumalis* L.B.Moore. New Zealand J. Bot. 6: 485, f.3 (1969).

**Diplodium puberula**

*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* aff. *nana*.

Clements has indicated that *Linguella* and *Diplodium* do not warrant separate genera [2010. ANOS Vic.Bull. 42 (8)]

***Diplodium trullifolium*** (Hook.f.) D.L.Jones, Molloy & M.A.Clem. Austral. Orchid Res. 4: 72 (2002).

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

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

*Pterostylis trullifolia* var. *gracilis* Cheeseman. Trans. & Proc. New Zealand Inst. 47: 271 (1915).

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

***Drymoanthus adversus*** (Hook.f.) Dockrill. Australasian Sarcanthinae: 32, t.3 (1967).

*Sarcophilus adversus* Hook.f. Fl. Nov.-Zel. 1: 241 (1853).

*Sarcophilus 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 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* “long column” agg.:** there are at least two late flowering *Gastrodia* with a long column.

***Gastrodia* aff. *sesamoides*.** *Gastrodia sesamoides* as meant by Cheeseman. Man. New Zealand Fl. 697 (1906), is not that of R.Br. (1810). *Gastrodia* “city” appears to be a variant.

***Hymenochilus* D.L.Jones, M.A.Clem. & Molloy. Austral. Orchid Res. 4: 72 (2002). *Pterostylis* alliance**

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

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

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

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

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

*Pterostylis mutica* as meant by Cheeseman. Trans. & Proc. New Zealand Inst. 15: 300 (1883), is not that of R.Br. (1810).

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

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

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

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

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

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

***Microtis arenaria*** Lindl. Gen. Sp. Orchid. Pl. t.306 (1840).

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

***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. Pflanzenk. 24 (1871).  
*Microtis longifolia* Col. Trans. & Proc. New Zealand Inst. 17: 247 (1885).  
*Microtis porrifolia* var. *parviflora* (R.Br.) Rodway. Tasman. Fl. 159 (1903).  
*Microtis aemula* Schltr. Bot. Jahrb. Syst. 39: 37 (1906).  
*Microtis bipulvinaris* 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. Pflanzenk. 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 frutetorum* Schldl. Linnaea 20: 568 (1847).  
*Microtis viridis* F.Muell. Fragm. (1866).  
*Microtis longifolia* Colenso. Trans. & Proc. New Zealand Inst. 17: 247 (1885). This is a late flowering form.  
*Microtis papillosa* Colenso. Trans. & Proc. New Zealand Inst. 18: 269 (1886).  
*Microtis pulchella* as meant by Lindl. Gen. Sp. Orchid. Pl. 395 (1840), is not that of R.Br. (1810).
- Microtis aff. unifolia:** a late flowering form allied to *M. unifolia* and *M. parviflora*. *M. longifolia* Col. is late flowering, but structurally indistinguishable.
- Molloybas D.L.Jones & M.A.Clem. Orchadian 13(10): 448 (2002). Corybas alliance**
- Molloybas cryptanthus** (Hatch) D.L.Jones & M.A.Clem. Orchadian 13(10): 448 (2002).  
*Corybas cryptanthus* Hatch. Trans. Roy. Soc. New Zealand 83: 577 (1956).  
*Corybas saprophyticus* as meant by Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 366, t.71 (1952), is not that of Schltr. (1923).
- Myrmecchila D.L.Jones & M.A.Clem. Orchadian 15(1): 36–37 (2005). Chiloglottis alliance**
- Myrmecchila formicifera** (Fitzg.) D.L.Jones & M.A.Clem. Orchadian 15(1): 37 (2005).  
*Chiloglottis formicifera* Fitzg. Austral. Orchids 1(3): (1877).
- Myrmecchila trapeziformis** (Fitzg.) D.L.Jones & M.A.Clem. Orchadian 15(1): 37 (2005).  
*Chiloglottis trapeziformis* Fitzg. Austral. Orchids 1(3): (1877).
- Nematoceras Hook.f. Fl. N. Zel. 1: 249, t.57 (1853). Corybas alliance**
- Nematoceras acuminatum** (M.A.Clem. & Hatch) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corybas acuminatus* M.A.Clem. & Hatch. New Zealand J. Bot. 23: 491, f.2 (1985).  
*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).
- Nematoceras hypogaeum** (Colenso) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corysanthes hypogaea* Colenso. Trans. & Proc. New Zealand Inst. 16: 336 (1884).
- Nematoceras iridescens** (Irwin & Molloy) 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).  
*Corysanthes iridescens* (Irwin & Molloy) Szlach. Richardiana 3(2): 98 (2003).  
*Corybas* “A” tagname.
- Nematoceras longipetalum** (Hatch) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corybas macranthus* var. *longipetalum* Hatch. Trans. & Proc. Roy. Soc. New Zealand 76: 580, t.60(1) (1947).  
*Corybas longipetalum* (Hatch) Hatch. NZNOG Journal 47: 6 (1993), is not that of Schltr. (1923).  
*Corybas orbiculatus* (Colenso) L.B.Moore. Fl. New Zealand Vol. 2: 118 (1970), is not *Corysanthes orbiculata* of Colenso (1891).
- Nematoceras macranthum** Hook.f. Fl. Nov.-Zel. 1: 250 (1853).  
*Corysanthes macrantha* (Hook.f.) Hook.f. Handb. N. Zeal. Fl. 266 (1864).  
*Corybas macranthus* (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 67 (1871).  
There are several entities in this aggregate. Probable hybrids with insect-pollinated members of the *N. trilobum* aggregate have been reported.
- Nematoceras orbiculatum** (Colenso) Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002).  
*Corysanthes orbiculata* Colenso. Trans. & Proc. New Zealand Inst. 23: 389 (1891).  
*Corybas orbiculatus* as meant by L.B.Moore. Fl. New Zealand Vol. 2: 118 (1970) and others (1970–1996), is

25



The  
 photography of  
 Kevin Matthews  
 (p.28 & 39)

20: *T. x dentata*

21: *Hylaeus* sp. On  
*T. pulchella*

22: *C. subulata*

23: *T. pulchella*,  
 striped & scented

24, 25: *T. pulchella*,  
 Ahipara gumfield.

26:, 27: *T. pulchella*  
 with fimbria, no  
 stripes

28: *T.* "split"

29: needs research



29



27



28





30

See p. 24

31





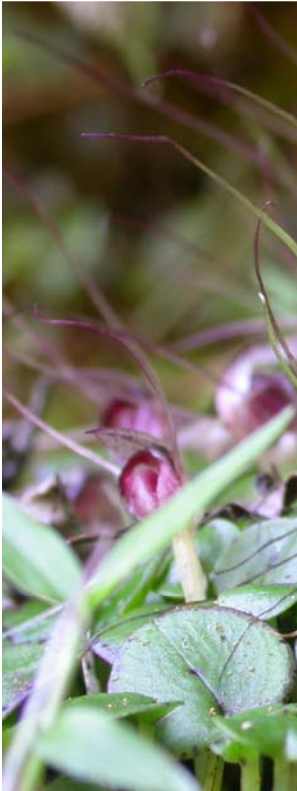




Fig.36: HB Matthews' *Thelymitra media* (see p.50)



- not *Corysanthes orbiculatus* of Colenso (1891) (see Molloy & Irwin. *New Zealand J. Bot.* 34 (1): 5 [1996]).  
*Corybas* “short tepals” and *Corybas* “C” tagnames.
- Nematoceras papa** (Molloy & Irwin) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).  
*Corybas* papa Molloy & Irwin. *New Zealand J. Bot.* 34(1): 5, f.1 (1996).  
*Corysanthes* papa (Molloy & Irwin) Szlach. *Richardiana* 3(2): 98 (2003).  
*Corybas* “Mt Messenger” and *Corybas* “B” tagnames.
- Nematoceras papillosum** (Colenso) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).  
*Corysanthes* papillosa Colenso. *Trans. & Proc. New Zealand Inst.* 16: 337 (1884).  
This has been regarded as a form of *Nematoceras macranthum*, though its status remains speculative.
- 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).  
*Corybas rivularis* (A.Cunn.) Rchb.f. *Beitr. Syst. Pflanzenk.* 67 (1871).  
*Nematoceras panduratum* (Cheeseman) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002).  
*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 *Nematoceras rivulare* complex includes unnamed taxa with the tagnames N. “Kaimai”, N. “rest area”, N. “Kaitarakihī”, N. “whiskers” (aka N. “viridis”), N. “Mangahuaia”, N. “sphagnum”, N. “veil”, N. “Pollok” and N. “Motutangi”.
- Nematoceras trilobum** Hook.f. *Fl. Nov.-Zel.* 1: 250 (1853).  
*Corysanthes triloba* (Hook.f.) Hook.f. *Handb. N. Zeal. Fl.* 265 (1864).  
*Corybas trilobus* (Hook.f.) Rchb.f. *Beitr. Syst. Pflanzenk.* 67 (1871).  
About 25 taxa in the *Nematoceras trilobum* complex are of speculative taxonomic status; they include the late-flowering N. “Trotters” (almost certainly N. *trilobum* sens. strict.), the tiny May to July flowering forms with the tagname N. “pygmy”; N. “Rimutaka” (NZNOG Journal 58: 8–9 [1996]), N. “round leaf”, N. “craigielea”, N. “darkie”, N. “trisept”, N. “triwhite”, and many others. The N. *trilobum* complex has tetraploids in the South Island and Chatham I., and predominantly diploids in the North Island, but further chromosome counts are needed (see Dawson, Molloy & Beuzenberg. *New Zealand J. Bot.* 45(4): 644 [2007]).
- Nematoceras aff. sulcatum**: a form on the Chathams, similar to N. *sulcatum* from Macquarie Is (see Molloy B.P.J. *Orchids of the Chatham Islands.* DOC [2002]).
- 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* forma viride Hatch. *Trans. Roy. Soc. N.Z. Bot.* 2: 195 (1963).
- Orthoceras strictum** R.Br. *Prodr. Fl. Nov. Holland.:* 317 (1810).
- Petalochilus R.S.Rogers. J. Bot. 62: 65 (1924). Caladenia alliance**
- Petalochilus calyciformis** R.S.Rogers. *J. Bot.* 62: 66 (1924).  
Moore (1970) treated this as an aberrant floral (peloric) mutation of *Caladenia* species.
- Petalochilus saccatus** R.S.Rogers. *J. Bot.* 62: 66, t.571, 4–7 (1924).  
*Caladenia saccata* (R.S.Rogers) Hopper & A.P.Br. *Austral. Syst. Bot.* 17: 171–240 (2004).  
Moore (1970) treated this as an aberrant floral (peloric) mutation of *Caladenia* species.
- Plumatichilus Szlach. Polish Bot. J. 46(1): 23 (2001). Pterostylis alliance**
- Plumatichilus tasmanicum** (D.L.Jones) Szlach. *Polish Bot. J.* 46(1): 23 (2001).  
*Pterostylis tasmanica* D.L.Jones. *Muelleria* 8(2): 177 (1994).  
*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).

Jones suggests there is a second unnamed NZ entity.

### **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 includes 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 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 alliance**

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

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

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

*Pterostylis* "rubricaulis" tagname.

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

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

*Pterostylis* "Catlins" tagname.

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

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

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

**Pterostylis aff. banksii**: A smaller taxon than true *P. banksii*, common around Wellington, and apparently found elsewhere (see *NZNOG Journal* 80: 14,19 [2001]). This may, in the editor's opinion, be *P. emarginata* Col.

**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).

Dubious. See *P. banksii* and *P. aff. banksii*.

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

*Pterostylis vereenae* 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. "peninsula"*, *P. "sphagnum"*.

**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* "Erua" tagname.

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

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

*Pterostylis furcata* 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 aff. montana agg.**: includes as many as 14 undescribed taxa, including the distinctive *P. "Blyth"* = "*P. pulchragalea*" ms name of HB Matthews.

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



- Pterostylis furcata* var. *linearis* Hatch. Trans. & Proc. Roy. Soc. NZ 77: 243, plate 29, 2 (1949).  
*Pterostylis* “linearis” tagname.
- Pterostylis patens*** Colenso. Trans. & Proc. New Zealand Inst. 18: 270 (1886).  
*Pterostylis banksii* 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* aff. *graminea*.  
 P. “Hackett” tagname.
- 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).  
 Dubious. Was identified as *P. banksii* by Cheeseman.
- Pterostylis subsimilis*** Colenso. Trans. & Proc. New Zealand Inst. 28: 611 (1896).  
 Was identified as *P. banksii* by Cheeseman
- Pterostylis venosa*** Colenso. Trans. & Proc. New Zealand Inst. 28: 610 (1896).  
*Pterostylis confertifolia* Allan. Trans. & Proc. New Zealand Inst. 56: 32 (1926).  
*Pterostylis trifolia* Colenso. Trans. & Proc. New Zealand Inst. 31: 281 (1899).
- Simpliglottis Szlach. Polish Bot. J. 46(1): 13 (2001). Chiloglottis alliance**
- Simpliglottis cornuta*** (Hook.f.) Szlach. Polish Bot. J. 46(1): 13 (2001).  
*Chiloglottis cornuta* Hook.f. Bot. Antarct. Voy., Vol. 1, Fl. Antarct.: 69 (1844).  
*Caladenia cornuta* (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 67 (1871).  
 The NZ form of *Simpliglottis cornuta* may differ from the Australian, and may be an aggregate.
- Simpliglottis valida*** (D.L.Jones) Szlach. Polish Bot. J. 46(1): 14 (2001).  
*Chiloglottis valida* D.L.Jones. Austral. Orchid Res. 2: 43–44, t. 54, plate p.92 (1991).  
*Chiloglottis gunnii* as meant by Molloy. Native orchids of NZ: 9 (1983), is not that of Lindl. (1840).
- Singularybas Molloy, D.L.Jones & M.A.Clem. Orchadian 13(10): 449 (2002). Corybas alliance**
- 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).  
*Corybas oblongus* (Hook.f.) Rchb.f. Beitr. Syst. Pflanzenk. 67 (1871).  
 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 (West Coast and subantarctic islands) is more clearly separate.
- 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).  
 The name *Neottia sinensis* has been used for *Spiranthes australis* in Australia, as has the name *Spiranthes sinensis* var. *australis* (R.Br.) H.Hara & Kitam. Acta Phytotox. Geobot. 36 (1–3): 93 (1985).
- Spiranthes* “Motutangi”**: tagname for endangered Far North taxon similar to *S. australis* of Australia.
- Sullivania F.Muell. J. Proc. Roy. Soc. New South Wales 15: 229 (1882).**
- Sullivania minor*** (R.Br.) D.L.Jones & M.A.Clem. Orchadian 15: 36 (2005).  
*Caleana minor* R.Br. Prodr. Fl. Nov. Holland.: 329 (1810).  
*Caleya minor* (R.Br.) Sweet. Hort. Brit. (Sweet) 385 (1827).  
*Caleya sullivanii* F.Muell. Australas. Chem. Druggist 4: 44 (1882).  
*Caleana nublingii* Nicholls. Victoria Naturalist 48: 15 (1931).  
*Paracaleana sullivanii* (F.Muell.) Blaxell. Contr. New South Wales Natl. Herb. 4:281 (1972).  
*Paracaleana minor* (R.Br.) Blaxell. Contr. New South Wales Natl. Herb. 4: 281 (1972).

**Taeniophyllum Blume, Bijdr. 6: t.3, f.70: 8: 355, t.70 (1825)**

**Taeniophyllum norfolkianum** D.L.Jones, B.Gray & M.A.Clem. Orchadian 15(4):157–158, f.1. (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: 30 (2004).

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

Thelymitra imberbis Hook.f. Fl. Nov.-Zel. 1: 244 (1853).

Thelymitra carnea 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 Berggr. Minneskr. Fisiog. Sallsk. Lund 8: 21 f (1878).

Thelymitra longifolia var. stenopetala Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 F–H (1952).

Thelymitra longifolia var. intermedia Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 396, plate 80 J (1952).

Was tagnamed T. “pseudopauciflora” for a time.

**Thelymitra concinna** Colenso. Trans. & Proc. New Zealand Inst. 17: 207 (1885).

The pink-ciliated form of T. hatchii, over which T. concinna should take precedence.

**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. Antarct.: 70 (1844).

Thelymitra venosa as meant by Cheeseman. Man. New Zealand Fl. 671 (1906), is not that of R.Br. (1810).

Thelymitra venosa var. typica Hatch Trans. & Proc. Roy. Soc. New Zealand 79: 390, plate 77 A–C (1952).

Thelymitra venosa var. cedricsmithii Hatch Trans. & Proc. Roy. Soc. New Zealand 79: 390, plate 77 D–E (1952).

Thelymitra venosa var. cyanea Hatch. Trans. & Proc. Roy. Soc. New Zealand 79: 391, plate 77 F–H (1952).

**Thelymitra >dentata** L.B.Moore: a sterile hybrid of T. longifolia × T. pulchella.

Thelymitra dentata L.B.Moore. New Zealand J. Bot. 6: 478, f.2 (1969).

**Thelymitra formosa** Colenso. Trans. & Proc. New Zealand Inst. 16: 338 (1884).

Thelymitra circumsepta 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, f.2 (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 aff. ixioides.**

Thelymitra ixioides as meant by Hook.f. Handb. N. Zeal. Fl. 669 (1864), is not that of 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).

**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 var. alba (Colenso) Cheeseman. Man. New Zealand Fl. 339 (1925).

Thelymitra longifolia var. forsteri (Sw.) 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 aff. longifolia agg.:** 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 matthewsii** 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).

**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 forms in this aggregate.

**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 purpureo-fusca*** Colenso. Trans. & Proc. New Zealand Inst. 17: 249 (1885).  
*Thelymitra* “Whakapapa”: undescribed taxon from Ruapehu, may correspond to *T. purpureo-fusca*, or may be distinct.
- 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, f.6 (1990).  
*Thelymitra intermedia* as meant by L.B.Moore. Fl. New Zealand Vol. 2: 129 (1970), is not that of Berggr. (1878).
- Thelymitra* “Ahipara”**: an unnamed taxon from the Far North.  
***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]).  
***Thelymitra* “orange-top”**: undescribed taxon from Northland.  
***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, f.6 [1998]).  
***Thelymitra* “tholinigra”**: (see Scanlen. NZNOJ 85: 10, 15).  
***Thelymitra* “Whakapapa”**: undescribed taxon from Ruapehu, that may correspond to *T. purpureo-fusca*, or may be distinct.
- Townsonia** Cheeseman. Man. New Zealand Fl. 692 (1906). **Acianthus alliance**  
***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).
- Winika M.A.Clem., D.L.Jones & Molloy. Orchadian 12(5): 214 (1997). Dendrobium alliance**  
***Winika cunninghamii*** (Lindl.) M.A.Clem., D.L.Jones & Molloy. Orchadian 12(5): 214 (1997).  
*Dendrobium biflorum* as meant by A.Rich. Essai Fl. Nov. Zel. 221 (1832), is not that of Sw. (1800).  
*Dendrobium cunninghamii* Lindl. Bot. Reg. 21 sub. t.1756 (1835).  
*Dendrobium lessonii* Colenso. Trans. & Proc. New Zealand Inst. 15: 326 (1883).

A new classification for subtribe Pterostylidinae (Orchidaceae) has recently been formally described in which there is one genus, *Pterostylis* R.Br., two subgenera and 10 sections. Five new combinations are made for this classification at the ranks of subgenus and section, viz. *Pt.* subg. *Oligochaetochilus* (Szlach.) Janes & Duretto, *Pt.* sect. *Parviflorae* (Benth.) Janes & Duretto, *Pt.* sect. *Pharochilum* (D.L.Jones & M.A.Clem.) Janes & Duretto, *Pt.* sect. *Stammorchis* (D.L.Jones & M.A.Clem.) Janes & Duretto and *Pt.* sect. *Urochilus* (D.L.Jones & M.A.Clem.) Janes & Duretto. *Pt.* sect. *Parviflorae* Benth. is lectotypified. To complete the revision, seven new species-level combinations are made for two species from Western Australia, one from New South Wales and four from Queensland, viz. *Pt. anaclasta* (D.L.Jones) Janes & Duretto, *Pt. extranea* (D.L.Jones) Janes & Duretto, *Pt. pearsonii* (D.L.Jones) Janes & Duretto, *Pt. pedina* (D.L.Jones) Janes & Duretto, *Pt. sinuata* (D.L.Jones) Janes & Duretto, *Pt. timothyi* (D.L.Jones) Janes & Duretto and *Pt. thulia* (D.L.Jones) Janes & Duretto.

Janes JK, Duretto MF 2010. A new classification for subtribe Pterostylidinae (Orchidaceae), reaffirming *Pterostylis* in the broad sense. Australian Systematic Botany.

<http://www.publish.csiro.au/nid/150/paper/SB09052.htm>.

# 2010 Annual General Meeting report

By Gordon Sylvester

The AGM was to be held at Te Kauri Lodge Kawhia Rd on Saturday 27 November.

Twenty hardy souls braved the trip out and assembled at the Lodge on the 26th. The first item on the agenda was a look around the tracks to see what was there. Bill Liddy and his band of helpers started to prepare the evening meal which was duly served about 7pm. We afterwards enjoyed another selection of Eric Scanlen's stereoscopic slides and commentary along with discussion from a couple of individuals in the audience. Saturday morning was fine and calm and warm. The group met for breakfast and swiftly broke up into several parties to explore the various tracks around the area.

About 6pm the Chair called the members to order. The various reports were made and voted on. The committee was elected unopposed with the addition of Gordon Sylvester as South Island representative.

David McConachie then announced the presentation of a Certificate of appreciation to Michael Pratt for his work on the website. Gordon Sylvester was also presented with a Certificate for his work on mapping orchids.

David then spoke about the Hatch medal and its design and designer. He then called Bruce Irwin forward to receive the medal for this year for his outstanding services to New Zealand native orchid studies spanning some 70 years. Bruce was very humble in his acceptance, saying that there were others who

deserved it more than he. Bruce commented that Dan should have been the first recipient.

Bill Liddy and Wilma Fitzgibbon spoke about the working bee to be held at Iwitahi two weeks later and encouraged all those who could attend to do so.

Two matters arose one concerning a proposed use of photographs by a Government department. The other was the issue of tagnamed taxa and the need to recognise these formally. Both matters were sent back to the proposers for more investigation and presentation at the next suitable opportunity.

The evening entertainment was the showing of the DVD created by Graham Giles of Great Britain on his recent attendance at the Arthurs Pass midsummer camp which was enjoyed by all.

Another very good group gathering with a total of 23 members being present over the weekend including a couple from England.

## **Plant list for Te Kauri Lodge**

There are several tracks associated with the Te Kauri Scenic Reserve, Kawhia. All of them are secondary canopies, having been logged in the past for Kauri. There are Kauri at various stages of growth now back in the area. The soils are weathered limestone sandstone. The weather gods were kind to the group with fine sunny conditions on all three days. A total of 43 species had been recorded in the past by 3 different visitors. This trip was not to be any different, recording a total of 29 species.

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## **1. Te Kauri Lodge and Te Kauri Scenic Reserve Kawhia Rd. E.D. 12.02**

This is the first of a series of papers on orchids at a specific location, or for a specific Ecological District. The purpose of these lists is to make the information now contained in the Group's mapping database available.

Where private property is involved this does not give the right of access. You must seek permission before entering the property. At all times remember the Group's code of conduct.

If you are aware or find anything not in the list please let us know so we can update our database.



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**Observer**

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<i>Acianthus sinclairii</i>	P. de Lange (1987), NZNOG (2010)
<i>Adelopetalum tuberculatum</i>	P. de Lange (1987)
<i>Chiloglottis cornuta</i>	P. de Lange (1987), NZNOG (2010)
<i>Corunastylis pumila</i>	P. de Lange (1987)
<i>Corunastylis nuda</i>	P. de Lange (1987)
<i>Corybas cheesemanii</i>	P. de Lange (1987), NZNOG (2010)
<i>Cryptostylis oblonga</i>	P. de Lange (1987)
<i>Diplodidium trullifolia</i>	P. de Lange (1987), NZNOG (2010)
<i>Diplodidium alobulum</i>	P. de Lange (1987), NZNOG (2010)
<i>Drymoanthus adversus</i>	Jane & Donaghy (2008), NZNOG (2010)
<i>Earina aestivalis</i>	NZNOG (2010)
<i>Earina autumnalis</i>	Jane & Donaghy (2008), NZNOG (2010)
<i>Earina mucronata</i>	NZNOG (2010)
<i>Gastrodia</i> aff. <i>sesamoides</i>	P. de Lange (1987)
<i>Gastrodia minor</i>	P. de Lange (1987)
<i>Gastrodia</i> “long column”	P. de Lange (1987)
<i>Ichthyostomum pygmaeum</i>	P. de Lange (1987), NZNOG (2010)
<i>Microtis parviflora</i>	P. de Lange (1987)
<i>Microtis unifolia</i>	P. de Lange (1987), NZNOG (2010)
<i>Molloybas cryptanthus</i>	NZNOG (2010)
<i>Nematoceras acuminatum</i>	P. de Lange (1987), NZNOG (2010)
<i>Nematoceras macranthum</i>	P. de Lange (1987), NZNOG (2010)
<i>Nematoceras hypogaeum</i>	P. de Lange (1987)
<i>Nematoceras papa</i>	P. de Lange (1987)
<i>Nematoceras orbiculatum</i>	P. de Lange (1987)
<i>Nematoceras trilobum</i> agg.	P. de Lange (1987), NZNOG (2010)
<i>Nematoceras iridescens</i>	P. de Lange (1987)
<i>Nematoceras</i> “whiskers”	P. de Lange (1987)
<i>Nematoceras</i> “round leaf”	P. de Lange (1987)
<i>Orthoceras novae-zeelandiae</i>	P. de Lange (1987)
<i>Petalochilus chlorostylus</i>	P. de Lange (1987), NZNOG (2010)
<i>Prasophyllum colensoi</i>	P. de Lange (1987)
<i>Pterostylis cardiostigma</i>	P. de Lange (1987)
<i>Pterostylis montana</i> agg.	P. de Lange (1987)
<i>Pterostylis graminea</i> agg.	P. de Lange (1987)
<i>Pterostylis agathicola</i>	P. de Lange (1987), NZNOG (2010)
<i>Pterostylis banksii</i>	P. de Lange (1987)
<i>Pterostylis emarginata</i> (aff. <i>banksii</i> )	NZNOG (2010)
<i>Singularlybas oblongus</i>	Jane & Donaghy (2008), NZNOG (2010)
<i>Stegastyla atradenia</i>	P. de Lange (1987)
<i>Thelymitra pulchella</i>	P. de Lange (1987)
<i>Thelymitra carnea</i>	P. de Lange (1987)
<i>Thelymitra</i> aff. <i>pauciflora</i>	Jane & Donaghy (2008), NZNOG (2010)
<i>Thelymitra</i> x <i>dentata</i>	P. de Lange (1987)
<i>Thelymitra longifolia</i>	P. de Lange (1987), NZNOG (2010)
<i>Thelymitra colensoi</i>	P. de Lange (1987)
<i>Winika cunninghamii</i>	P. de Lange (1987), NZNOG (2010)

*A number of unusual plants were seen at Te Kauri by NZNOG members in 2010.*

A large *Earina* seen near the Lodge. It did conform to *Earina mucronata* and there is *E. aestivalis* growing in the same general area: is this a hybrid?

*Petalochilus* with green or red stems: the latter first noted in the Tararua and appears in various places; the whole plant and flower has red pigment. There is always a green form growing in close proximity

*Pterostylis* aff. *banksii*: did not look like *P. banksii* but was close to it.

A *Pterostylis* with a long dorsal sepal looking like the Concord nose. Is reasonably common over a wide area down as far as Bennydale.

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# The Column: Eric Scanlen

## *Pterostylis emarginata* at Te Kauri?

When Ian Reid and the Column arrived at Te Kauri Lodge, 26 Nov 2010, the first orchid seen was all down the shady east side of the driveway and on the bank above. The Column's aging film camera was soon focussed up because this mini *banksii* also had short leaves (**Fig.37**) which barely overtopped the flower, unlike *Pterostylis banksii* s.s. Plants were in flower, in capsule and dehisced, thus 26 Nov was near the tail end of its season. Allan Ducker's later digital photos, from the Deverson and Medium Gorge Routes, showed up another trait on his Mac screen. The labellum tip (**Fig.38**) was rather wide, slightly twisted on some but all had an arched tip. The tip, arched in section, is also found on *Pt. australis* and on some *Pt. banksii* just to make ID difficult.

Everywhere that field parties went around Te Kauri Lodge, despite the dry conditions, was this mini *banksii* with upturned and extended dorsal sepal. Extreme heights were from 60-300mm, (open sun to healthiest in shady litter) but average, say 140mm plants looked every bit like Ian St George's *Pt.* aff. *banksii* [J80:14,19] at Airlie Rd, Whenuatapu (which he identified as *P. emarginata* Col. in J117:2,6-14.). It has also been posited as H.B.

Matthews *Pt.* "media" (see p.42). Ian was aware that this plant had been found in the area, spotted the likeness in the Column's emailed pic and remarked on the possibility that it was Colenso's *Pt. emarginata*. Colenso's description [1] bore out Ian's thoughts in all visible traits. The arched cross section of the labellum tip may be what Colenso termed "emarginate". The lectotype is at CHR. If *Pt* "media" and *Pt. emarginata* Col. are synonymous, the latter would take precedence being earlier (1834) and a described species. The Column's *Pt.* "media" (**Fig.39**) has a chunkier labellum and brighter red colours. Yet to be resolved.

T.F. Cheeseman [2] lumped *Pt. emarginata* and four others of Colenso's greenhood species with *Pt. banksii* and here, several members of the field parties seemed to agree but discerning eyes could see the differences, much as no one was keen to take on yet another species to memorise.

### References

1. Colenso, W. *Trans. NZ Inst* 1883 15: 328. Also *NZNOG Historic Series* 1989, No. 1: 38
2. Cheeseman, T.F. *Manual of the NZ flora* 1906 under *P. Banksii*, also *NZNOG Historic Series*, 1989 No 4: 50



37



38



39

Fig. 37. *Pterostylis emarginata* at Te Kauri Lodge, by the Column 26 Nov 2010.

Fig. 38. Arched labellum tip on *Pterostylis emarginata* from the big loop track; by Allan Ducker 27 Nov 2010.

Fig. 39 *Pterostylis* "media" Mountain Rd, Waitakeres, by the Column Oct 1958.





*Townsonia deflexa* at Waiotonga ("snow-water") Falls, 3 December 2010.  
Is the little insect assisting with self-pollination?