



Field guide to the New Zealand orchids

Ian St George, Bruce Irwin, Dan Hatch

2005 edition

Cover

Pterostylis areolata,
watercolours 1984, 1985,
by Thom Pendrigh, Oxford,
North Canterbury

Field guide
to the
New Zealand
orchids

by
Ian St George
Bruce Irwin
and
Dan Hatch



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Introduction to the third edition

In the four years since the second edition of this guide there have been a number of taxonomic changes, new genera and species have been described, plants newly recognised, and a number of others renamed. Not everybody agrees with the new names, and this edition does not use all of them: we have chosen those that make sense to us, and the final nomenclature here results from fierce argument, conservative sentiment and sheer stubbornness, leavened by editorial charm.

We recognise over 120 different New Zealand orchids, and we are confident there are more. Many tagnamed plants await formal description or rejection, and of these we have chosen to include only those we are convinced are different. The three of us do not agree fully about the identification of all orchids in this book, and we have made some compromises; Ian St George made the final decision on what to include. Where separation of similar plants relies on key differentiating characters, we have emphasised those in capitals.

The flowering times we have given are average for New Zealand – they may be earlier or later, depending on habitat, season, latitude or altitude.

The drawings are the work of Bruce Irwin and Ian St George, with help from Eric Scanlen, whose work we acknowledge.

There are inevitably omissions and inaccuracies in the maps. Some species have been “split” since the NZ Native Orchid Group’s mapping scheme began (from 1972); for instance *Caladenia carnea* as recorded by Lucy Moore in 1970, contained what we now recognise as at least six different taxa; what we have called *Corybas trilobus* probably contains even more; the maps are inaccurate for these. Some ecological regions are remote, and their orchid flora have simply not been reported to us. Thus although widely separated or bipolar distributions may suggest the presence of different taxa, such should be interpreted with caution, as they may simply reflect under-reporting of new or unfamiliar plants. We are grateful to Gordon Sylvester for updating the maps to 2005. Where an orchid has been reported from only one or two sites, that is noted in the text, and map is not provided. Colour is rarely as useful as structure in identification, and many orchids have “alba” forms, which lack red/blue pigment.

Common names are not always common, so here we use the botanical names, which usually have two words. The first, the genus, consists of sometimes one, but more usually many related species. The second word indicates the species, a group of closely related plants which are distinct in various ways from other groups in the same genus. For instance *Thelymitra matthewsii* is a species of the genus *Thelymitra*. Ten genera (*Adenochilus*, *Aporostylis*, *Corybas*, *Cryptostylis*, *Danhatchia*, *Paracaleana*, *Singularybas*, *Townsonia*, *Waireia* and *Winika*) have only one species in New Zealand. When an unnamed plant looks rather like a named species, it may be said to have an affinity with that species, and may be called, for example, *Pterostylis* aff. *montana*. Similarly, if an unnamed plant is just one of several that have been included in one species in the past, it

is said to be a member of that aggregate, and may be said to be in, for example, the *Nematoceras triloba* agg. In the past, and in other countries, similar plants may be described as varieties, or forms, of the “parent” plant—for example *Caladenia carnea* var. *minor* forma *calliniger* Hatch was a name used for *Caladenia atradenia*.

Seven or eight of our orchids are epiphytes – orchids “perching” on trees or rocks or clay banks, sometimes surviving long after a tree or branch has fallen to the ground; the remainder are terrestrial – “ground” orchids, but these can also grow in the humus of rough bark, on the bases of tree ferns, in the forks of branches or on rotting logs.

Orchid genera are classified largely by the structure of the flower; as are species, although these more often include vegetative characters such as leaf form, the presence or absence of hairs, and other features. New molecular technologies such as DNA analysis are suggesting differences among plants that appear structurally identical.

Orchid flowers in general have three sepals and three petals. In most genera the upper (dorsal) sepal has been converted into a hood which protects the anther from the weather, while the middle petal (labellum) is often specialised into an elaborately decorated, insect-attractive, landing platform. Take a look at the New Zealand endemic, *Aporostylis bifolia* for a good example. *Thelymitra* is unusual in having all six floral segments roughly the same shape. The insect-attractive function here is taken over by the complex column wings. In *Pterostylis* the dorsal sepal and petals are tongue-and-grooved together; in *Gastrodia* the sepals and petals are fused into a tube; in the *Corybas* alliance the labellum is rolled so that with the dorsal sepal it forms a tube.

The reproductive parts in the middle of an orchid flower are joined into a structure called the column, which bears the single male anther with its pollinia, and the female stigmatic plate, consisting of two fertile stigmas and the rostellum (originally a third stigma). Various modifications of the column and other flower parts promote insect pollination, or more commonly in New Zealand, facilitate self-pollination. The detailed structure of the column is important in the identification of the Thelymitras.

“Progress” (draining swamps and wetlands and clearing forest for urban sprawl) destroys habitat. The New Zealand Native Orchid Group was formed in 1982 to act as a forum for those interested in these unusual plants, and to promote their conservation. We are grateful for the continued support of members of the Group who send reports of their orchid finds in the more remote corners of the country.

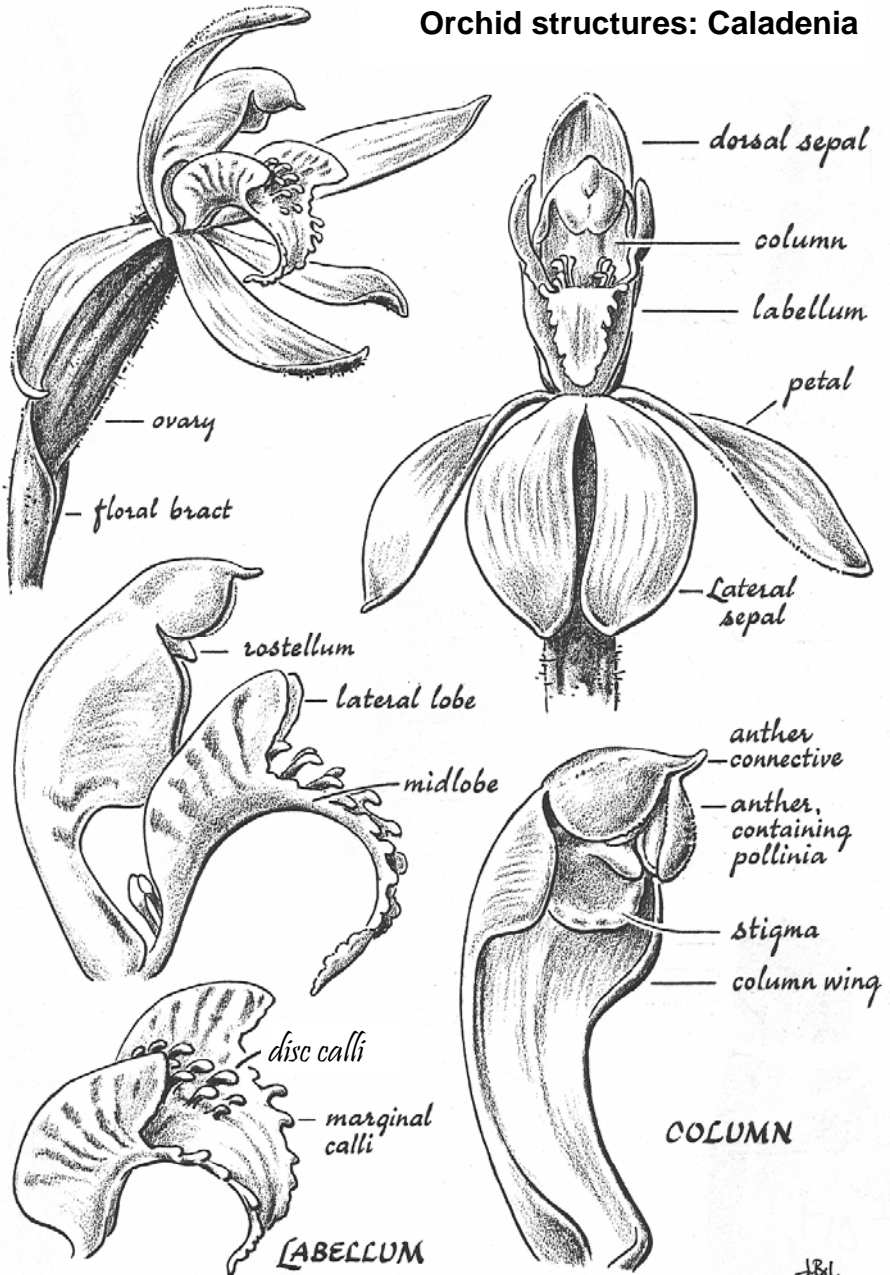
This book is a simple guide to native orchids, where they are likely to be found and what they look like. A significant number of New Zealand orchids are rare and some are endangered. If you do discover a threatened orchid unexpectedly, please report your find to the staff of the Department of Conservation.

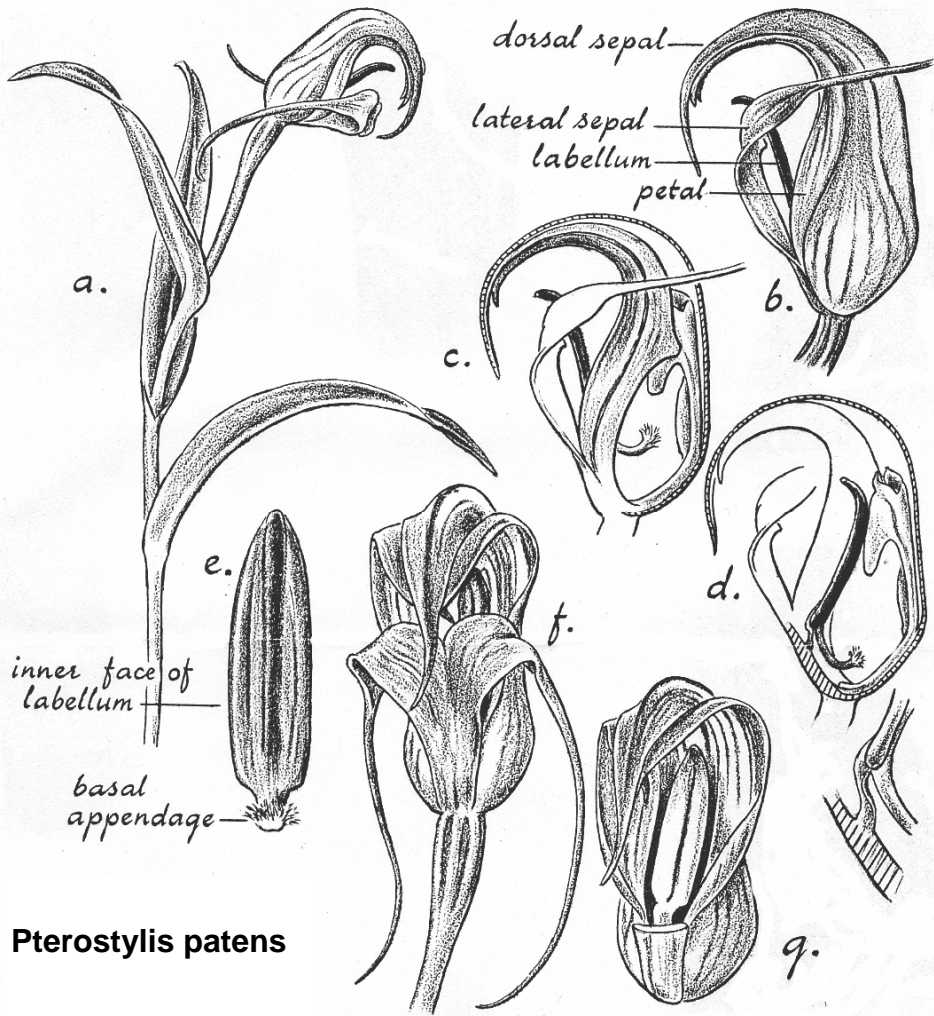
Admire them, smell them, photograph them or draw them; but please do not take them. We hope this guide will help you identify them in the field; that way you will not have to take one home.

If you are not already a member of the New Zealand Native Orchid Group, consider joining: you will find contact details on the Group’s website www.nativeorchids.co.nz.

Ian St George, Bruce Irwin, Dan Hatch

Orchid structures: Caladenia

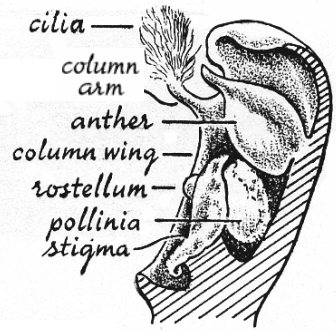
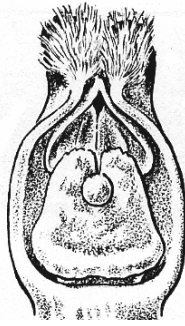
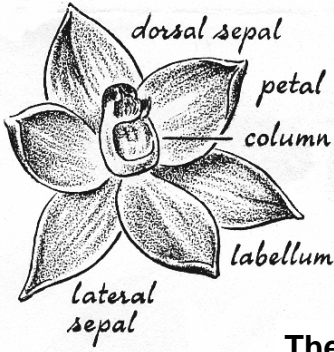




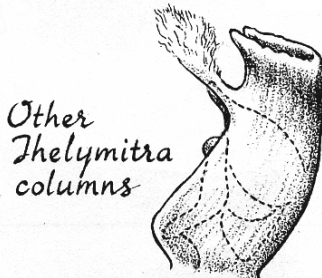
Pterostylis patens

LEGEND

- a. flowering plant; b. flower from side—labellum in set position;
- c. near side of dorsal sepal removed to show groove in petal, into which margin of dorsal sepal fits snugly;
- d. near petal removed; labellum in tripped position; also diagram of hinge;
- e. labellum—inner face; f. flower from in front.
- g. upper portions of lateral sepals removed; labellum in tripped position virtually closing opening at front of galea.



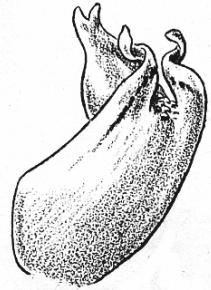
Thelymitra aff. pauciflora



T. hatchii

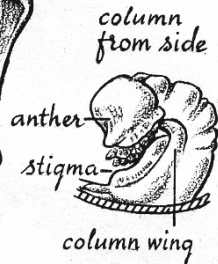
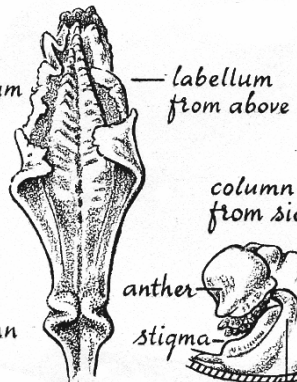
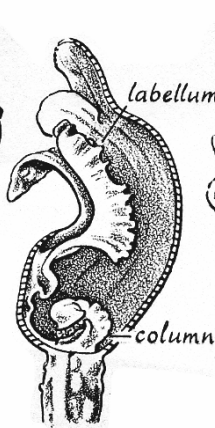
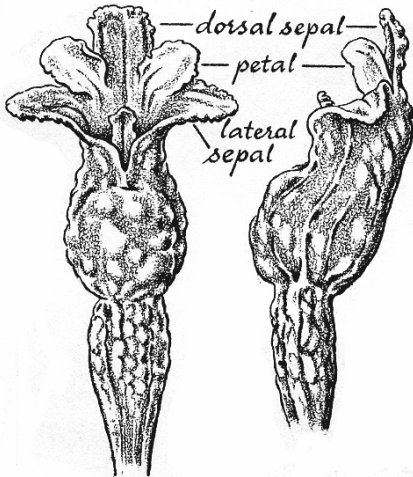


T. carnea

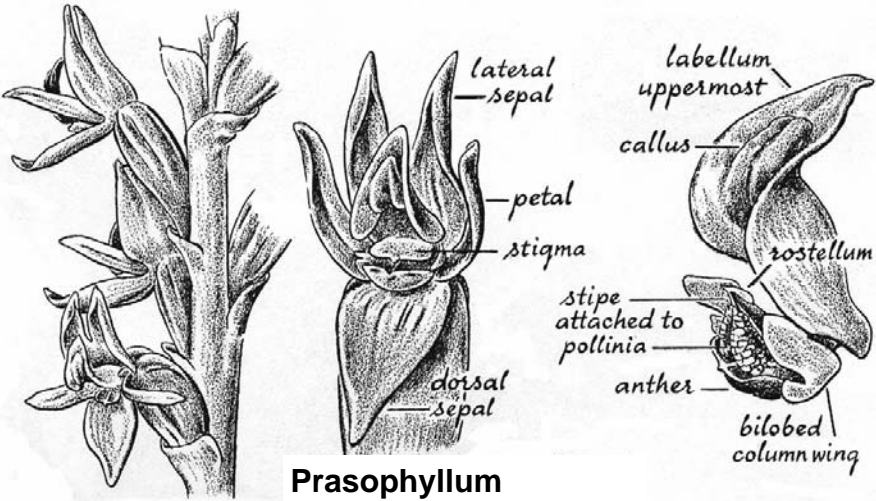
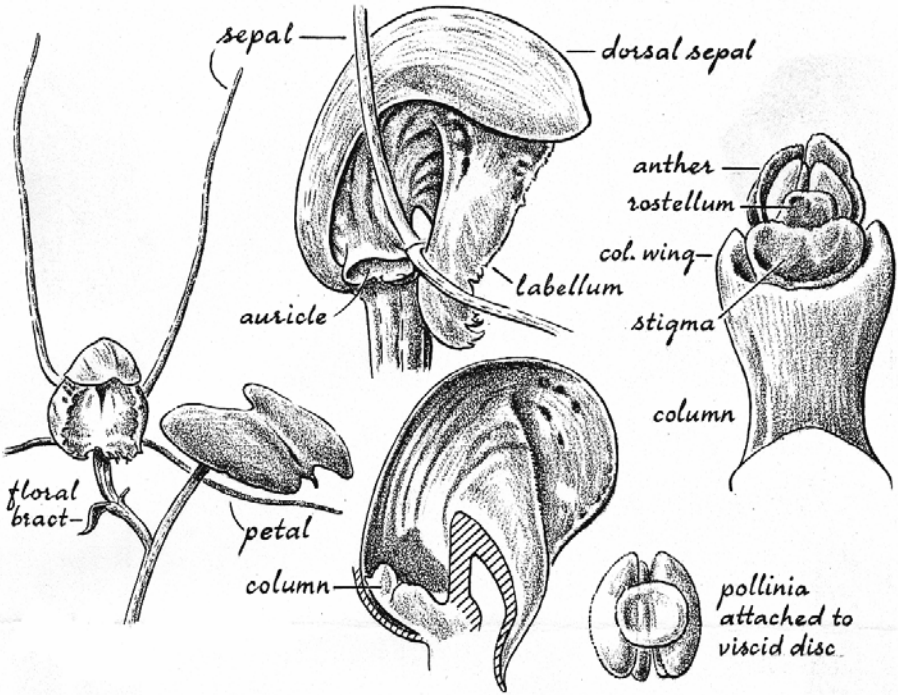


T. cyanea

Gastrodia cunninghamii



Nematoceras (Corybas) trilobum agg.

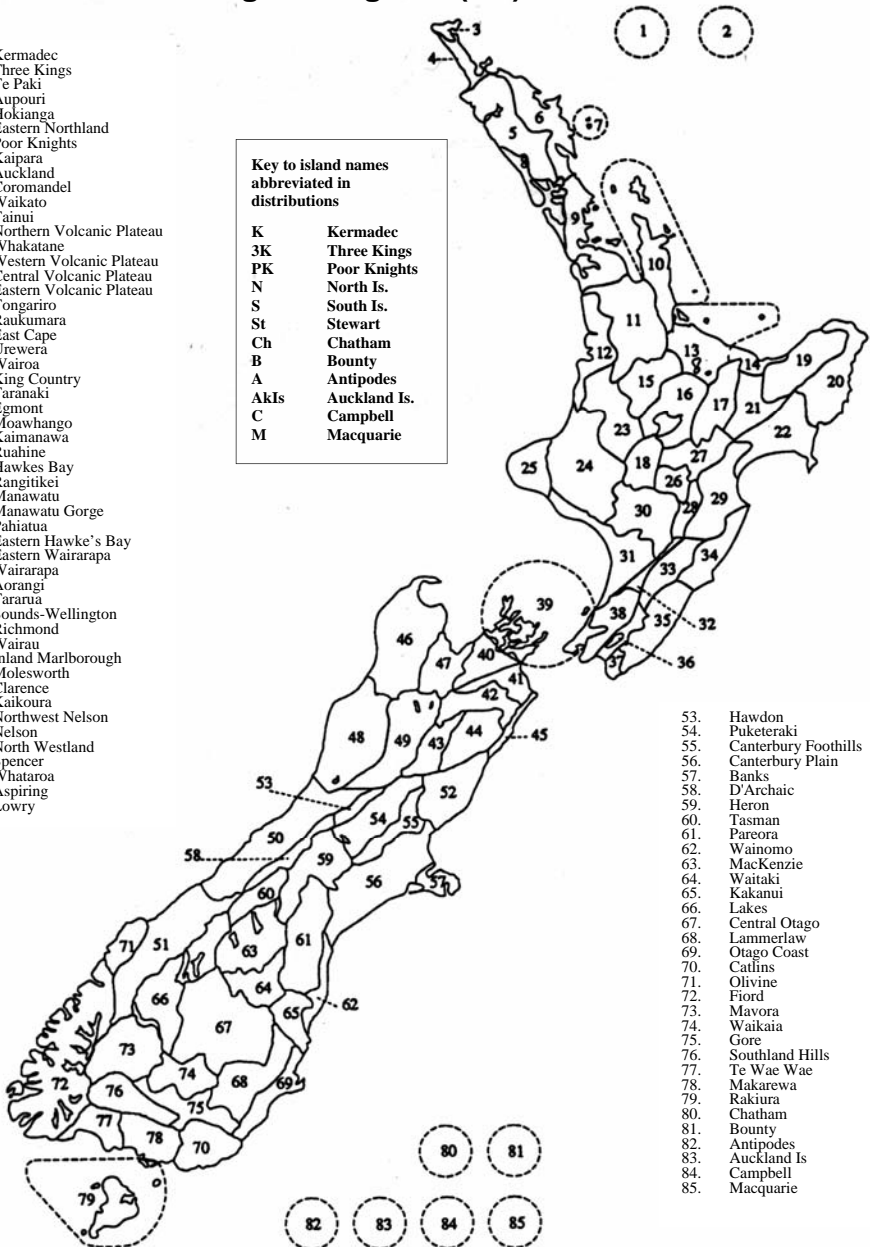


Prasophyllum

New Zealand Ecological Regions (ER)

1. Kermadec
2. Three Kings
3. Te Pahi
4. Aupouri
5. Hokianga
6. Eastern Northland
7. Poor Knights
8. Kaipara
9. Auckland
10. Coromandel
11. Waikato
12. Tāiānu
13. Northern Volcanic Plateau
14. Whakataane
15. Western Volcanic Plateau
16. Central Volcanic Plateau
17. Eastern Volcanic Plateau
18. Tongariro
19. Raukumara
20. East Cape
21. Urewera
22. Wairoa
23. King Country
24. Taranaki
25. Egmont
26. Moawhango
27. Kaimanawa
28. Ruahine
29. Hawkes Bay
30. Rangitikei
31. Manawatu
32. Manawatu Gorge
33. Pahiatua
34. Eastern Hawke's Bay
35. Eastern Wairarapa
36. Wairarapa
37. Aorangi
38. Tararua
39. Sounds-Wellington
40. Richmond
41. Wairau
42. Inland Marlborough
43. Molesworth
44. Clarence
45. Kaikoura
46. Northwest Nelson
47. Nelson
48. North Westland
49. Spencer
50. Whataroa
51. Aspiring
52. Lowry

Key to island names abbreviated in distributions	
K	Kermadec
3K	Three Kings
PK	Poor Knights
N	North Is.
S	South Is.
St	Stewart
Ch	Chatham
B	Bounty
A	Antipodes
AkIs	Auckland Is.
C	Campbell
M	Macquarie



53. Hawdon
54. Puketeraki
55. Canterbury Foothills
56. Canterbury Plain
57. Banks
58. D'Archaic
59. Heron
60. Tasman
61. Pareora
62. Wainomo
63. MacKenzie
64. Waitaki
65. Kakanui
66. Lakes
67. Central Otago
68. Lammerlaw
69. Otago Coast
70. Catlins
71. Olivine
72. Fiord
73. Mavora
74. Waikaia
75. Gore
76. Southland Hills
77. Te Wae Wae
78. Makarewa
79. Rakiura
80. Chatham
81. Bounty
82. Antipodes
83. Auckland Is
84. Campbell
85. Macquarie

Acianthus alliance

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

Characteristics: slender, hairless plants 20–100mm tall with heart shaped leaf half way up a squarish stem. Leaf dark green, with variable amounts of purple. 1–10 green flowers with maroon labelum; colourless forms are frequent. Dorsal sepal cupped over the column, lateral sepals with pointed “tails”, petals shorter, labellum broad, cupped and pointed.

Habitat: colonies of many plants in lowland forest and tracksides.

Flowers May to October. *Distribution:* 3K, N, S, St, Ch.

Conservation status: not threatened. *Notes:* strangely rare in the southern S.Is.



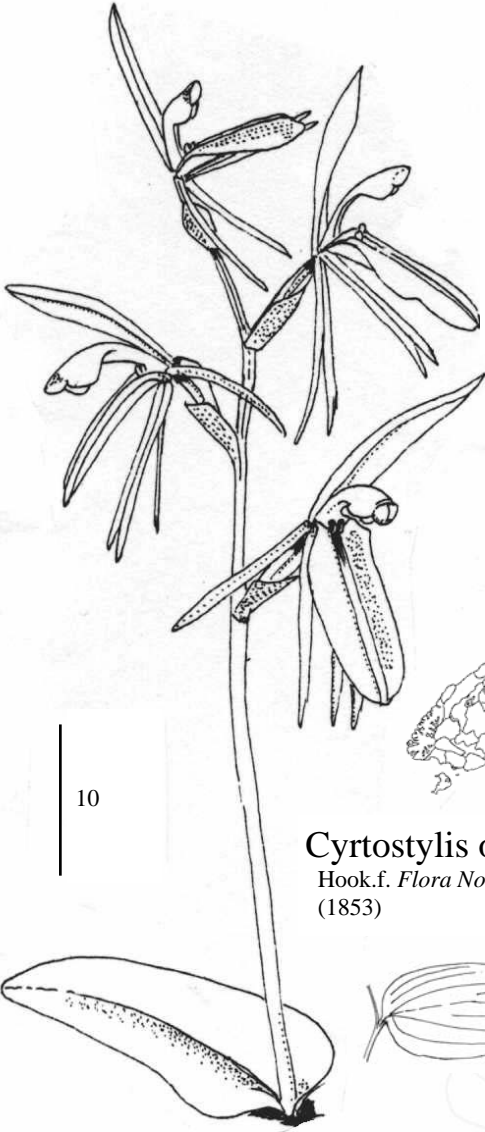
Acianthus alliance
Cyrtostylis

Characteristics: these two species are structurally similar except for the SHAPE OF THE LEAVES, oblong for *C. oblongus*, and kidney-shaped for *C. reniformis*. Leaf sessile, low on the stem, flower colourless to dull pink to maroon with flat, oblong, glistening conspicuous labellum bearing nectar droplets and two conspicuous basal calli.

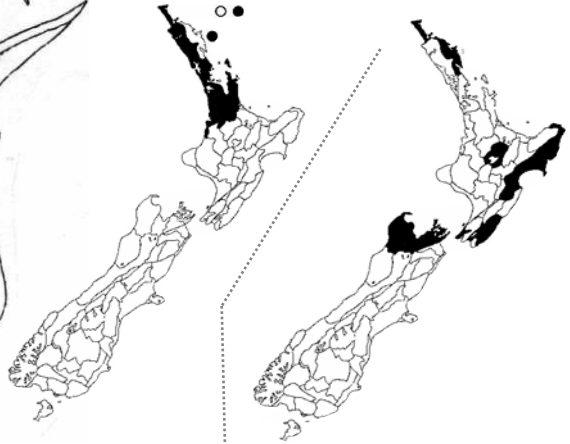
Habitat: scrub and light forest, or in the open.
Flowers September to October.

Distribution: *C. reniformis* N, S; *C. oblonga* 3K, PK, N (kauri zone).

Conservation status: neither is threatened.



Cyrtostylis oblonga
 Hook.f. *Flora Nov. Zel.* 1:246
 (1853)



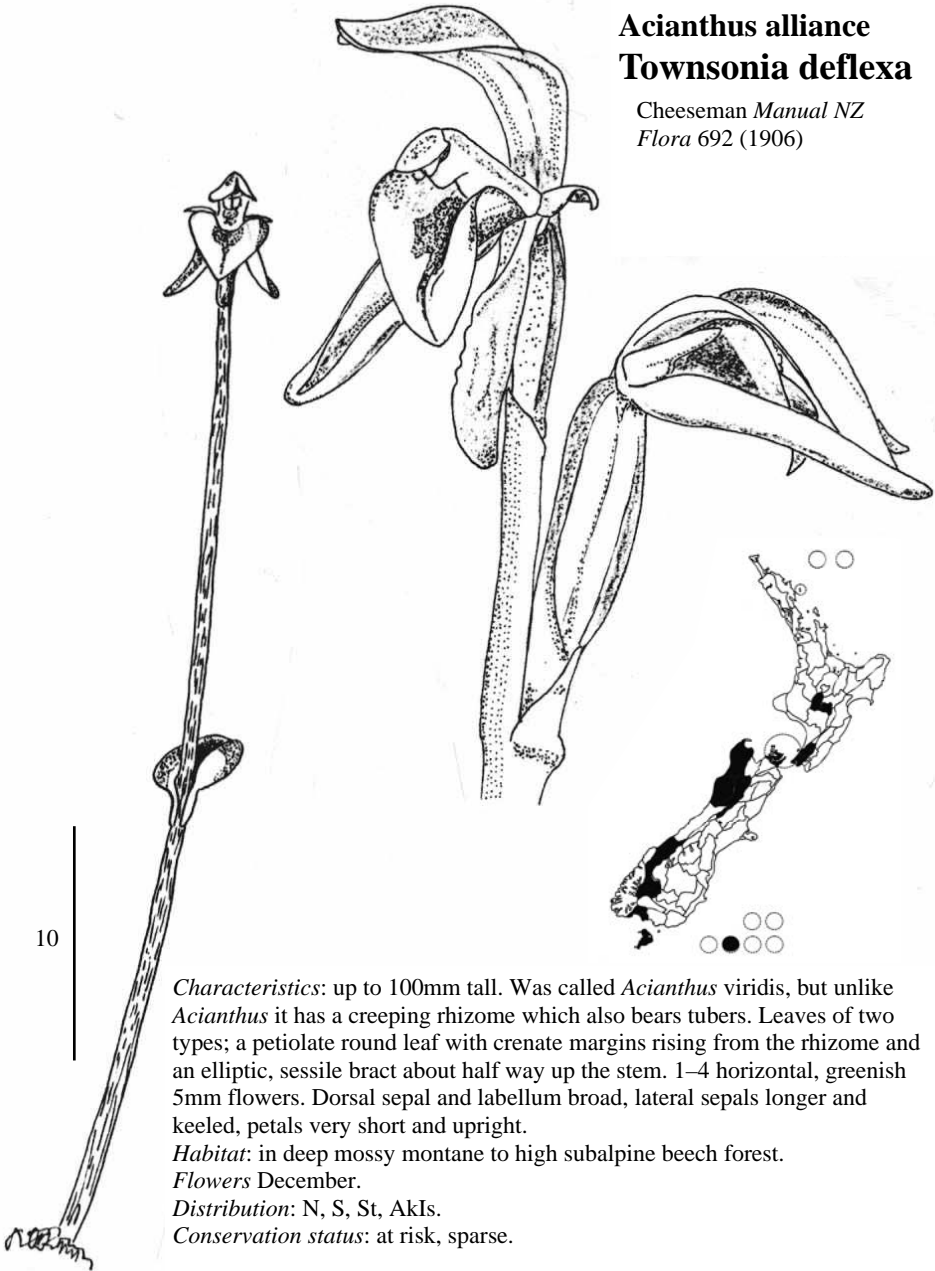
Cyrtostylis reniformis

R.Br. *Prodr.* 1:322 (1810)



**Acianthus alliance
Townsonia deflexa**

Cheeseman *Manual NZ
Flora* 692 (1906)



Characteristics: up to 100mm tall. Was called *Acianthus viridis*, but unlike *Acianthus* it has a creeping rhizome which also bears tubers. Leaves of two types; a petiolate round leaf with crenate margins rising from the rhizome and an elliptic, sessile bract about half way up the stem. 1–4 horizontal, greenish 5mm flowers. Dorsal sepal and labellum broad, lateral sepals longer and keeled, petals very short and upright.

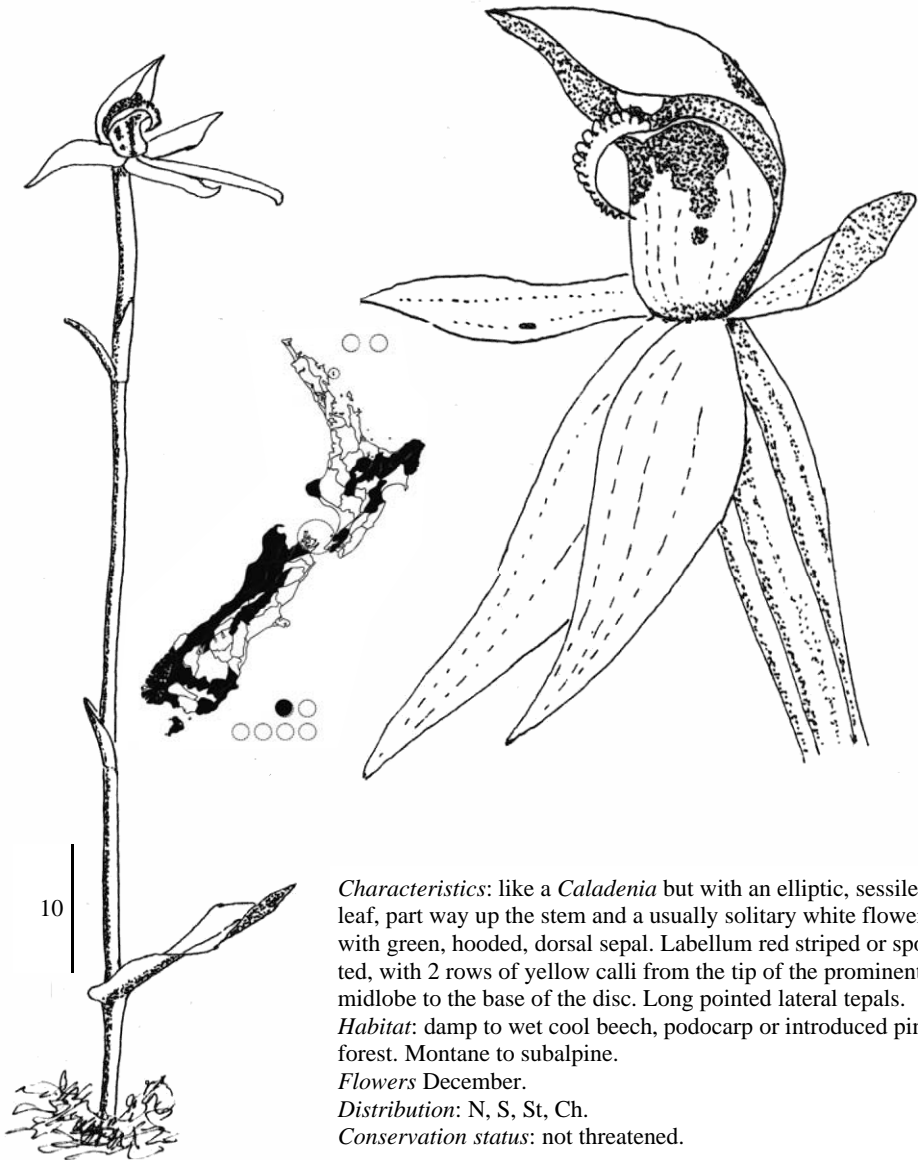
Habitat: in deep mossy montane to high subalpine beech forest.

Flowers December.

Distribution: N, S, St, AkIs.

Conservation status: at risk, sparse.

Adenochilus gracilis Hook.f. *Flora Nov. Zel.* 1:246 t56A (1853)



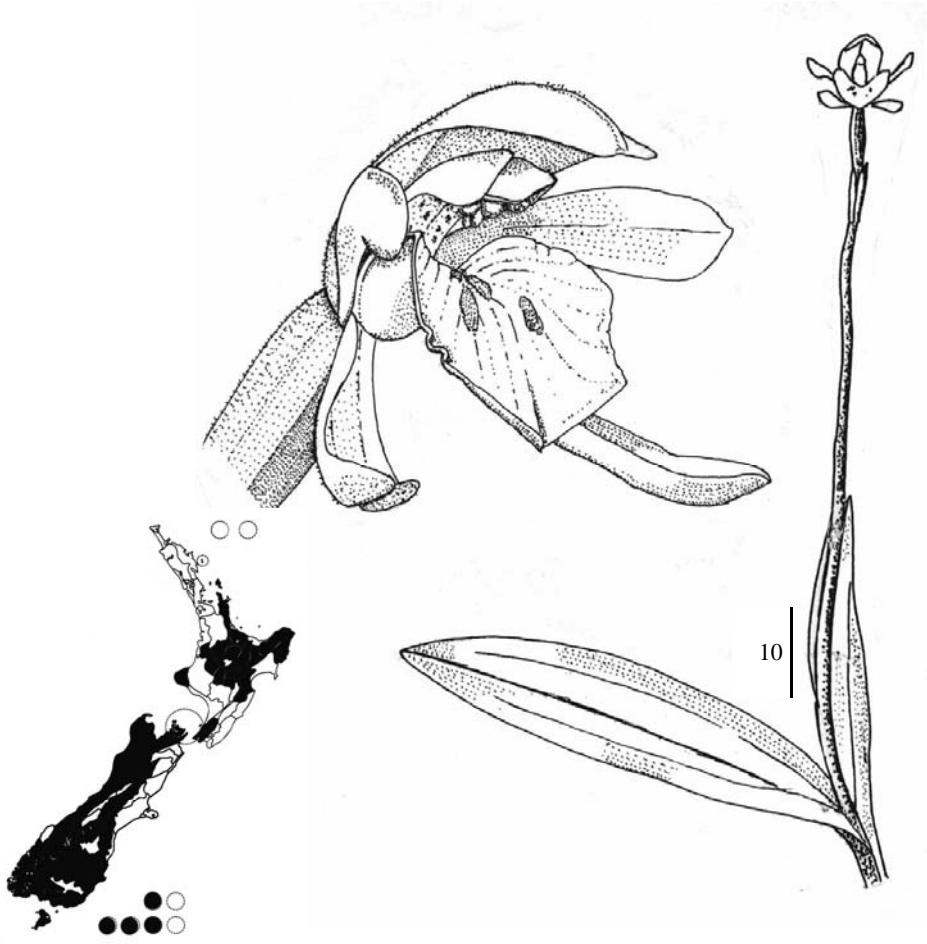
Characteristics: like a *Caladenia* but with an elliptic, sessile leaf, part way up the stem and a usually solitary white flower with green, hooded, dorsal sepal. Labellum red striped or spotted, with 2 rows of yellow calli from the tip of the prominent midlobe to the base of the disc. Long pointed lateral tepals.

Habitat: damp to wet cool beech, podocarp or introduced pine forest. Montane to subalpine.

Flowers December.

Distribution: N, S, St, Ch.

Conservation status: not threatened.



Aporostylis bifolia (Hook.f.) Rüpp & Hatch *Proc. Linn. Soc. NSW* 70:60 (1946)

Characteristics: hairy or glabrous plant, to 150mm tall with TWO UNEQUAL, elliptic or linear green or reddish basal leaves. Flower usually solitary, white with or without red glanded sepal midribs, 2cm broad, the dorsal sepal broad and arched over the column. Labellum usually broad acute but may be petaloid, narrow acute, or spatulate with variable twin rows of yellow disc calli; disc has variable yellow and brown spots. Sepals and petals narrow. Floral bract tightly sheathes up to the top of the ovary. Column tall, white, more or less brown speckled.

Habitat: montane to subalpine moss or scrub, to sea level in the south.

Flowers December to January.

Distribution: N, S, St, Ch, AkIs, C.

Conservation status: not threatened.

Bulbophyllum alliance
Adelopetalum tuberculatum

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

Characteristics: pseudobulbs in tight clumps, dried pea size, OVAL OR PEAR SHAPED, smooth at first, wrinkling with age, those bearing flowers having white, waxlike extrusions all over. Leaf \pm erect, 30 x 3mm. 2 OR 3 OFFWHITE FLOWERS WITH ORANGE LABELLUM. Seed capsule tawny with maroon, tuberculate ribs = pseudobulb in size.

Habitat: native conifer canopy (favoured host trees kauri, matai, kahikatea, totara, rimu, tawa, rewarewa). Always found with grey lichen and often with the climbing fern, *Pyrrosia eleagnifolia*. It occurs sparsely in lowland forest canopies.

Flowers April to May. *Distribution:* N, S. *Conservation status:* at risk, sparse.



Bulbophyllum alliance

Ichthyostomum pygmaeum

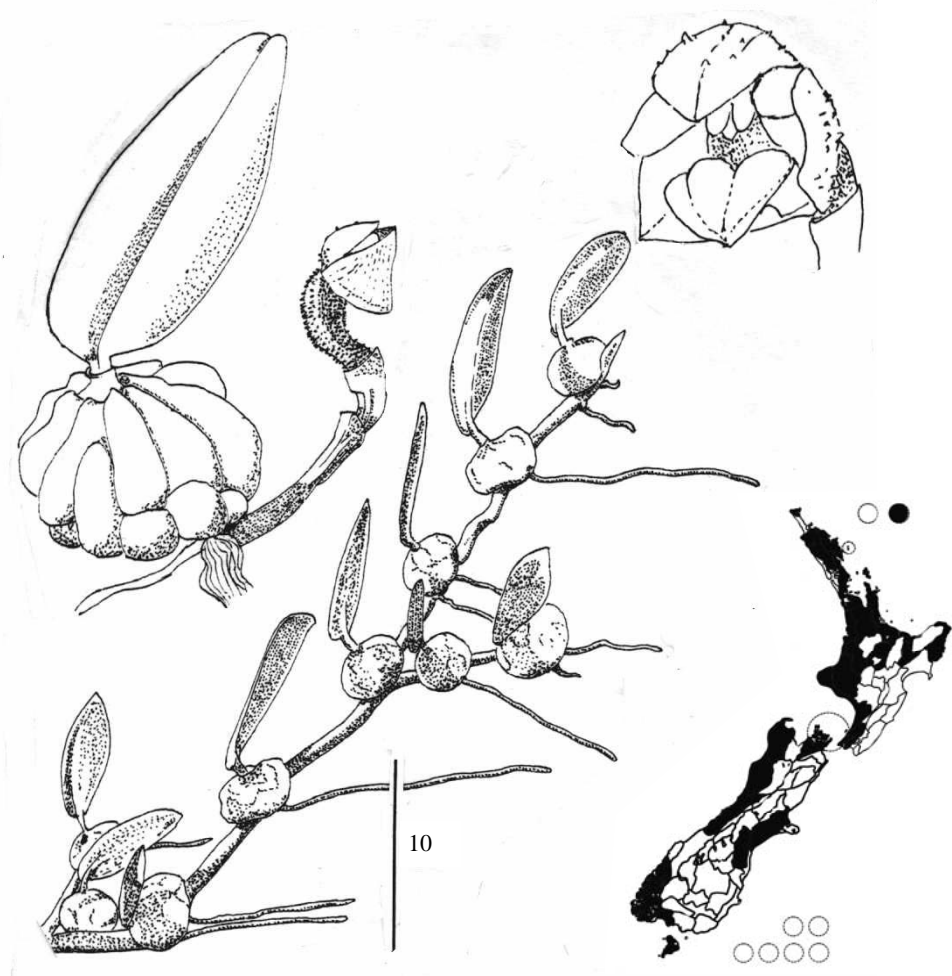
(Smith) D.L.Jones, M.A.Clem. & Molloy. *Orchadian* 13(11): 499 (2002)

Characteristics: match head sized round green pseudobulbs each topped by a single, oval leaf \pm 10mm long. FLOWERS SOLITARY, creamy green, 3mm across, remain shut or open briefly but remain attached to capsule. The capsule is unusual in that the two upper valves remain together when it opens, giving a bivalved appearance, as the upper two combined = the lowest.

Habitat: matted on tree trunks and branches, sometimes on rocks. Coastal lowland to montane.

Flowers December to January. Distribution: 3K, N, S, St.

Conservation status: not threatened.

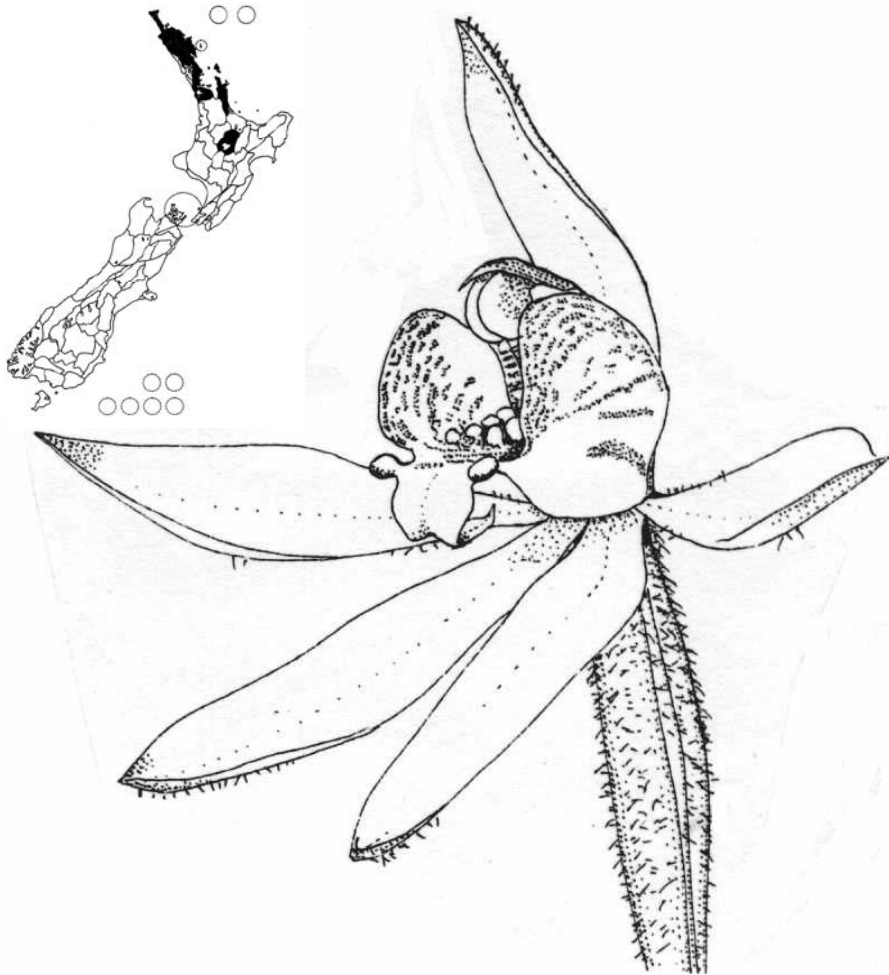


Caladenia alata R.Br. *Prodr.* 1: 324 (1810)

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

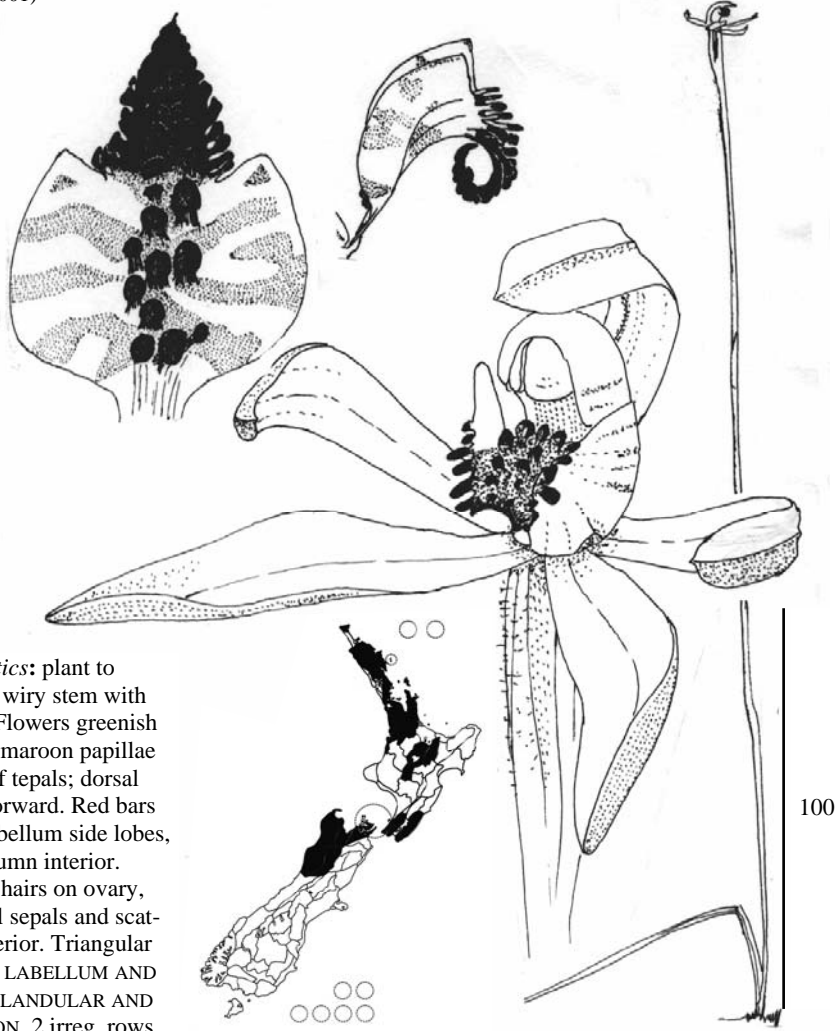
Characteristics: plants hairy, to 120mm tall. Flowers usually solitary, tepals mostly white, sometimes pale pink or pale mauve, rarely red, acute. Labellum disc, sidelobes and inner column with cerise bars. Two rows of yellow topped calli down the disc. Midlobe has a turned under orange tip and a SINGLE FLATTENED, ORANGE (VARIABLE, SOMETIMES ABSENT) MARGINAL CALLUS, at each side of the base. *Habitat:* uncommon in damp tea tree scrub.

Flowers August to October. *Distribution:* N. *Conservation status:* not threatened.



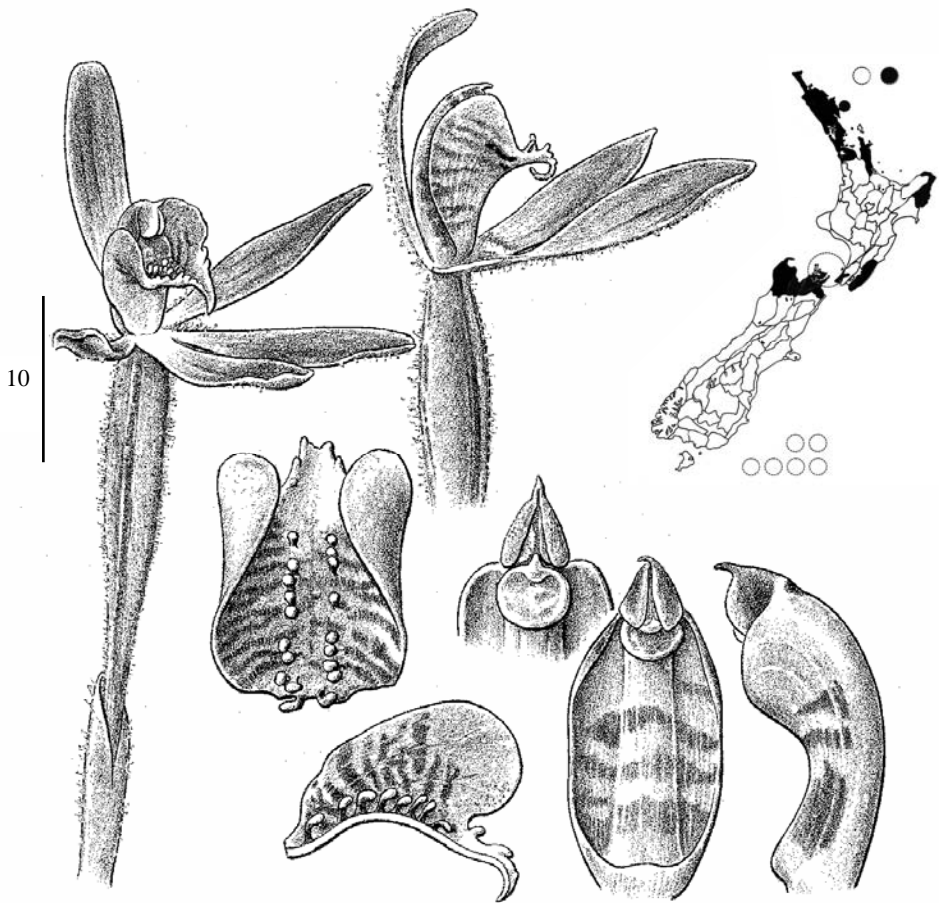
Caladenia atradenia DL Jones, Molloy & MA Clem. *Orchadian* 12 (5): 221 (1997)

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



Characteristics: plant to 300mm tall, wiry stem with short hairs. Flowers greenish yellow with maroon papillae on outside of tepals; dorsal sepal bent forward. Red bars inside the labellum side lobes, disc and column interior. Transparent hairs on ovary, inside lateral sepals and scattered on exterior. Triangular MIDLOBE OF LABELLUM AND ALL CALLI GLANDULAR AND DEEP MAROON. 2 irreg. rows

calli (not 4 as in the Australian *C. iridescens*) from tip of midlobe to base of labellum. Midlobe toothed with long marginal calli. Petals and sepals subacute. **Habitat:** usually as widely scattered small colonies, often in moderately shaded sites under scrub or second-growth forest. **Flowers** September to December. **Distribution:** N, S. **Conservation status:** at risk, sparse.



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

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

Characteristics: plant sparsely hairy, and the tepals a dark pink or carmine, shading to white at the bases; the pollinia, the tips to the 2 rows of disc calli and the midlobe are contrastingly, bright yellow. Sepals rounded; labellum red-barred white; SINUATE MIDLOBE WITH 1 OR 2 MARGINAL CALLI.

Habitat: dappled shade in damp leached soil, road and tracksides.

Flowers October to November. *Distribution:* 3K, PK, N, S. *Conservation status:* not threatened.

Notes: *C. bartlettii* was said to be a kauri-zone plant, but it has now been found in several localities in central NZ.

Caladenia chlorostyla D.L.Jones, Molloy

& M.A.Clem. *Orchadian* 12(5): 223 f.1 (1997).

Syn: *Petalochilus chlorostylus* (Hook.f.) D.L.Jones

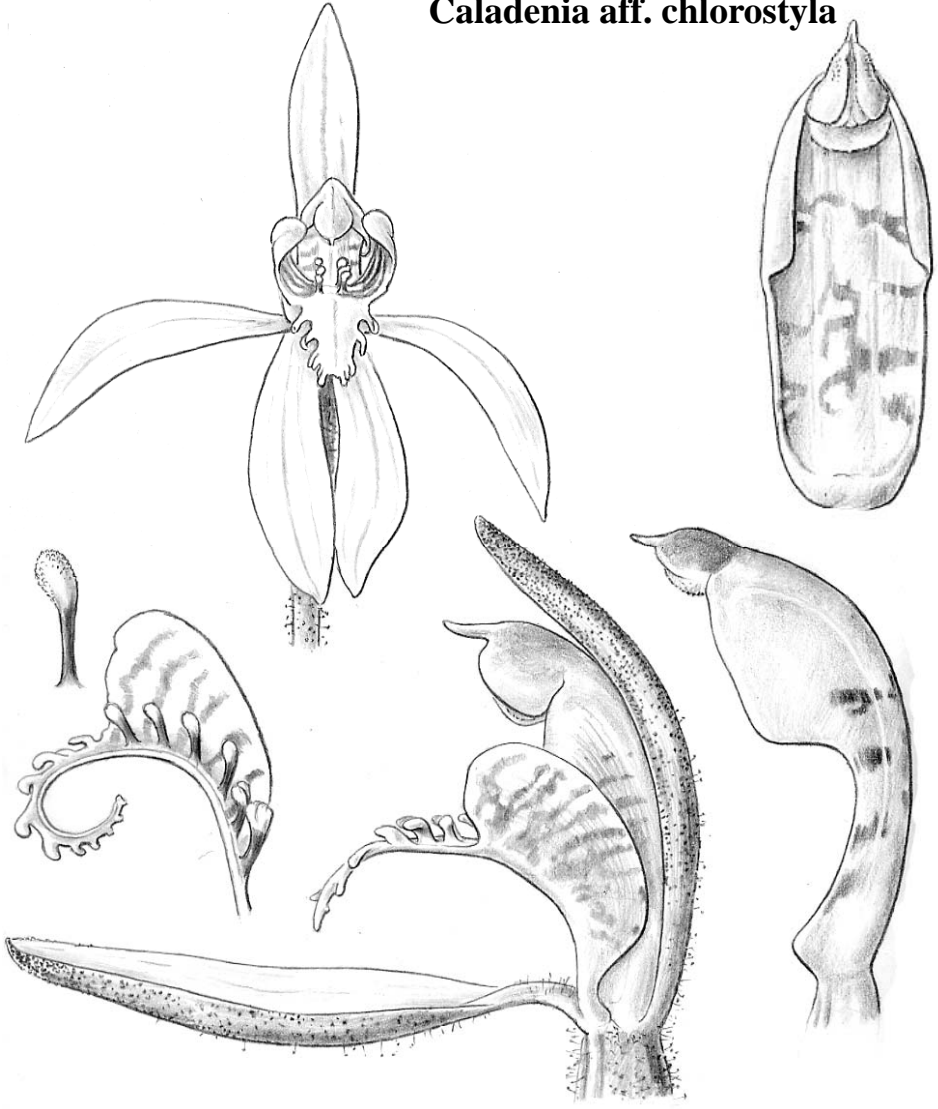
& M.A.Clem. *Orchadian* 13(9): 410 (2001)



Characteristics: plant green, hairy. 1 or 2, rarely more flowers of very pale green except for the variable red barred labellum sidelobes, disc and inner column. Two rows of white or yellow topped calli on red based yellow stalks on the lamina; NUMEROUS, USUALLY HOOKED, MARGINAL CALLI, on the white to yellow edged midlobe which may jut straight out or curl under. Tepals acute to subacute.

Habitat: common in lowland to subalpine scrub and well lit native or pine forest. *Flowers* October to December. *Distribution:* 3K, PK, N, S, St. *Conservation status:* not threatened.

Caladenia aff. chlorostyla

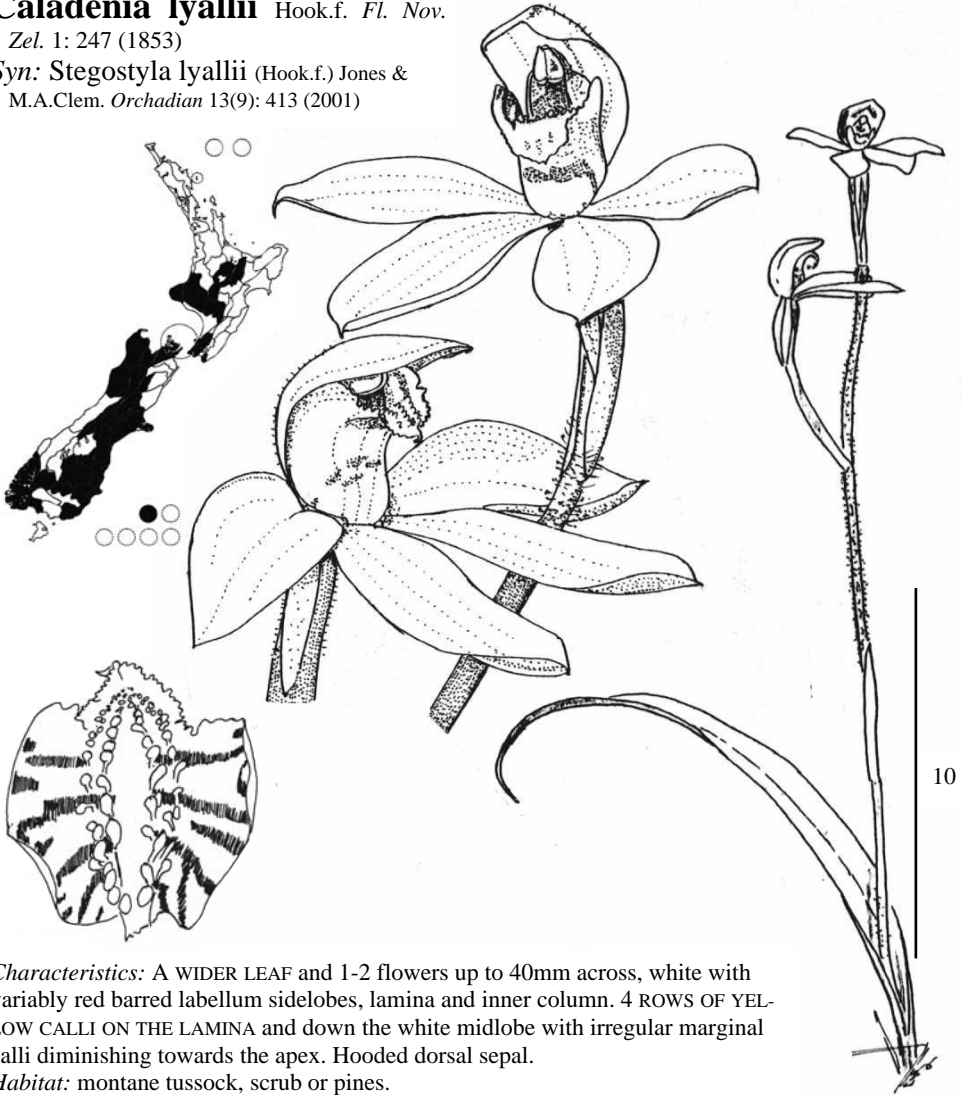


This is similar to *Caladenia chlorostyla*, but is usually a smaller plant and flower, usually covered with dark gland tipped hairs but with the outer surface of the sepals dotted with SESSILE (usually dark) GLANDS. It flowers LATER than *C. chlorostyla*. Fresh flowers may have a hint of green but mature flowers are white or cream.

Caladenia lyallii Hook.f. *Fl. Nov.*

Zel. 1: 247 (1853)

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



Characteristics: A WIDER LEAF and 1-2 flowers up to 40mm across, white with variably red barred labellum sidelobes, lamina and inner column. 4 ROWS OF YELLOW CALLI ON THE LAMINA and down the white midlobe with irregular marginal calli diminishing towards the apex. Hooded dorsal sepal.

Habitat: montane tussock, scrub or pines.

Flowers November to December.

Distribution: N, S, St.

Conservation status: not threatened.

Notes: possibly a complex of several taxa; large specimens with 6 rows of calli and toothed anterior margins of the lateral lobes resemble the Australian *C. alpina*; small central N.Is., and northern S.Is. plants may be separate taxa.

Caladenia nothofageti D.L.Jones, Molloy & M.A.Clem. *Orchadian* 12 (5): 226 f.1 (1997)

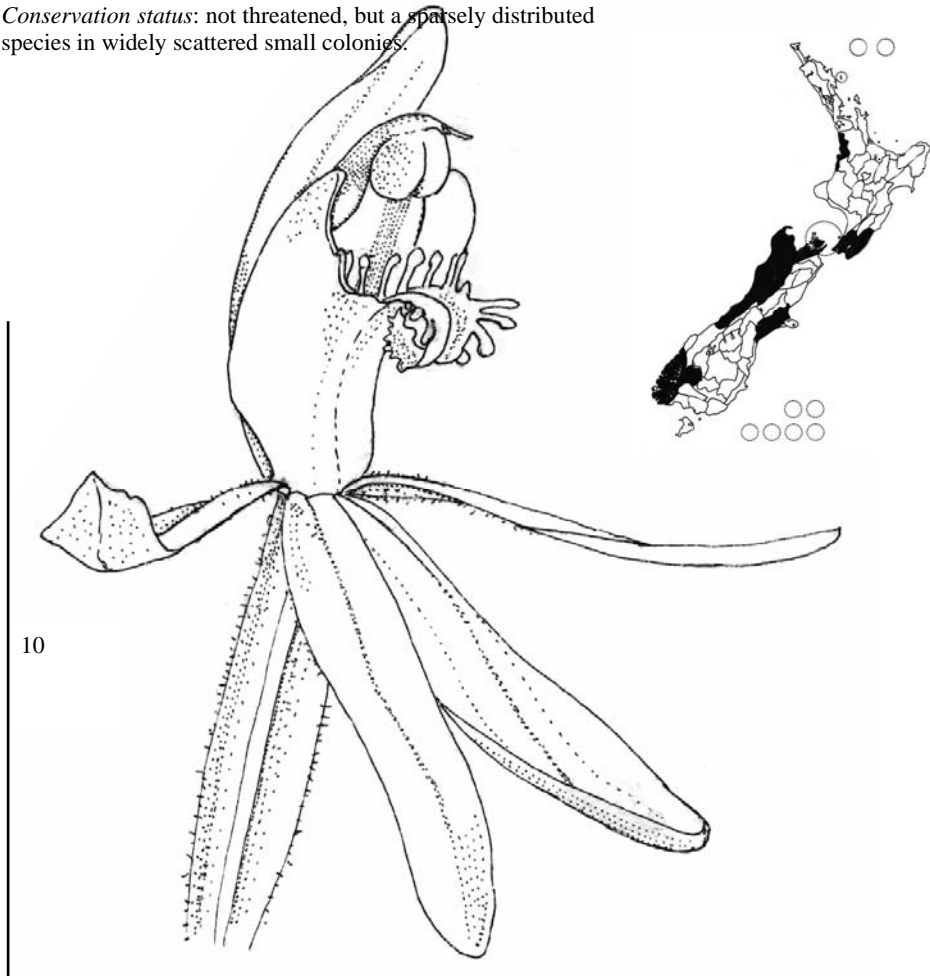
Syn: *Petalochilus nothofageti* (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones & M.A.Clem. *Orchadian* 13(9): 410 (2001)

Characteristics: plant 100mm tall, less hairy than most *Caladenia*. Pale green bud opens to a white flower (sometimes with a very faintly pink barred labellum) with a pale green top to the column and creamy, clubbed calli in 2 rows down the disc and flat marginal calli tooting the long, curled under or straight midlobe.

Habitat: montane, well lit scrub and beech (*Nothofagus*) forest.

Flowers December. *Distribution:* N, S.

Conservation status: not threatened, but a sparsely distributed species in widely scattered small colonies.



Caladenia aff. pusilla

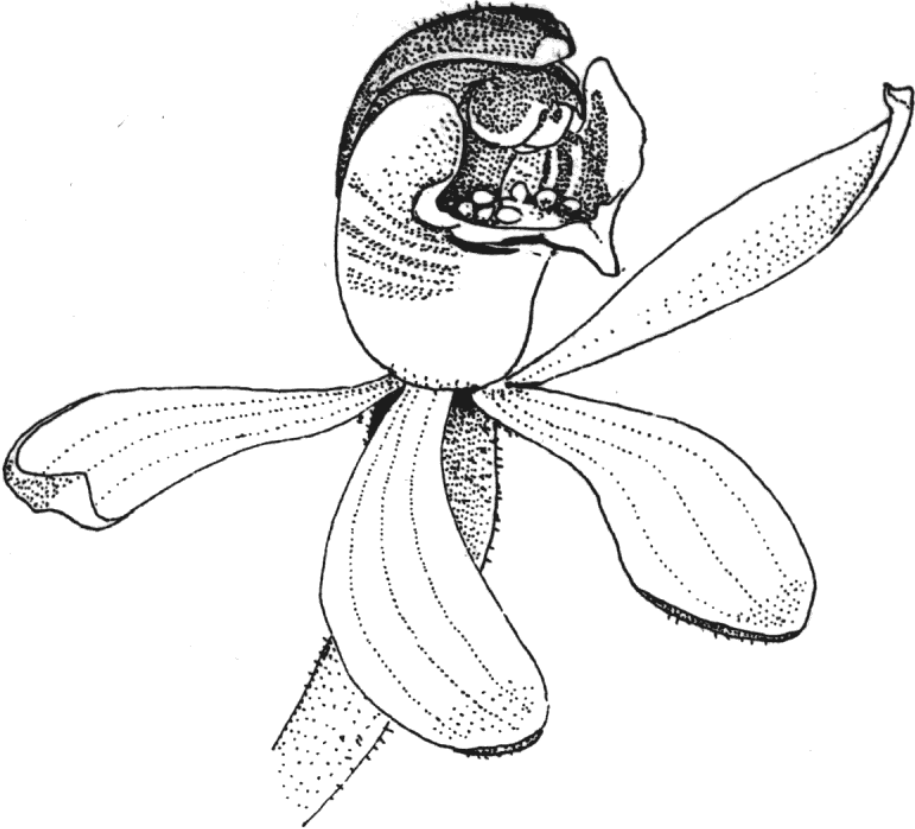
Characteristics: tiny plant <100mm tall, linear leaf, one flower, <10mm diameter, pale pink darkens to midpink towards the rounded ends of the tepals. Labellum has dark maroon bands, and an EQUILATERAL CRENULATE TRIANGULAR MIDLOBE, often pointing straight out. Dorsal sepal arches over column, but is much shorter than lateral sepals. Labellum has two rows of clubbed yellow calli.

Habitat: submontane, well lit scrub.

Flowers: December.

Distribution: a small colony at Kaitoke near Wellington, also Whangarei, Te Pahi, Kaimaumu, Taranaki.

Notes: this is poorly understood plant is strikingly similar to the Australian *C. pusilla*, and may be a vagrant.



Caladenia variegata Col. *Trans. NZI.* 17: 248 (1885)

Syn: *Petalochilus variegatus* (Col.) D.L.Jones & M.A.Clem.

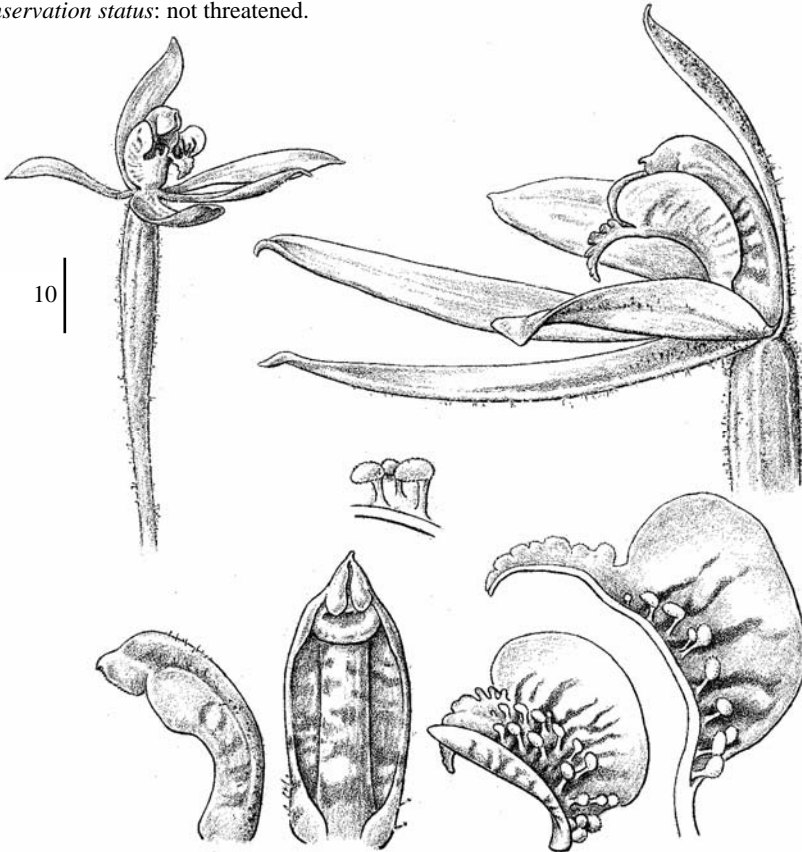
Orchadian 13(9): 410 (2001)

Characteristics: hairy plant to 180mm tall, dark stem and green ovary. One or rarely 2 flowers of pale pink with a greenish tinge in the dorsal sepal. Back of column bright green with pink glandular hairs and pink anther, inside striped red. Labellar disc and sidelobes striped with red. 2 rows of yellow BROAD-TOPPED calli down the lamina, sometimes with extra scattered calli to each side; midlobe white with yellow crenulate edges and 0-2 basal, marginal calli on each side. Lateral petals pointed, sickle-shaped, sepals obtuse sometimes with a little point.

Habitat: montane in well lit exotic pine and native forest.

Flowers December. *Distribution:* N. S.

Conservation status: not threatened.



Calochilus aff. herbaceus

Characteristics: 300–600mm tall, up to 5 greenish yellow flowers with red striped petals; at labelum base, 2 VIOLET BLUE, NAKED RAISED RIDGES. Lacinated towards apex, beard purple: column wings wide with a dark basal gland (“eye”) each side. One colony has no red pigment.

Habitat: well lit tracksides, in gumland scrub and swampy ground.

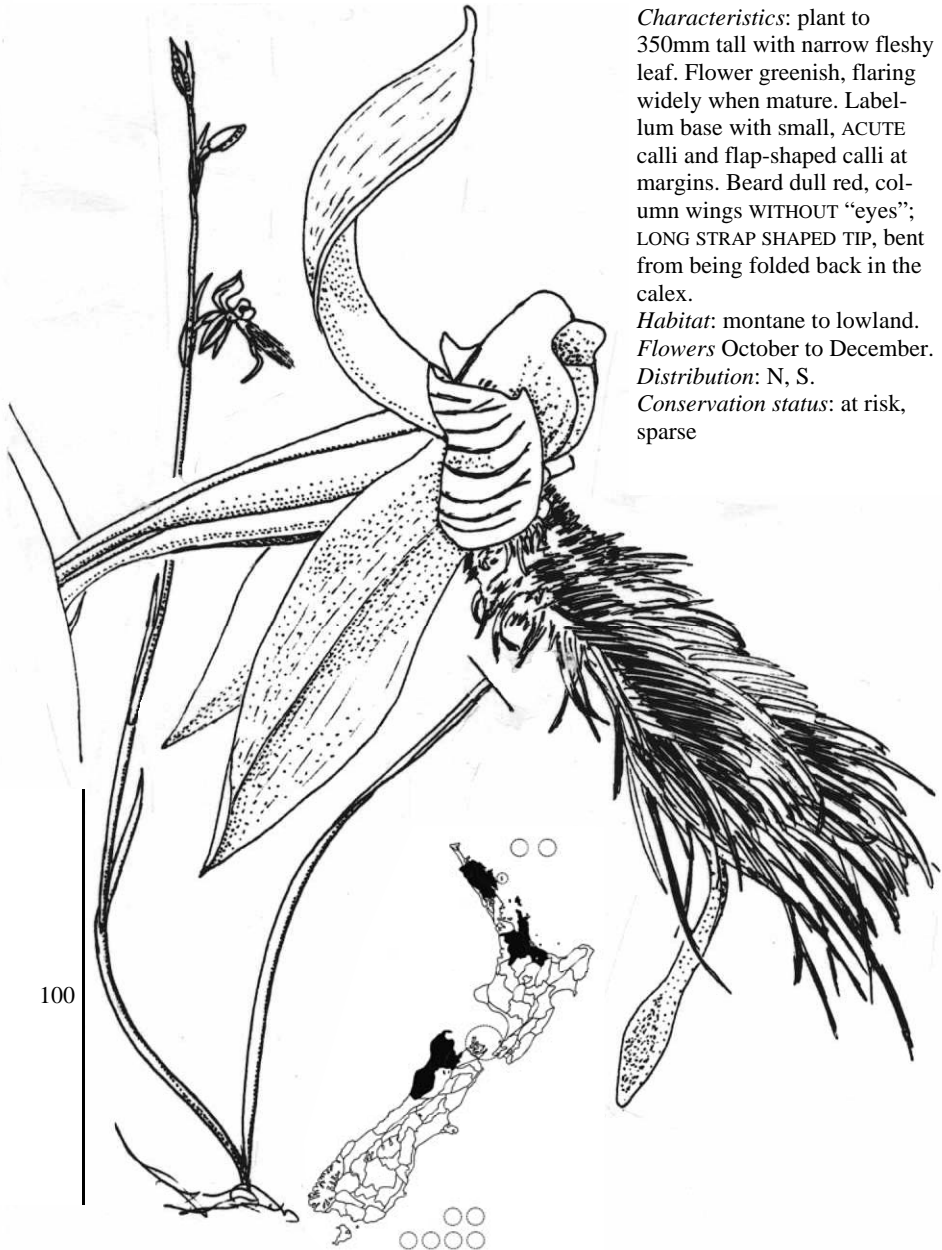
Flowers October to December. *Distribution:* N.

Conservation status: acutely threatened; nationally critical.

Notes: there is some doubt about the identity of the NZ plant – it has been identified with *C. herbaceus* and *C. campestris*.



Calochilus paludosus R.Br. *Prodr.* 1:320 (1810)



Characteristics: plant to 350mm tall with narrow fleshy leaf. Flower greenish, flaring widely when mature. Label- lum base with small, ACUTE calli and flap-shaped calli at margins. Beard dull red, col- umn wings WITHOUT “eyes”; LONG STRAP SHAPED TIP, bent from being folded back in the calyx.

Habitat: montane to lowland.

Flowers October to December.

Distribution: N, S.

Conservation status: at risk, sparse

Calochilus robertsonii Benth. *Flora Austr.* 6:315 (1873)

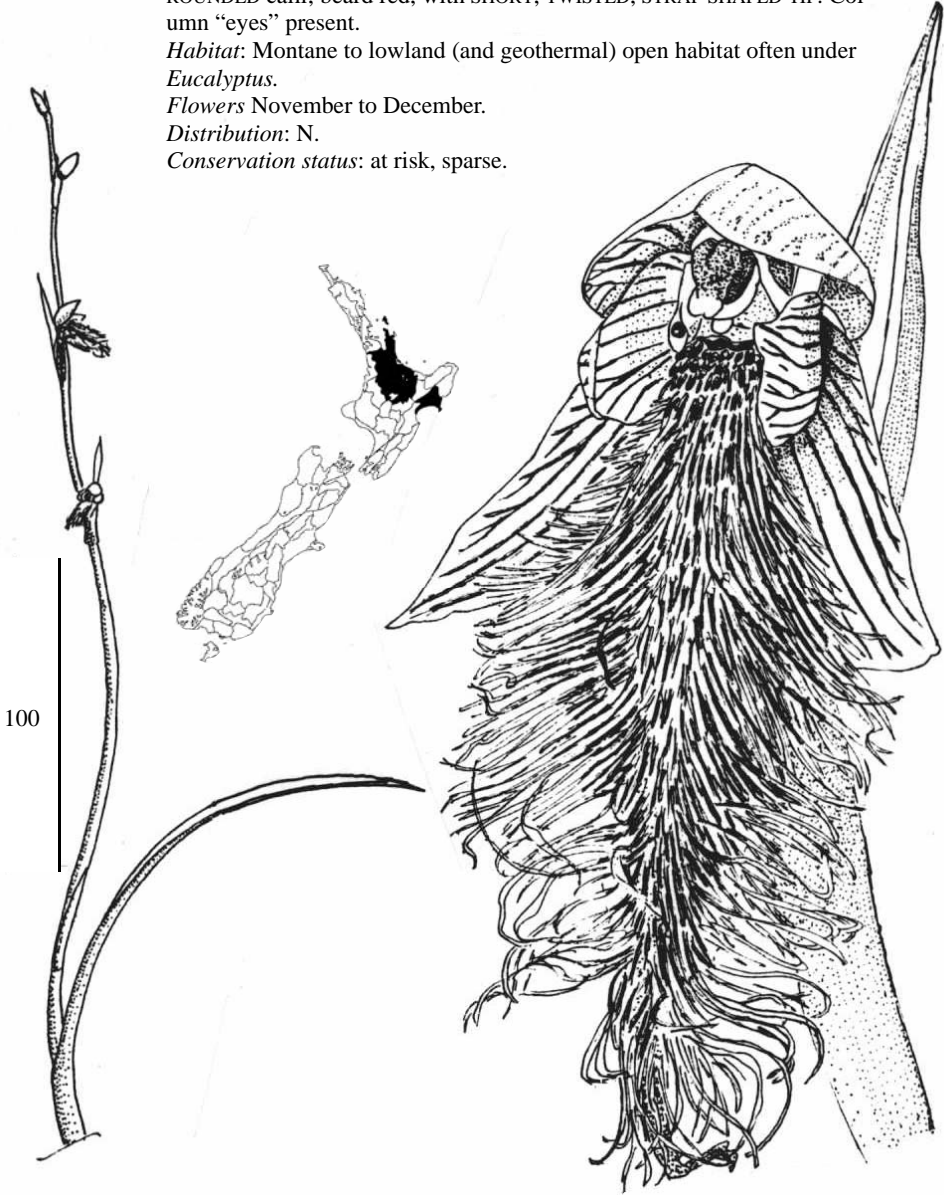
Characteristics: wider leaf than *C. paludosus*, labellum base with short ROUNDED calli; beard red, with SHORT, TWISTED, STRAP SHAPED TIP. Column “eyes” present.

Habitat: Montane to lowland (and geothermal) open habitat often under *Eucalyptus*.

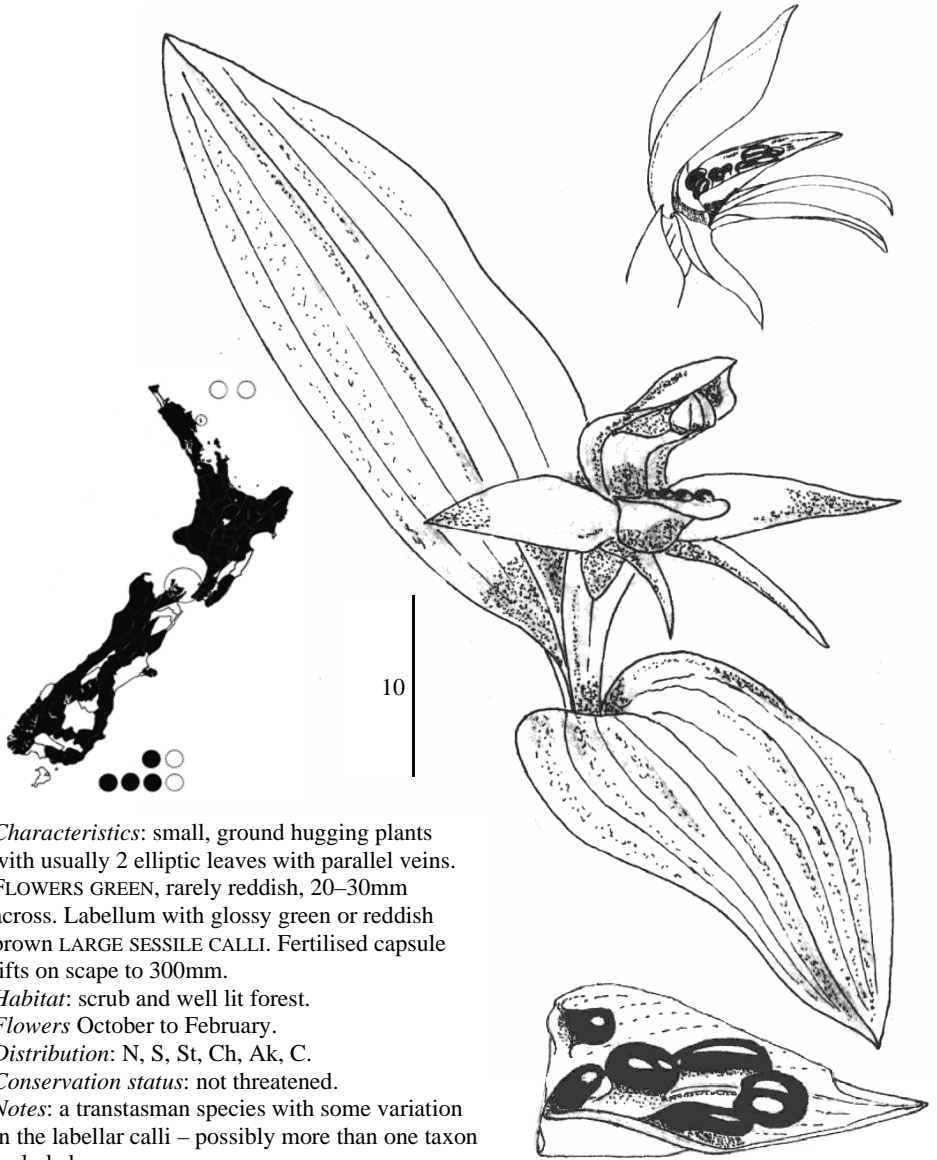
Flowers November to December.

Distribution: N.

Conservation status: at risk, sparse.



Chiloglottis cornuta Hook.f. *Flora Antarctica* 1: 69 (1844)



Characteristics: small, ground hugging plants with usually 2 elliptic leaves with parallel veins. FLOWERS GREEN, rarely reddish, 20–30mm across. Labellum with glossy green or reddish brown LARGE SESSILE CALLI. Fertilised capsule lifts on scape to 300mm.

Habitat: scrub and well lit forest.

Flowers October to February.

Distribution: N, S, St, Ch, Ak, C.

Conservation status: not threatened.

Notes: a transtasman species with some variation in the labellar calli – possibly more than one taxon included.

Chiloglottis trapeziformis R.D.Fitzg. *Austr. Orch.* 1(3): t9 (1877)

Characteristics: Red/green peduncle and UPFACING FLOWER; to 120mm tall with leaf margins smooth and not usually wavy. Pale column; kite shaped labellum with DARK, TUBERCULATE TO STALKED DISC CALLI, not extending to the margins and leaving labellar tip bare; variable small pink calli nearest column.

Flowers December. *Distribution:* N: identified near Levin in 2001, under *Pinus radiata*, but now transplanted to Iwitahi and elsewhere.

Conservation status: non-resident native, vagrant.

Notes: sets seed occasionally in NZ (no natural pollinator), spreads vegetatively. Past records of *C. formicifera* in NZ have been identified as *C. trapeziformis*, but debate continues.



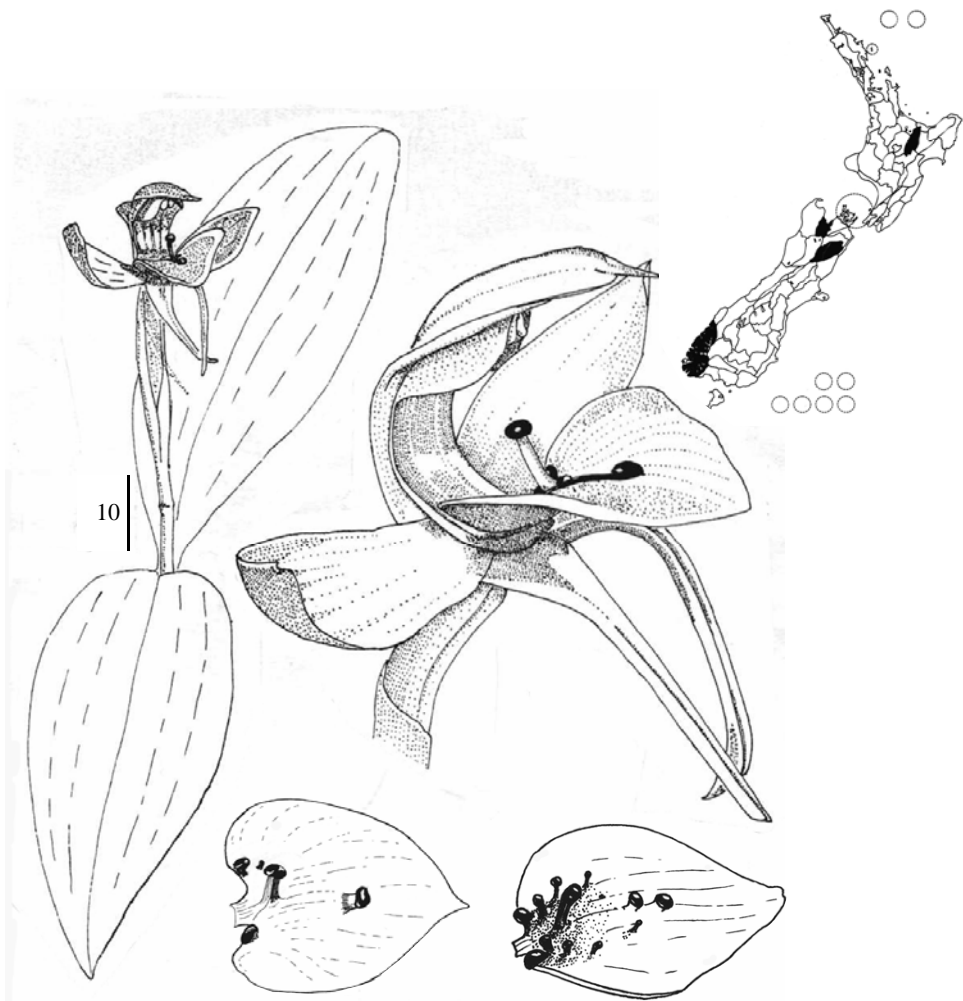
Chiloglottis valida D.L.Jones. *Austr. Orch. Res.* 2: 43 (1991)

Syn: *Simpliglottis valida* (D.L.Jones) D.L.Szlachetko *Polish Bot. J.* 469 (10): 13 (2001)

Characteristics: plant larger than *C. cornuta*, leaves wider and longer. Greenish flowers darken to purple/brown. Labellum has ONE STALKED, BLACK TOPPED CALLUS WITH ONE TO SEVERAL SESSILE CALLI (sometimes on short stalks) either side and in front.

Habitat: in pine needle debris at Iwitahi and Hanmer; under beech, Richmond Range, Marlborough and Te Anau. Montane to subalpine.

Flowers October to December. *Distribution:* N, S. *Conservation status:* non-resident native, vagrant. *Notes:* will not set seed in NZ (no natural pollinator), spreads vegetatively. Pattern of labellar calli may depend on clone.



Corybas alliance

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

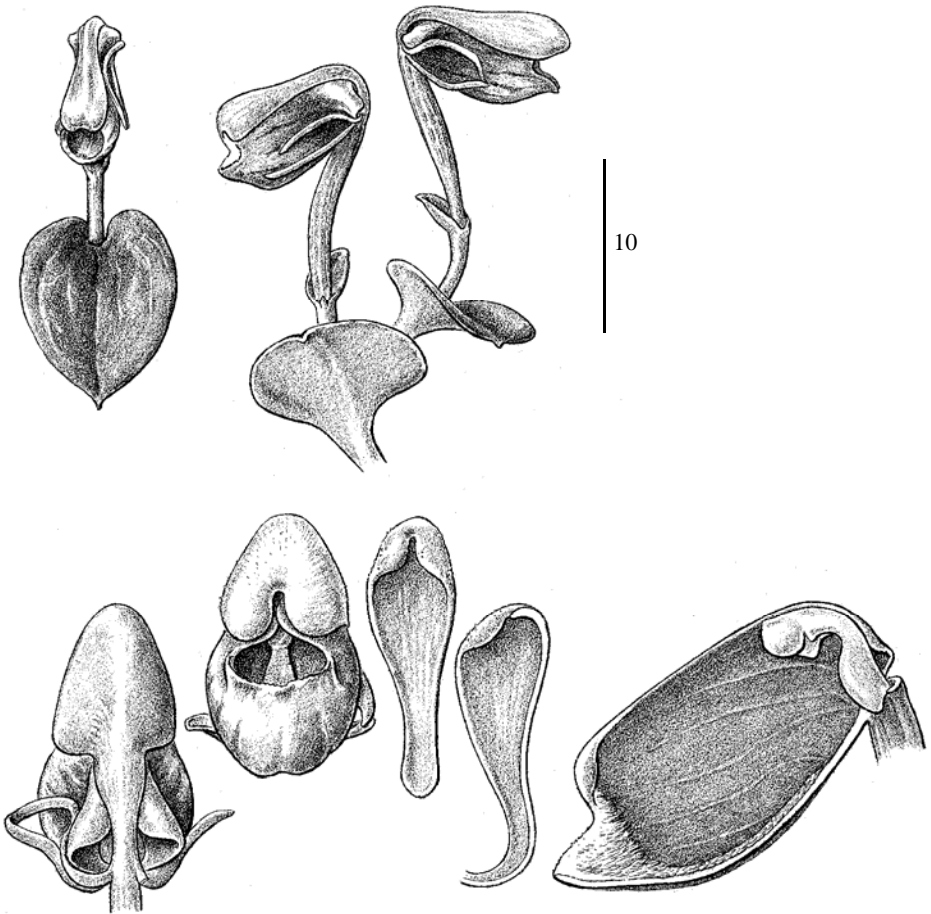
Characteristics: lateral sepals and petals shorter than labellum, TIP OF DORSAL SEPAL DEEPLY CLEFT; labellar calli confined to swollen tissue close to apex and along raised midline.

Habitat: confined to *Empodisma* bogs in the Waikato.

Flowers August to November. *Distribution:* N.

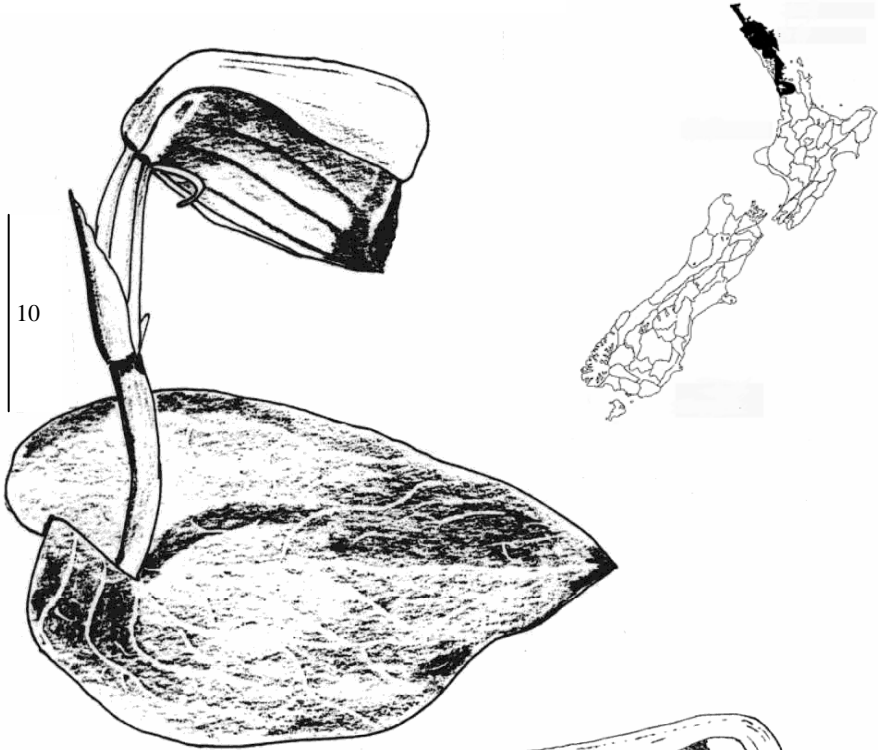
Conservation status: acutely threatened, nationally critical.

Notes: close to Australian *A. fordhamii*, occasional fires may be necessary for its survival. Upright column and short tepals separate *Anzybas* from *Nematoceras*.



Corybas alliance

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



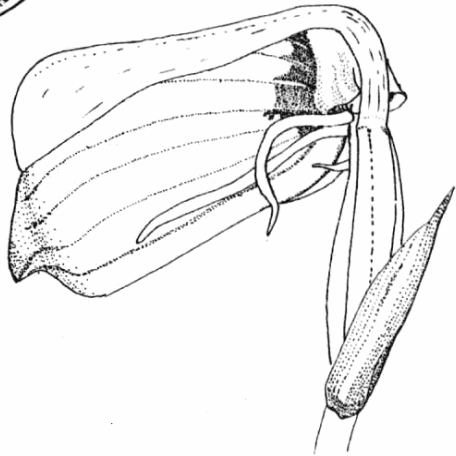
Characteristics: similar to *C. carsei* but larger, LACKING THE CLEFT TIP TO THE DORSAL SEPAL. Pink or white inward facing calli along the raised labellum midline, short near apex, but much longer towards column, and ceasing abruptly 3mm from it.

Habitat: Scrub and light forest.

Flowers June to August.

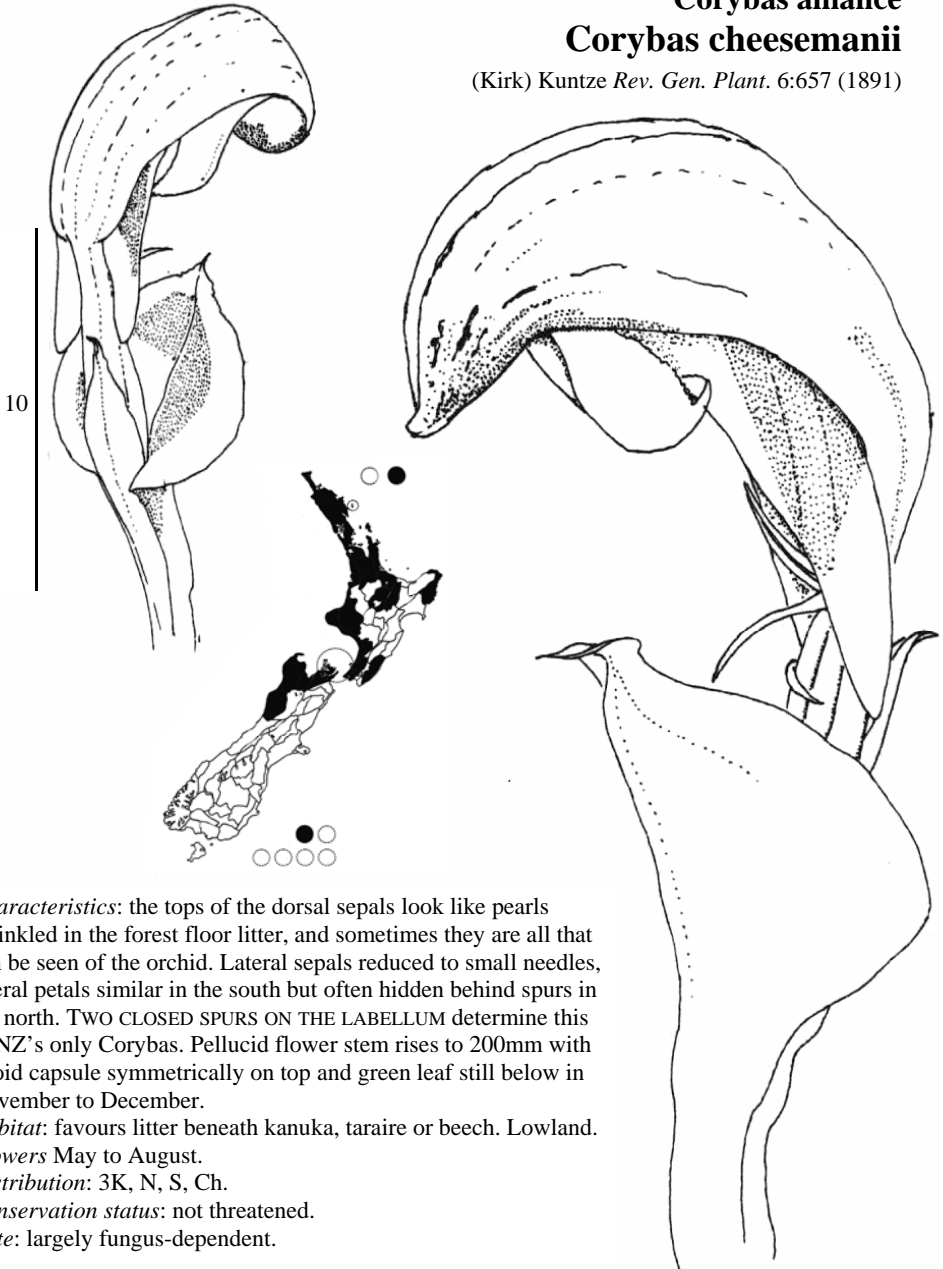
Distribution: N.

Conservation status: at risk, sparse.



Corybas alliance
Corybas cheesemanii

(Kirk) Kuntze *Rev. Gen. Plant.* 6:657 (1891)



Characteristics: the tops of the dorsal sepals look like pearls sprinkled in the forest floor litter, and sometimes they are all that can be seen of the orchid. Lateral sepals reduced to small needles, lateral petals similar in the south but often hidden behind spurs in the north. TWO CLOSED SPURS ON THE LABELLUM determine this as NZ's only *Corybas*. Pellucid flower stem rises to 200mm with ovoid capsule symmetrically on top and green leaf still below in November to December.

Habitat: favours litter beneath kanuka, taraire or beech. Lowland.

Flowers May to August.

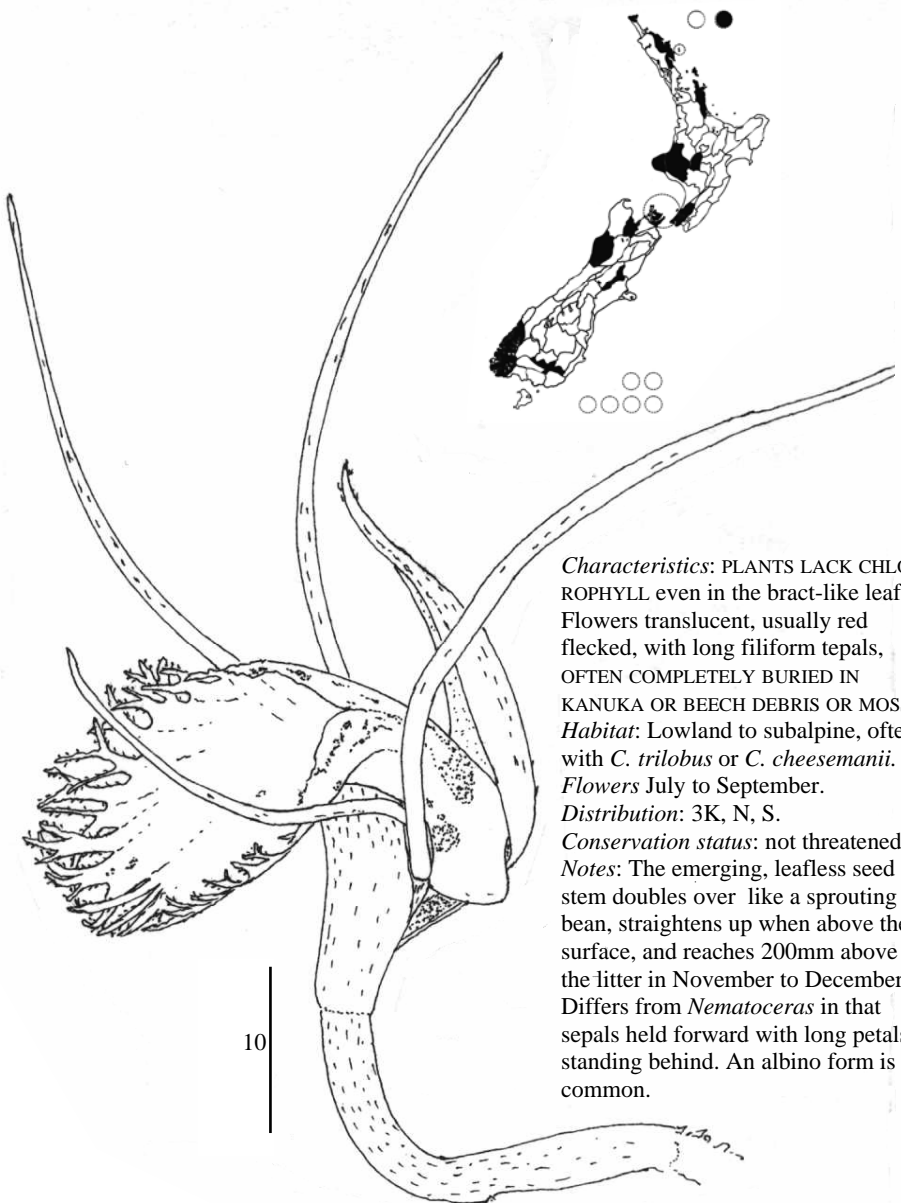
Distribution: 3K, N, S, Ch.

Conservation status: not threatened.

Note: largely fungus-dependent.

Corybas alliance

Molloybas cryptanthus (Hatch) D.L.Jones & M.A.Clem. *Orchadian* 13(10): 448



Characteristics: PLANTS LACK CHLOROPHYLL even in the bract-like leaf. Flowers translucent, usually red flecked, with long filiform tepals, OFTEN COMPLETELY BURIED IN KANUKA OR BEECH DEBRIS OR MOSS.

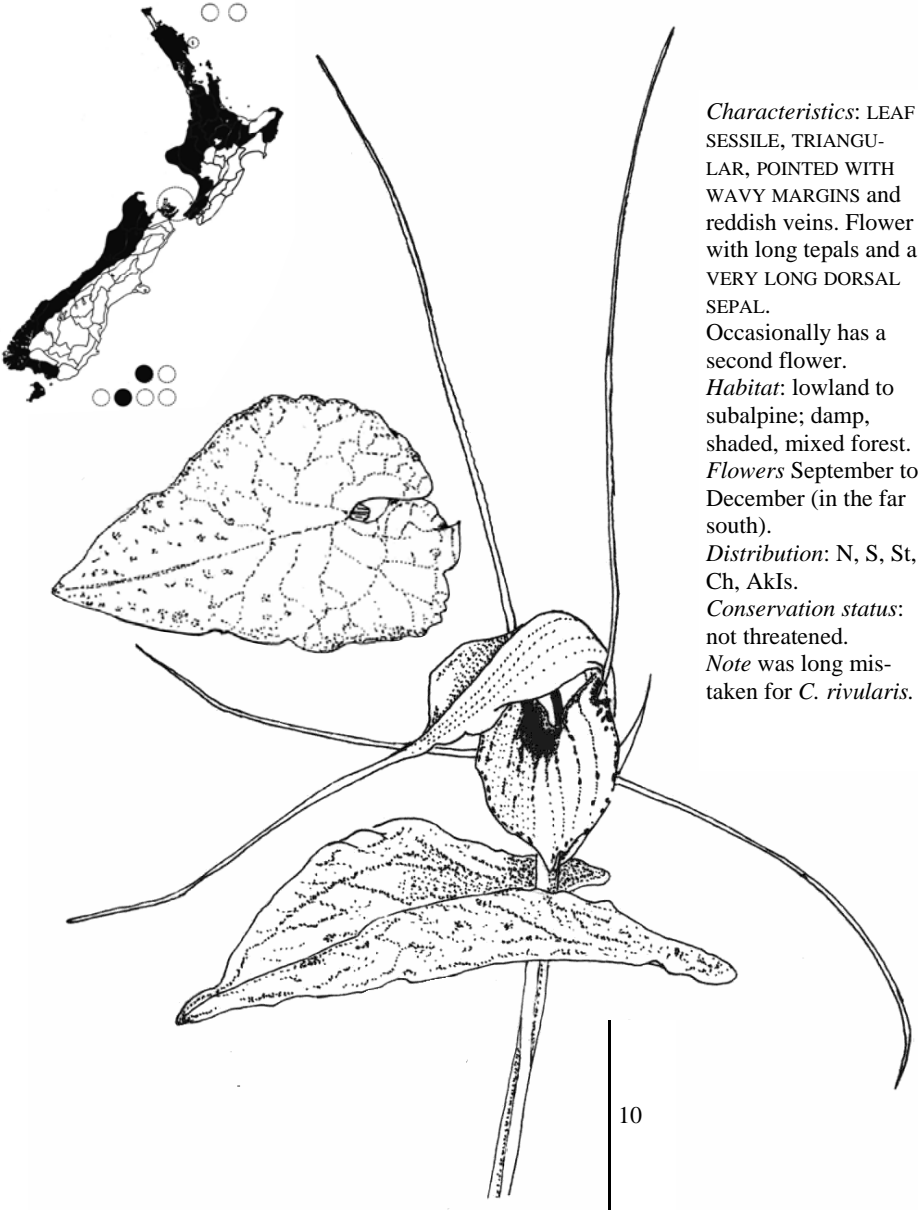
Habitat: Lowland to subalpine, often with *C. trilobus* or *C. cheesemanii*.

Flowers July to September.

Distribution: 3K, N, S.

Conservation status: not threatened.
Notes: The emerging, leafless seed stem doubles over like a sprouting bean, straightens up when above the surface, and reaches 200mm above the litter in November to December. Differs from *Nematoceras* in that sepals held forward with long petals standing behind. An albino form is common.

Corybas alliance: *Nematoceras acuminatum* (M.A.Clem. & Hatch)
Molloy,



Characteristics: LEAF SESSILE, TRIANGULAR, POINTED WITH WAVY MARGINS and reddish veins. Flower with long tepals and a VERY LONG DORSAL SEPAL.

Occasionally has a second flower.

Habitat: lowland to subalpine; damp, shaded, mixed forest.

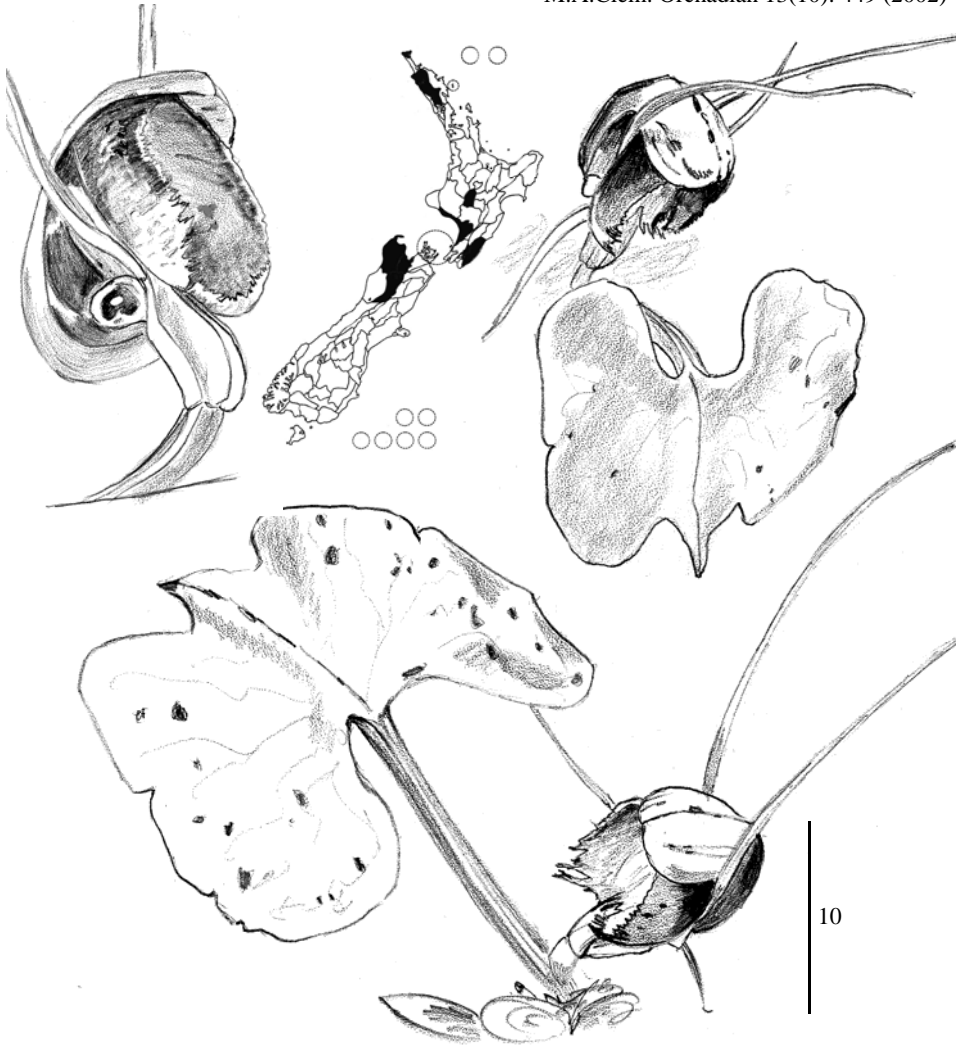
Flowers September to December (in the far south).

Distribution: N, S, St, Ch, AkIs.

Conservation status: not threatened.

Note was long mistaken for *C. rivularis*.

Corybas alliance: *Nematoceras hypogaeum* (Col.) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13(10): 449 (2002)



Characteristics: leaf kidney shaped, MUCH WIDER THAN LONG, purple-tinged silver beneath. Flower tiny, on short, threadlike stem, often hidden in the moss or below the beech leaf litter, with JAGGED AND INCURVED EDGES TO THE LABELLUM. *Habitat:* around the bases of beech trees, or swamp. *Flowers* August and September.

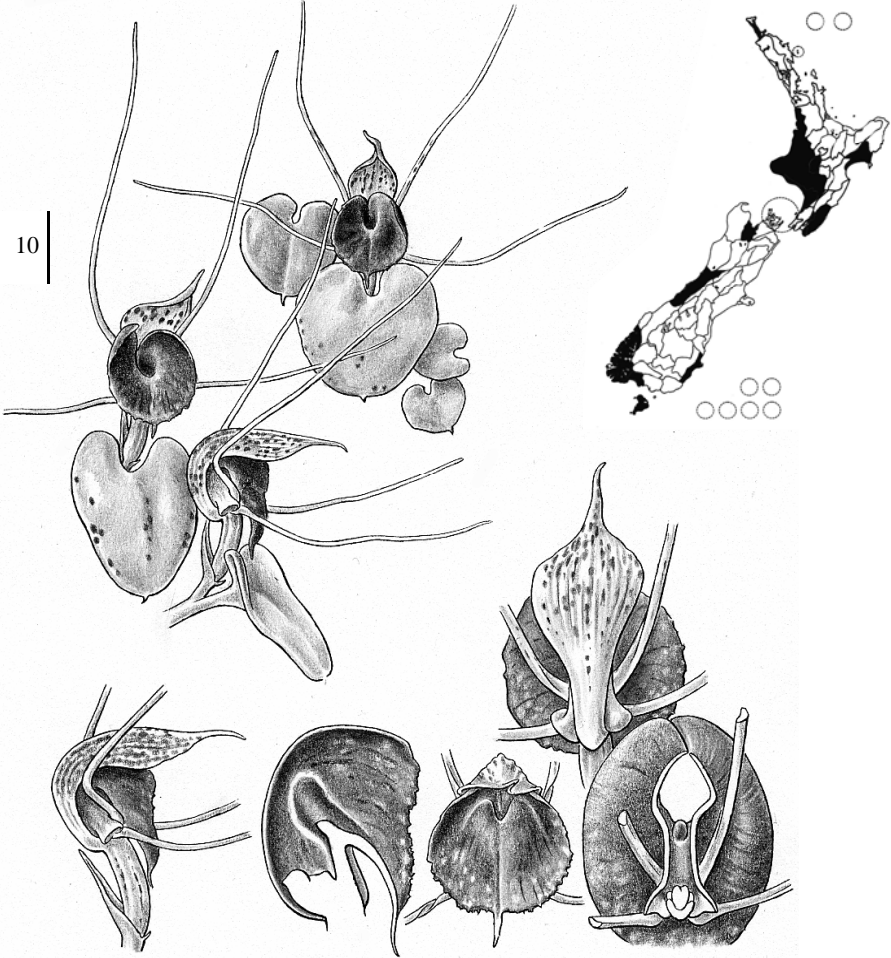
Distribution: N (Waikato, Hunuas, Wairarapa). Lowland to montane.

Notes: very similar to *N. triloba* s.s. but the ragged edge of the labellum seems to distinguish it.

Corybas alliance

Nematoceras iridescens (Irwin & Molloy) Molloy, D.L.Jones & M.A.Clem.

Orchadian 13(10): 449 (2002)



Characteristics: stalked round leaf, usually spotted with dull purple. WIDELY FLARING LABEL-LUM OF DARKEST RED, SHARPLY DEFLEXED AS SHOWN WITH A SMALL GLAND VISIBLE IN THE “THROAT”.

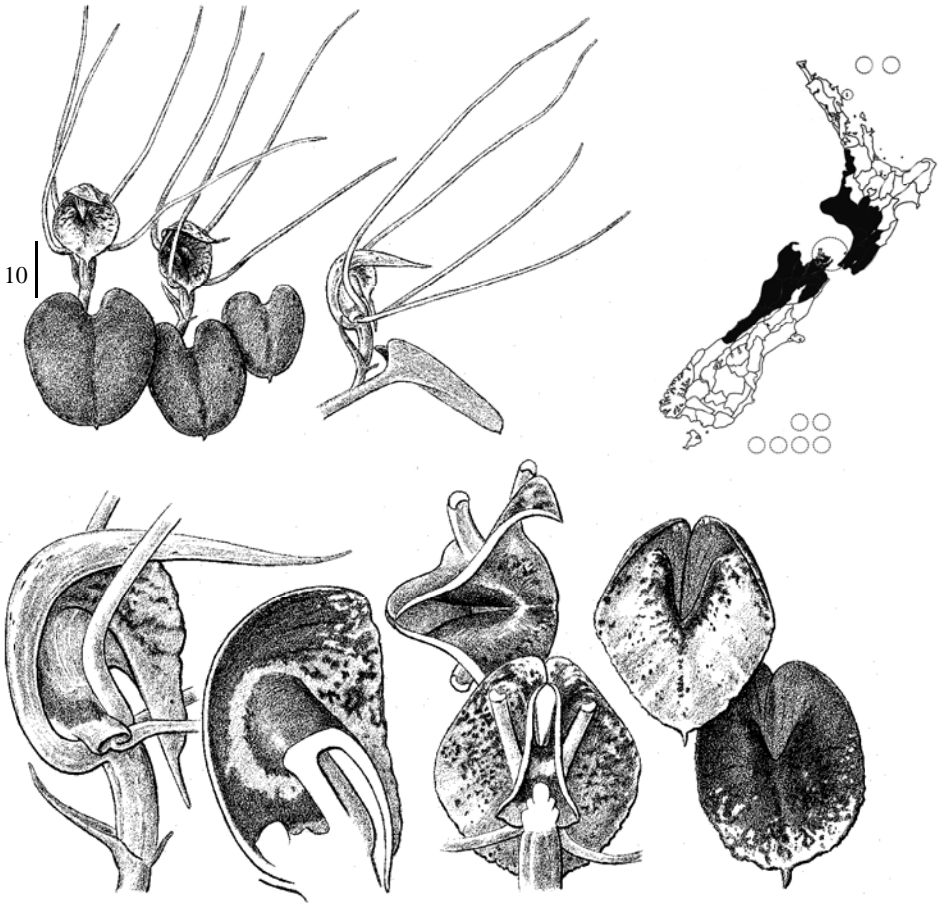
Habitat: This species is common in calcareous siltstone, mudstone and limestone country from Port Waikato to south Taranaki, and also in the Ruahines; also in damp roadside seepages in calcareous mudstone. Montane to lowland.

Flowers August to October. *Distribution:* N, S. *Conservation status:* not threatened.

Corybas alliance

Nematoceras longipetalum (Hatch) Molloy, D.L.Jones & M.A.Clem. *Orchadian*

13(10): 449 (2002).

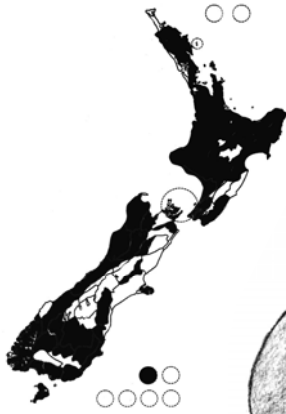


Characteristics: leaf petiolate; flower green with dark maroon at the back; TEPALS LEAN FORWARD ESSENTIALLY IN PARALLEL ARRAY, petals as long as the filiform sepals. Similar to *N. papa* but the leaf of that species is strictly sessile, flowers 3-8 weeks later and colour pattern within throat is quite distinct.

Habitat: wet mossy rocks, montane to subalpine. *Flowers* July to October. *Distribution:* N, S.

Notes: placed by Hatch as a variety of *Corybas macranthus*, but later recognised as part of the *N. rivularis* agg. (and tagged *C. "Waiouru"*) by Irwin.

Corybas alliance: *Nematoceras macranthum* Hook.f. *Flora Nov. Zel.* 1: 250 (1853)



Characteristics: LARGE, TRUMPET SHAPED LABELLUM, LONG NARROW DORSAL SEPAL, lateral sepals much longer than the petals. Flower beneath or above the large round leaf, depending on habitat. Some have translucent yellow-green, dark crimson-flecked dorsal sepals and a dull green throat in the labellum. Others have a dark red dorsal sepal and labellum.

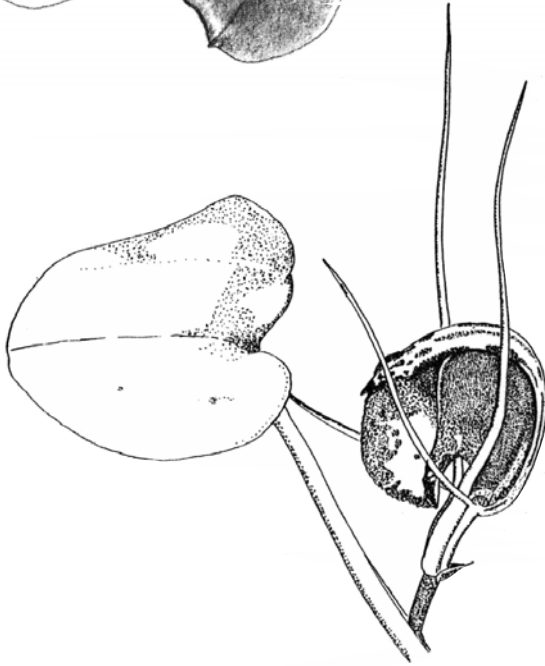
Habitat: Lowland to montane, damp places from stream banks to near ridge tops.

Flowers October to January.

Distribution: N, S, St, C.

Conservation status: not threatened.

Notes: a species with different forms. There appear to be hybrids with members of the *N. triloba* agg.



10

Corybas alliance

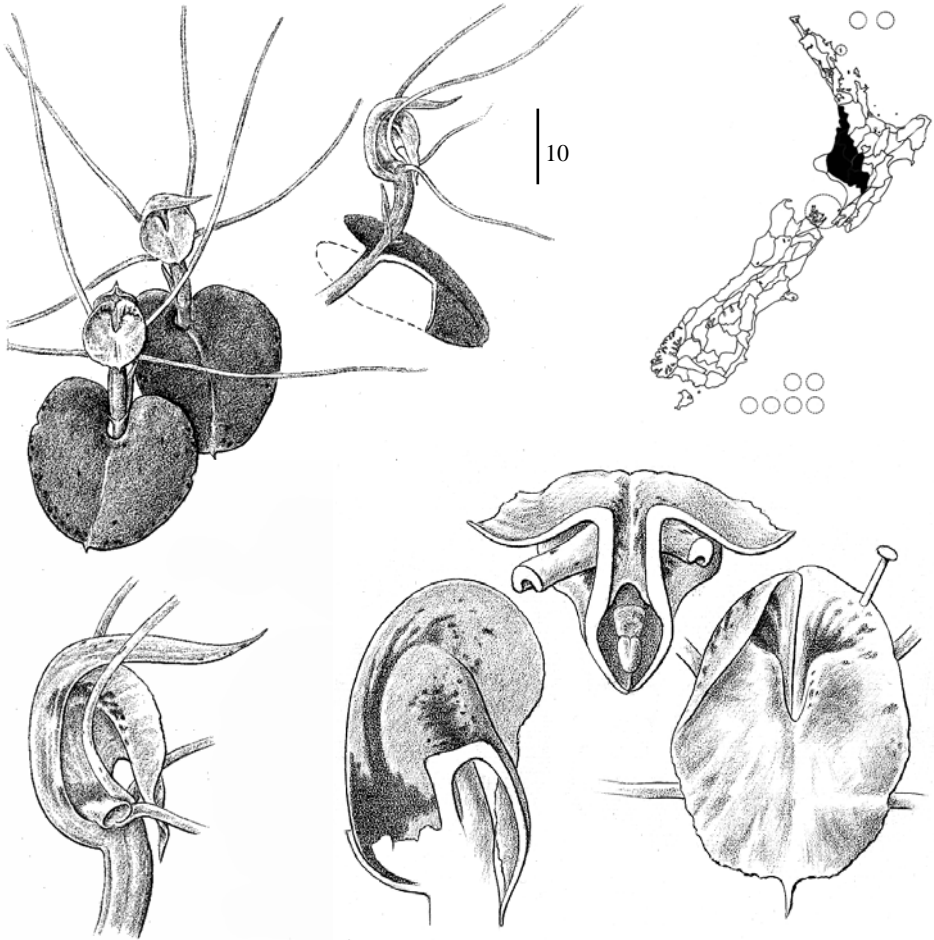
Nematoceras orbiculatum (Col.) Molloy, D.L.Jones & M.A.Clem. *Orchadian* 13 (10): 449 (2002)

Characteristics: similar to *C. rivularis*, but edges of the dark crimson labellum inrolled to give a sharp, pendant troughlike appearance, SEPAL AND PETALS VERY SHORT – about as long as the dorsal. Apparently self-pollinated.

Habitat: permanently wet, mossy road banks; locally abundant in calcareous siltstone, mudstone and limestone. Lowland to montane. *Flowers* August–October. *Distribution:* N, S, St, Ch.

Conservation status: not threatened.





Corybas alliance

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

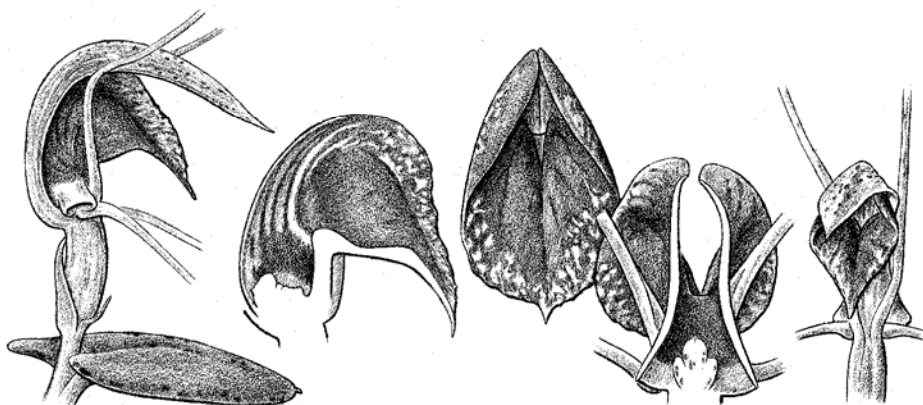
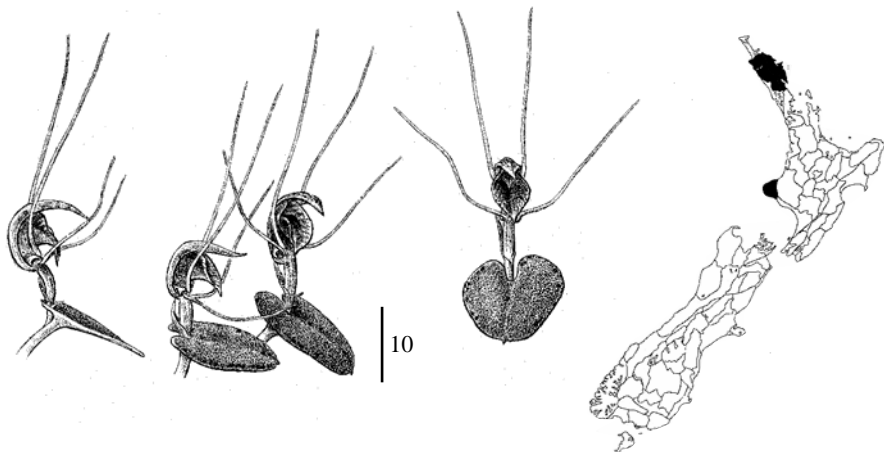
Characteristics: leaf strictly sessile, FLOWER GREEN with blackish crimson at back of labellum, but with a NARROW GREEN MARGIN TO REAR LOBES of labellum. Flower compressed fore and aft compared with *N.* “whiskers”, labellum bib rounded to a small apiculus which drops below the downward facing auricles. Sepals and petals project forward and outward.

Habitat: calcareous siltstone, mudstone and limestone country from Port Waikato to south Taranaki and the Ruahines; damp roadside seepages. Lowland to montane.

Flowers August to September. *Distribution:* N.

Conservation status: not threatened.

Notes: was tagged *Corybas* “Mt Messenger”.



Corybas alliance

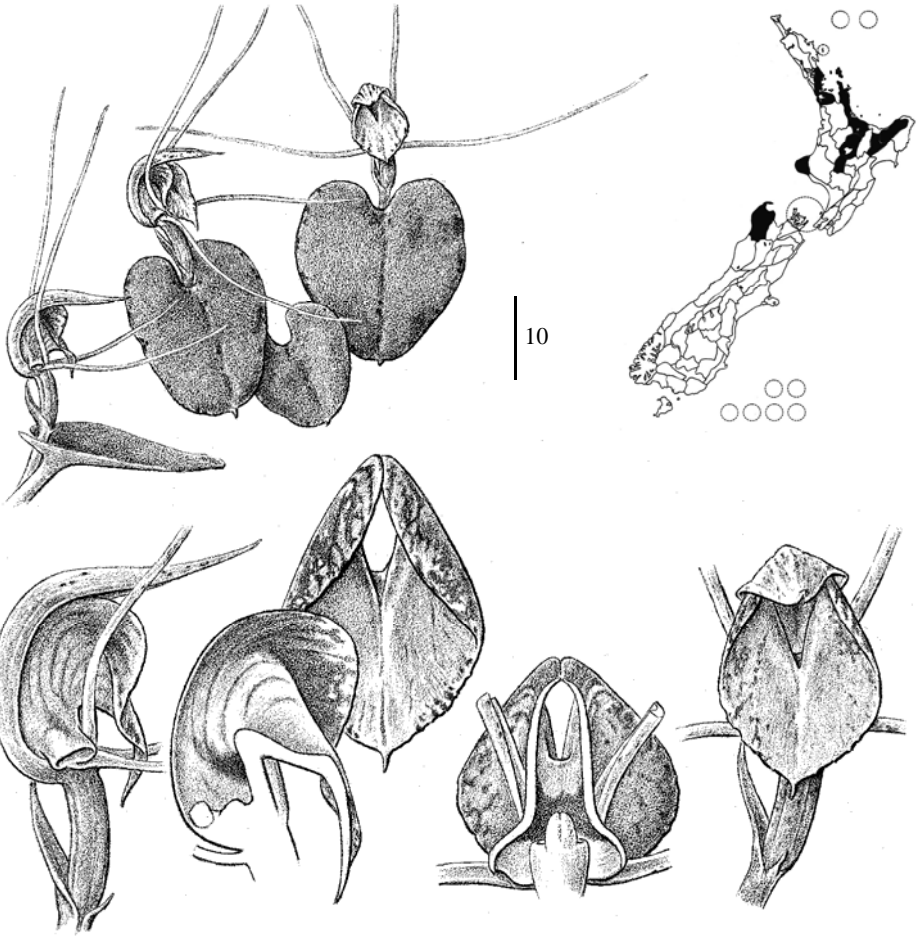
Nematoceras rivulare (A.Cunn.) Hook.f. *Flora Nov. Zel.* 1: 251 (1853).

Characteristics: blackish crimson labellum and flecks on greenish dorsal sepal. IN THE LABELLUM KEEL THE OUTER FLEXURE IS ALMOST STRAIGHT ON YOUNG FLOWERS, HOLDING THE APICULUS WELL CLEAR OF THE OVARY.

Habitat: wet, mossy, shady stream banks.

Flowers October to November. *Distribution:* N. Lowland.

Conservation status: at risk, sparse.

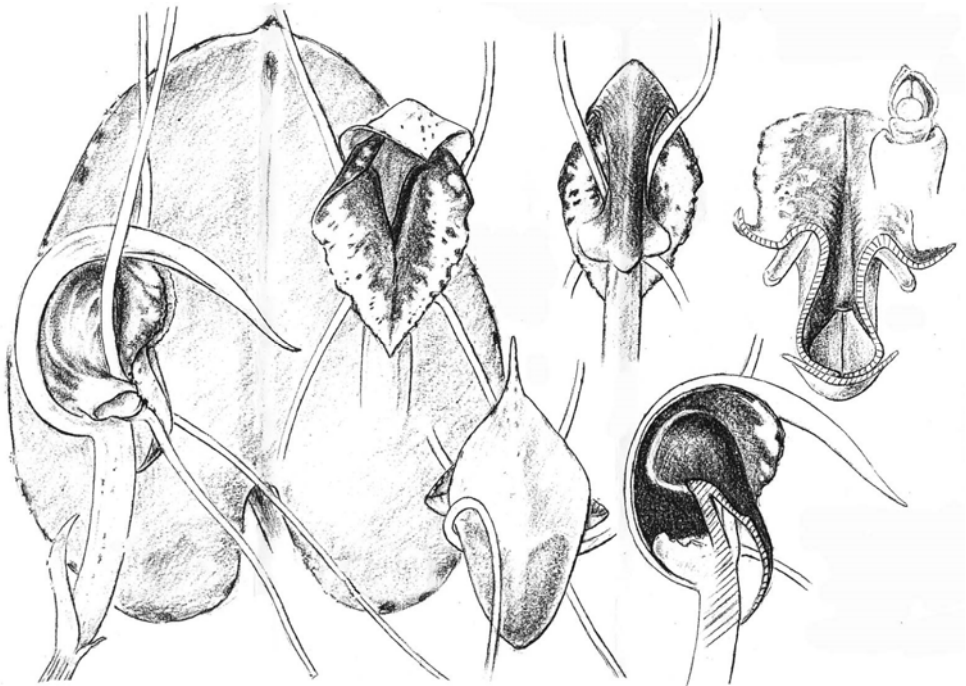


Corybas alliance
N. rivulare agg.
Nematoceras "Kaimai"

Characteristics: stalked round leaf often with dark crimson spots. Dark crimson labellum top; pale translucent bib tapering to the apiculus. Dorsal sepal pale green streaked red. THE LABELLUM'S INNER FLEXURE IS SHARPLY DEFLEXED (ABOUT 130°). Erect lateral sepals, horizontal lateral petals.

Habitat: wet, mossy stream banks out of direct sun. Lowland to montane.

Flowers September to October. *Distribution:* N. *Notes:* close to *N. rivularis* s.s.



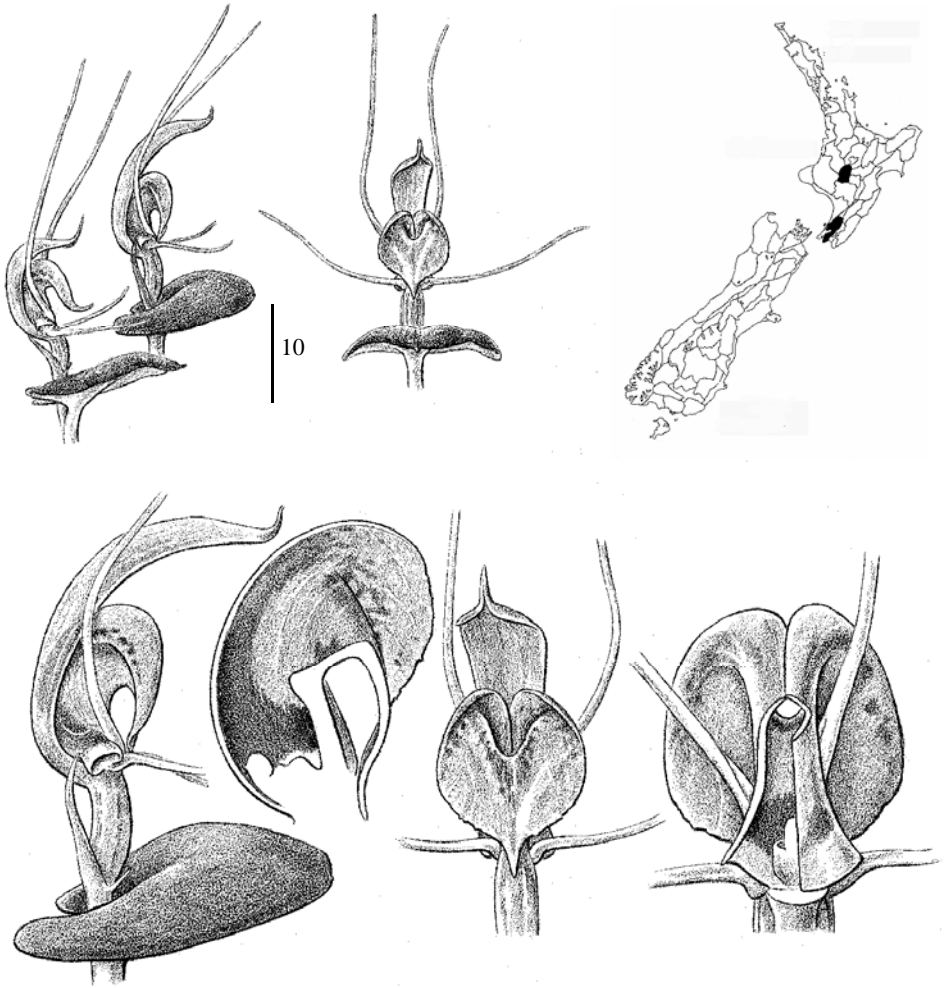
Corybas alliance
N. rivulare agg.
Nematoceras "Pollok"

Characteristics: ovary as tall as the small greenish flower; dorsal sepal has a long apex and BASE in side view VERY ROUNDED (as in *N. "whiskers"*). Labellum very like *N. "Kaimai"* but apex more acute, without apiculus. RED OF INTERIOR SPILLS ONTO APRON.

Habitat: seeping, southfacing sandstone cliffs.

Flowers Aug-Sep. *Notes:* So far found only at Awhitu peninsula, ER 9.

Distribution: N.

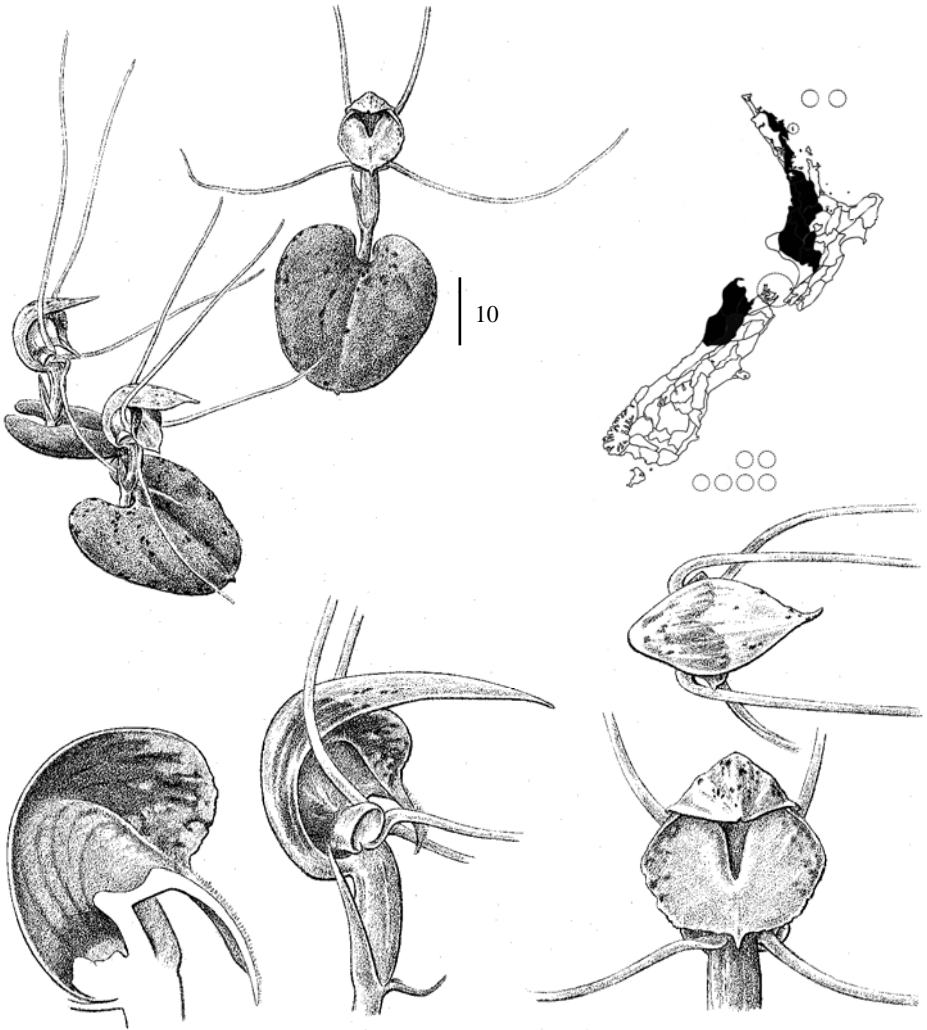


Corybas alliance
N. rivulare agg.
Nematoceras "rest area"

Characteristics: similar to *N. papa* but SELF FERTILISED and the leaf is shortly and obscurely petio- late; the labellum has a tapered apex which barely reaches down to auricle level, and the DORSAL SEPAL OFTEN ARCHES UPWARD CLEAR OF THE LABELLUM.

Habitat: wetlands, barely above flowing water. Montane to subalpine.

Flowers: October to November. *Distribution:* N.



Corybas alliance

***N. rivulare* agg.**

Nematoceras “whiskers”

Characteristics: exterior colours mimic *N. papa* but the PERFUMED FLOWER is MUCH DEEPER front to rear, and the LABELLUM APRON IS COVERED WITH MINUTE PALE HAIRS obscuring the pattern of veins.

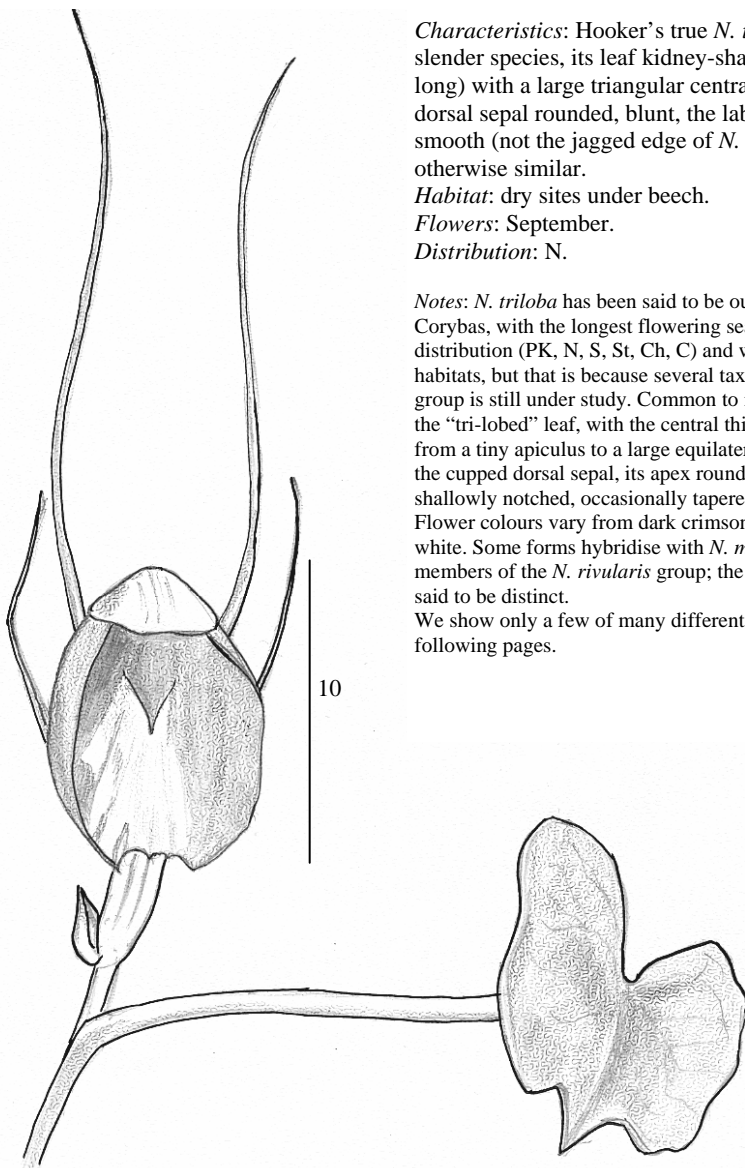
Habitat: wet, mossy stream banks, but occasionally in surprisingly dry sites.

Flowers September to November. *Distribution:* N, S. Lowland to subalpine.

Notes: a form from inland Wanganui to New Plymouth is more colourful and its labellum juts further forward than that from Kawhia, Arapuni and the Central Plateau.

Corybas alliance

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



Characteristics: Hooker's true *N. triloba* is a slender species, its leaf kidney-shaped (wider than long) with a large triangular central lobe, the dorsal sepal rounded, blunt, the labellum edge smooth (not the jagged edge of *N. hypogaea*) but otherwise similar.

Habitat: dry sites under beech.

Flowers: September.

Distribution: N.

Notes: *N. triloba* has been said to be our most common Corybas, with the longest flowering season, broadest distribution (PK, N, S, St, Ch, C) and widest range of habitats, but that is because several taxa are included: the group is still under study. Common to most of them is the "tri-lobed" leaf, with the central third lobe ranging from a tiny apiculus to a large equilateral triangle; and the cupped dorsal sepal, its apex rounded, sometimes shallowly notched, occasionally tapered or apiculate. Flower colours vary from dark crimson to green to near white. Some forms hybridise with *N. macrantha* and members of the *N. rivularis* group; the Chatham form is said to be distinct.

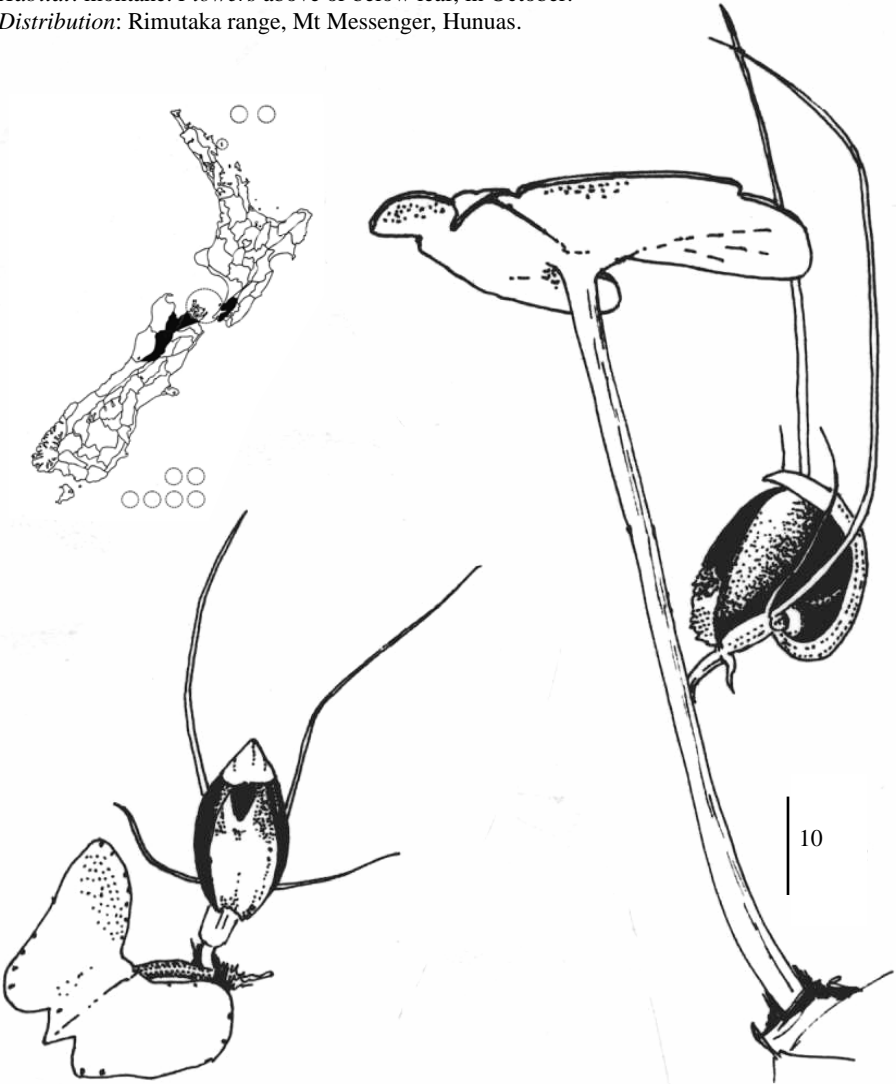
We show only a few of many different forms in the following pages.

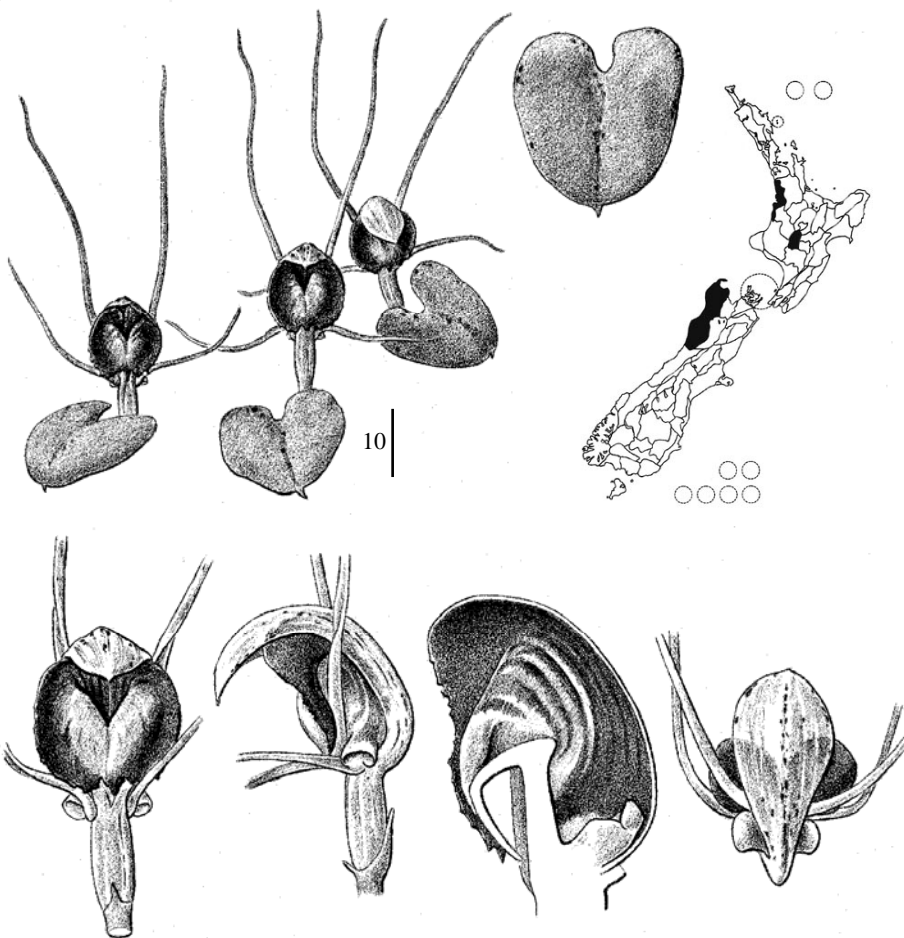
Corybas alliance
Nematoceras trilobum agg.
N. "Rimutakas"

Dark crimson labellum, red streaked green DORSAL SEPAL, WHICH HAS A SMALL SHARP APICULUS. The labellum opening is oval, its long diameter vertical.

Habitat: montane. *Flowers* above or below leaf, in October.

Distribution: Rimutaka range, Mt Messenger, Hunuwas.





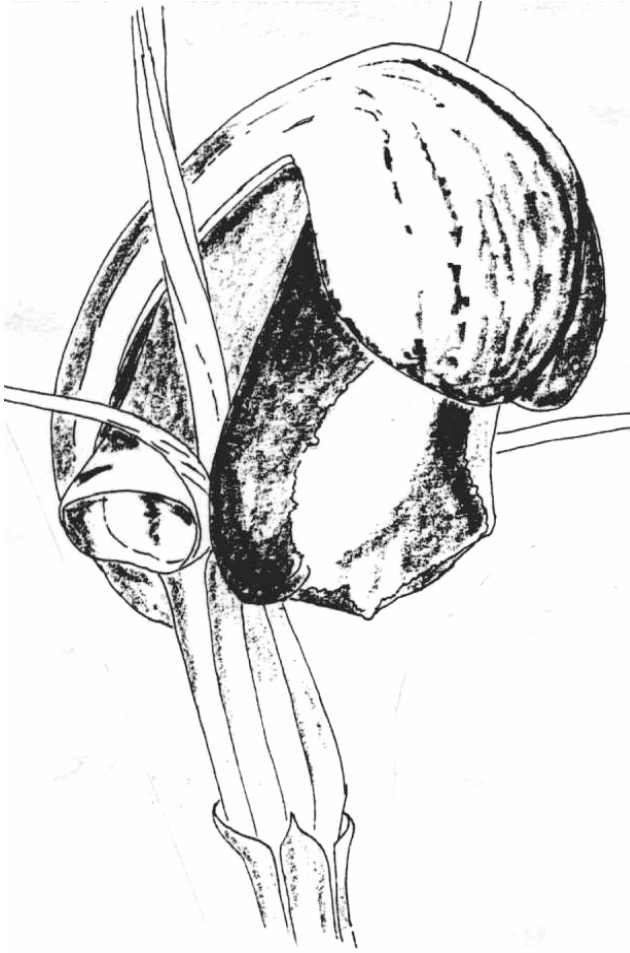
Corybas alliance
N. trilobum agg.
Nematoceras “round leaf”

Characteristics: flowers above the shortly petiolate round leaf which resembles that of *N. macrantha*; below the leaf at St Arnaud (round leaf elongates in flowering plants). The dark crimson labellum has the trilobus fringed notch but the more POINTED DORSAL SEPAL PROJECTS BEYOND THE LABELLUM. Flowers do vary from colony to colony however.

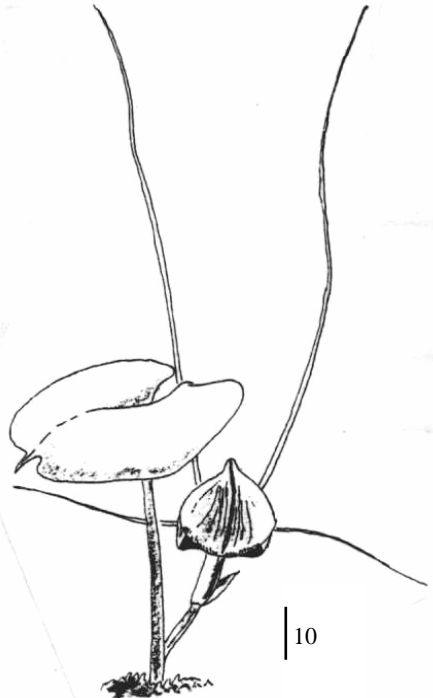
Habitat: deep mossy overhangs near Kawhia; elsewhere high subalpine, found in shade by streams.

Flowers October to November. *Distribution:* N. S.

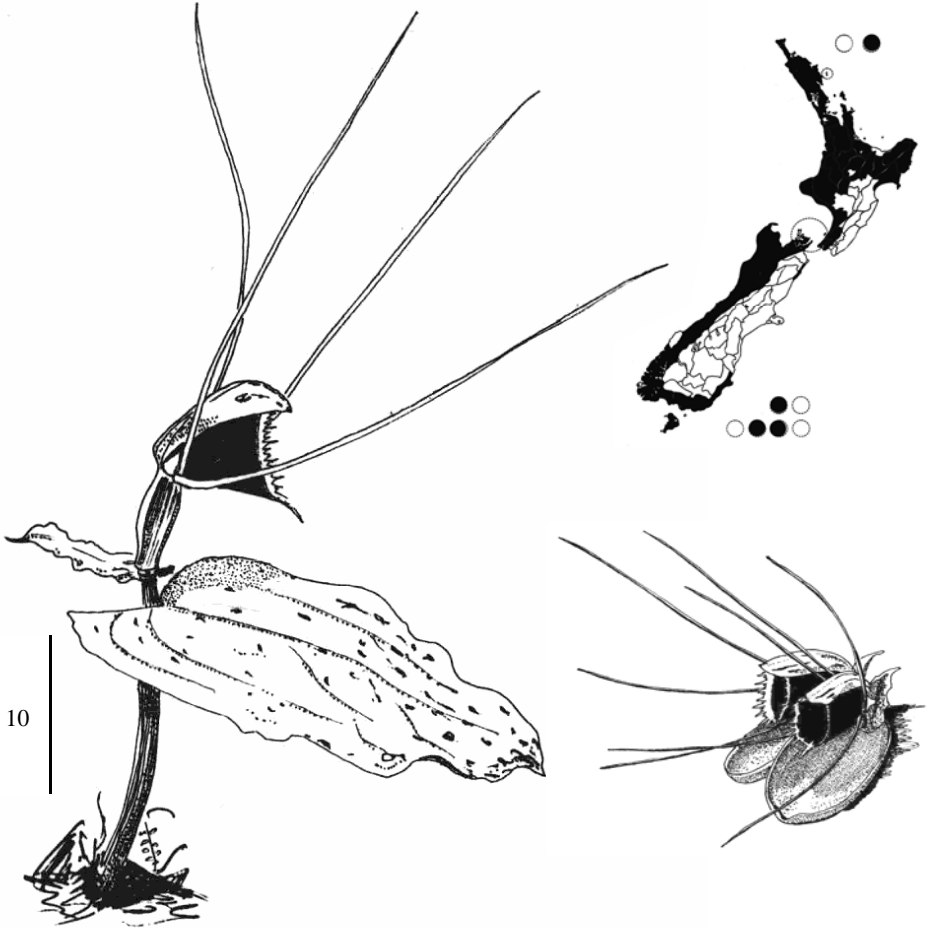
**Corybas alliance:
N. trilobum agg.
Nematoceras "Trotters"**



Characteristics: this is a DARK, LATE FLOWERING form. The flower may be almost black, large (up to 15mm across), always below the leaf, its vertical lateral sepals very much longer than the horizontal to drooping petals, showing well above the leaf layer. Leaves may be large and veined (up to 45mm across), as long as they are wide.
Habitat: streamsides, in damp ground and moderate shade.
Flowers October to November.
Distribution: N, S.



Corybas alliance: Singularitybas oblongus (Hook.f.) D.L.Jones & M.A.Clem.
Orchadian 13(10): 449 (2002)



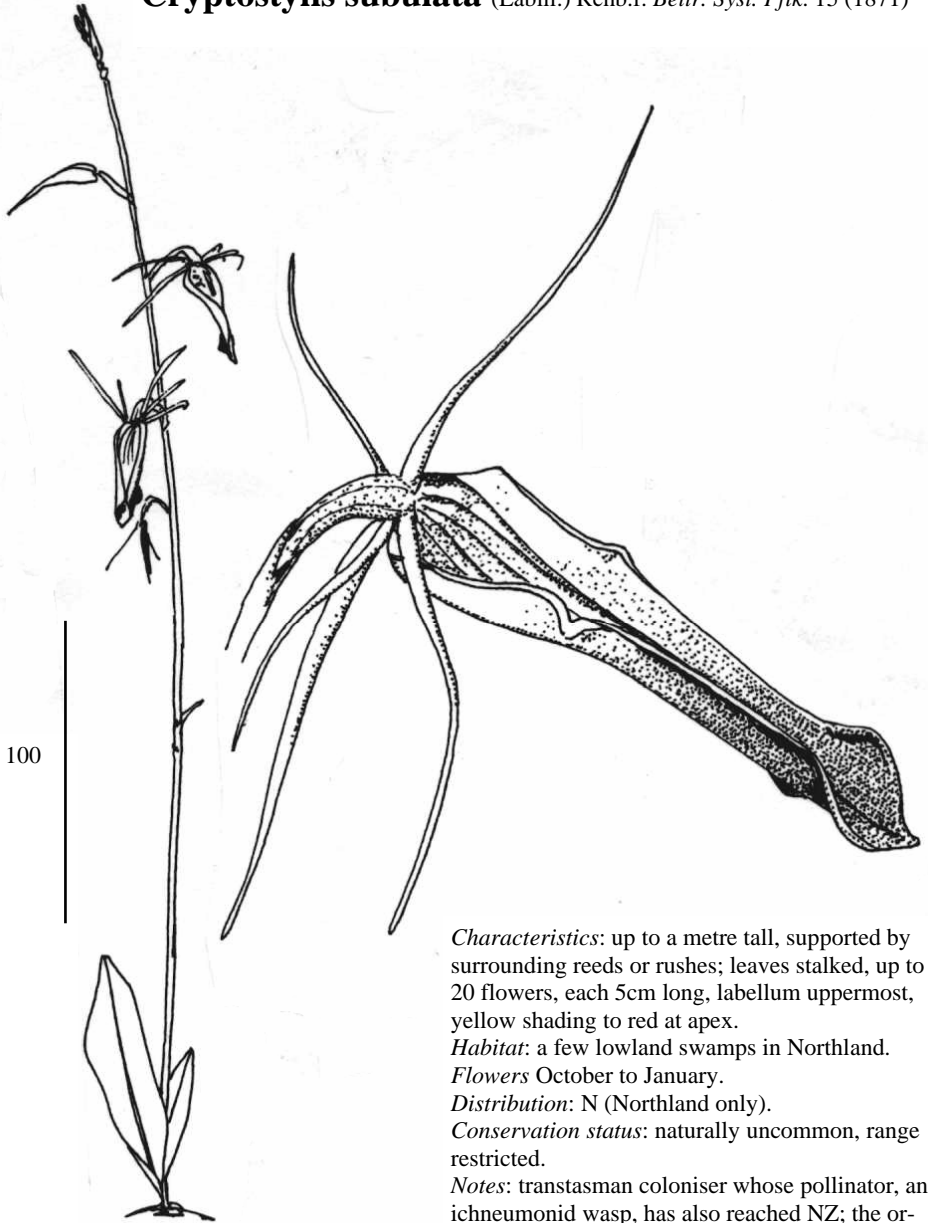
Characteristics: easily distinguished by the PALE, FIMBRIATE EDGE TO THE DARK CRIMSON LABEL-LUM and the THIN, UNDULATE TO SMOOTH EDGED LEAF, varying from green to purple-veined to purplish. Big specimens may have a second flower.

Habitat: favours clay banks and sandstone or limestone bluffs usually in moderate shade. Lowland to montane. *Flowers* September to November. *Distribution:* 3K, N, S, St, Ch, Ant.

Conservation status: not threatened.

Notes: differs from *Nematoceras* in its upright column. Occasional plants lack the purplish pigment. More than one form exists but their status is far from clear.

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



Characteristics: up to a metre tall, supported by surrounding reeds or rushes; leaves stalked, up to 20 flowers, each 5cm long, labellum uppermost, yellow shading to red at apex.

Habitat: a few lowland swamps in Northland.

Flowers October to January.

Distribution: N (Northland only).

Conservation status: naturally uncommon, range restricted.

Notes: trans-tasman coloniser whose pollinator, an ichneumonid wasp, has also reached NZ; the orchid is spreading naturally.

Danhatchia australis (Hatch) Garay & Christenson *Orchadian* 11(10):469 f471 (1995)

Characteristics: glandular pubescent plants, stems brown, bracts and buds mushroom. Self pollinated, tubular, white tipped, mushroom coloured flowers usually open rarely and never widely.

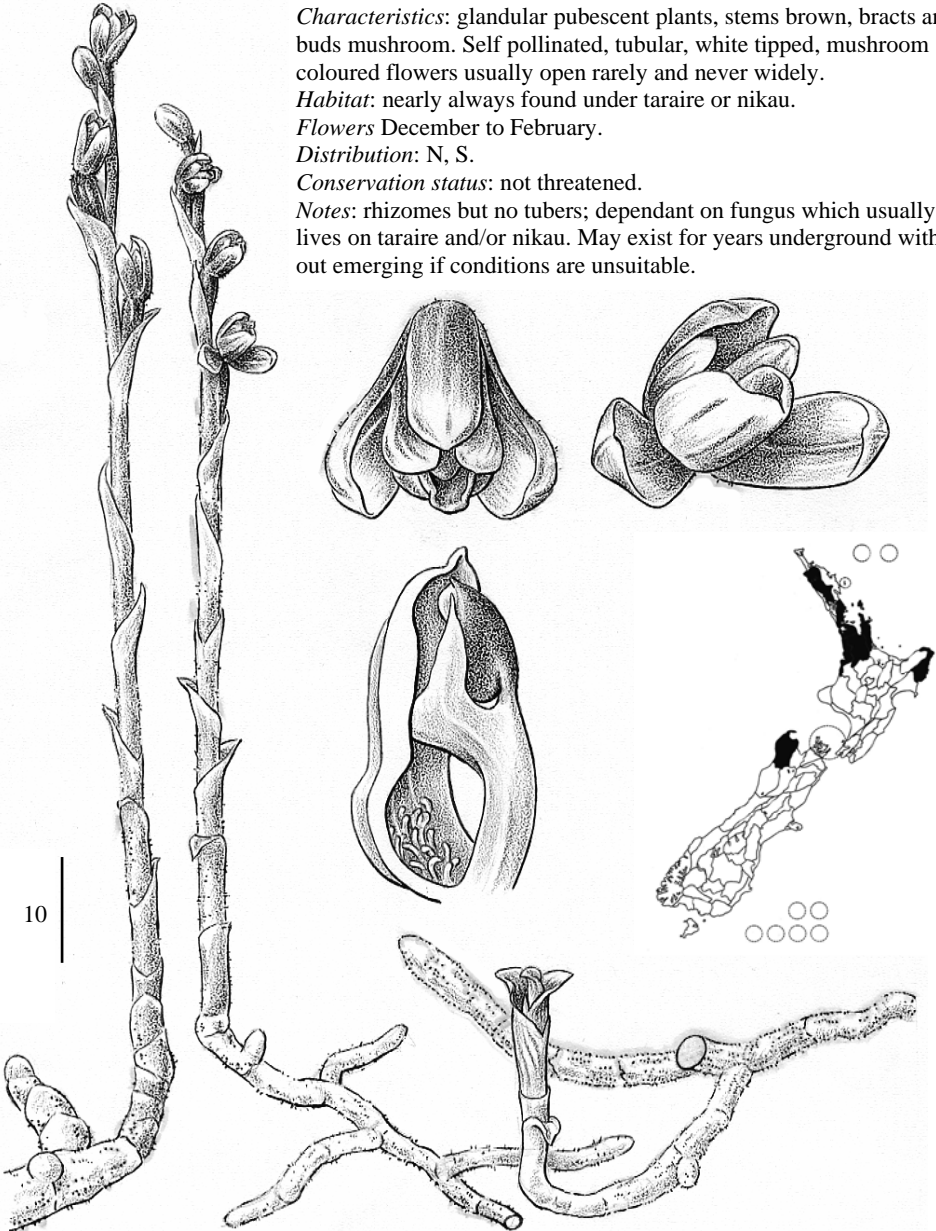
Habitat: nearly always found under taraire or nikau.

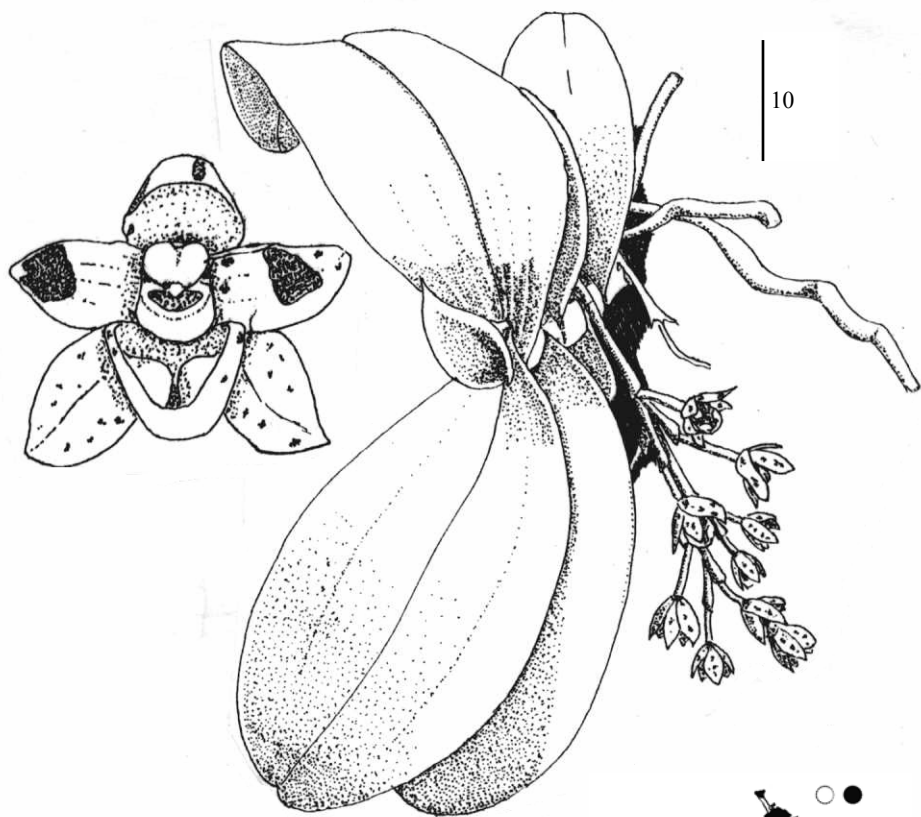
Flowers December to February.

Distribution: N, S.

Conservation status: not threatened.

Notes: rhizomes but no tubers; dependant on fungus which usually lives on taraire and/or nikau. May exist for years underground without emerging if conditions are unsuitable.





Drymoanthus adversus

(Hook.f.) Dockrill *Australasian Sarcanthinae* 32 t3 (1967)

Characteristics: wide spreading whitish roots clamp onto well shaded branches. Leaves elliptic to oblong, glossy, fleshy. Flowers 4mm across, creamy to green, usually flecked with red/purple. Sepals and petals similar, elliptic. Labellum cupped with UPRIGHT FLATTENED CALLI AT EACH SIDE, OFTEN MEETING AT THE CENTRE.

Habitat: an epiphyte on a wide range of host trees and on rocky outcrops, from lowland forest to the subalpine zone, it thrives close to rivers.

Flowers October to December.

Distribution: 3K, PK, N, S, Ch.

Conservation status: not threatened.



Drymoanthus flavus St George & Molloy *NZ J. Bot.* 32:416 fl (1994)

Characteristics: SPOTTED DULL LEATHERY LEAVES, yellow green flowers, THE LABELLUM LACKING THE UPRIGHT FLATTENED CALLI (OF *D. ADVERSUS*) WITHIN.

Habitat: on a range of host trees, notably totara, often near the coast.

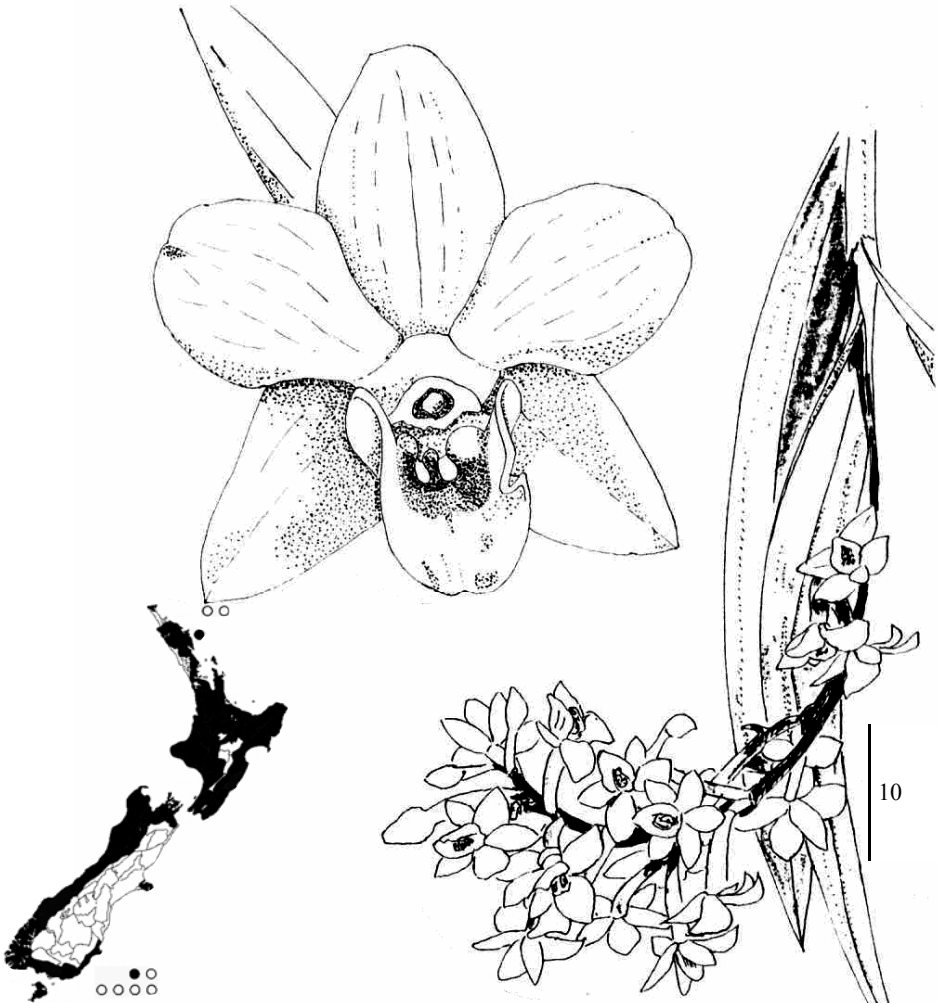
Flowers October to December.

Distribution: N, S, St.

Conservation status: naturally uncommon, sparse.



Earina autumnalis (G.Forst.) Hook.f. *Flora Nov. Zel.* 1:239 (1853)



Characteristics: HEAVILY SCENTED. Stem to a metre long, drooping or upright if very short; covered with stiff, 40–100mm long, narrow, pointed leaves; many 5mm WHITE FLOWERS with broad oval petals and sepals, and a broad yellow-based labellum. Flowers on last year's spike.

Habitat: tolerates shade, sometimes on rocks or hard clay banks.

Flowers February to April (July on a shaded southfacing slope near Dunedin).

Distribution: PK, N, S, St, Ch. *Conservation status:* not threatened.

Earina mucronata Lindl. *Bot. Reg.* sub t1699



Characteristics: NARROW LEAVES, with a shallow midrib channel, on long drooping stems, forming dense clumps on well lit branches and trunks. Clusters of creamy flowers, to 8mm across, oval tepals cupping around and obscuring a 2mm long column. LABELLUM ORANGE, 3 LOBED, THE MIDLOBE BROAD AND BIFID (GIVING A 4 LOBED APPEARANCE) often with a drop of nectar below the labellum base. Light fragrance, especially in the south.

Habitat: matted roots on trees, tree ferns and rock walls, moderate to high rainfall, sea level to subalpine.

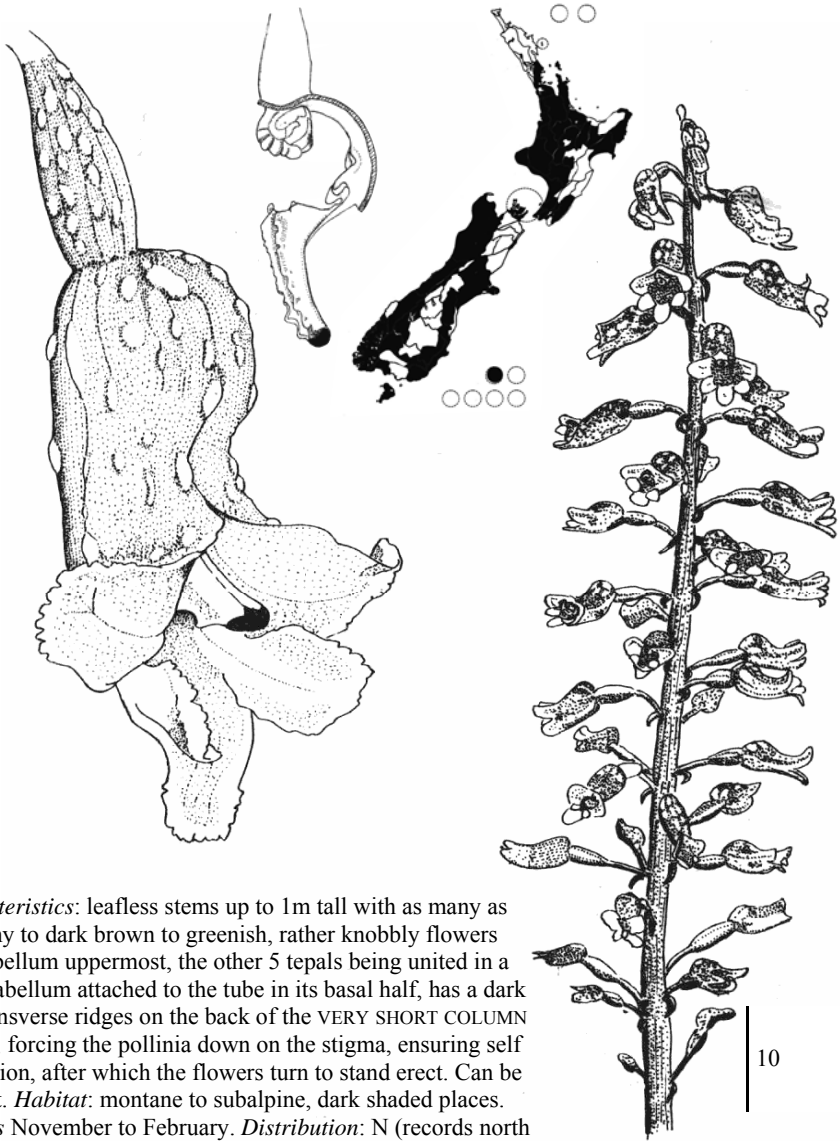
Flowers (on elongation of last year's spike) September to December.

Distribution: PK, N, S, St, Ch.

Conservation status: not threatened.

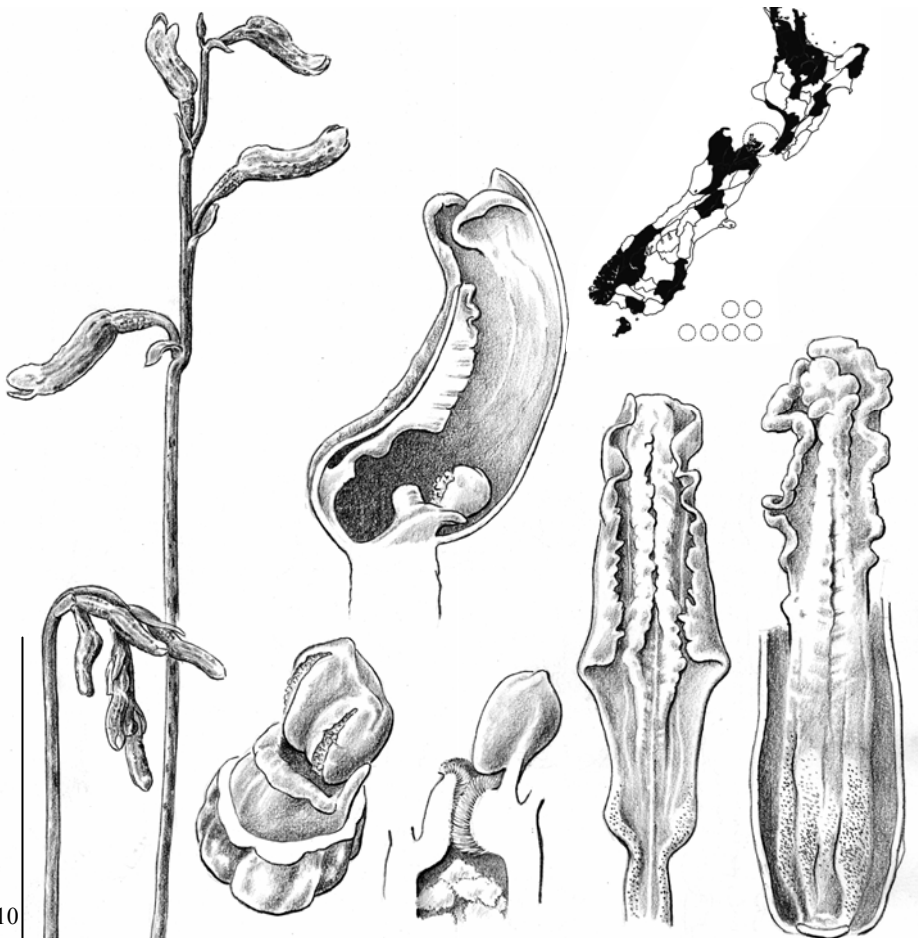
Note: a late-flowering form described as *E. aestivalis* is almost indistinguishable.

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



Characteristics: leafless stems up to 1m tall with as many as 70 tawny to dark brown to greenish, rather knobby flowers with labellum uppermost, the other 5 tepals being united in a tube. Labellum attached to the tube in its basal half, has a dark tip. Transverse ridges on the back of the VERY SHORT COLUMN expand, forcing the pollinia down on the stigma, ensuring self pollination, after which the flowers turn to stand erect. Can be fragrant. *Habitat:* montane to subalpine, dark shaded places. *Flowers* November to February. *Distribution:* N (records north of Auckland are doubtful), S, St, Ch. *Conservation status:* not threatened. *Notes:* lacks chlorophyll; may flower only at about 3 year intervals. The labellar ridges vary.

Gastrodia minor Petrie *Trans.N.Z.I.* 25:273 t20 f5-7 (1893)



Characteristics: slender, few flowered plant, LESS THAN 300MM TALL, with tubular brown buds which barely open to show petals, and labellum uppermost. SHORT COLUMN.

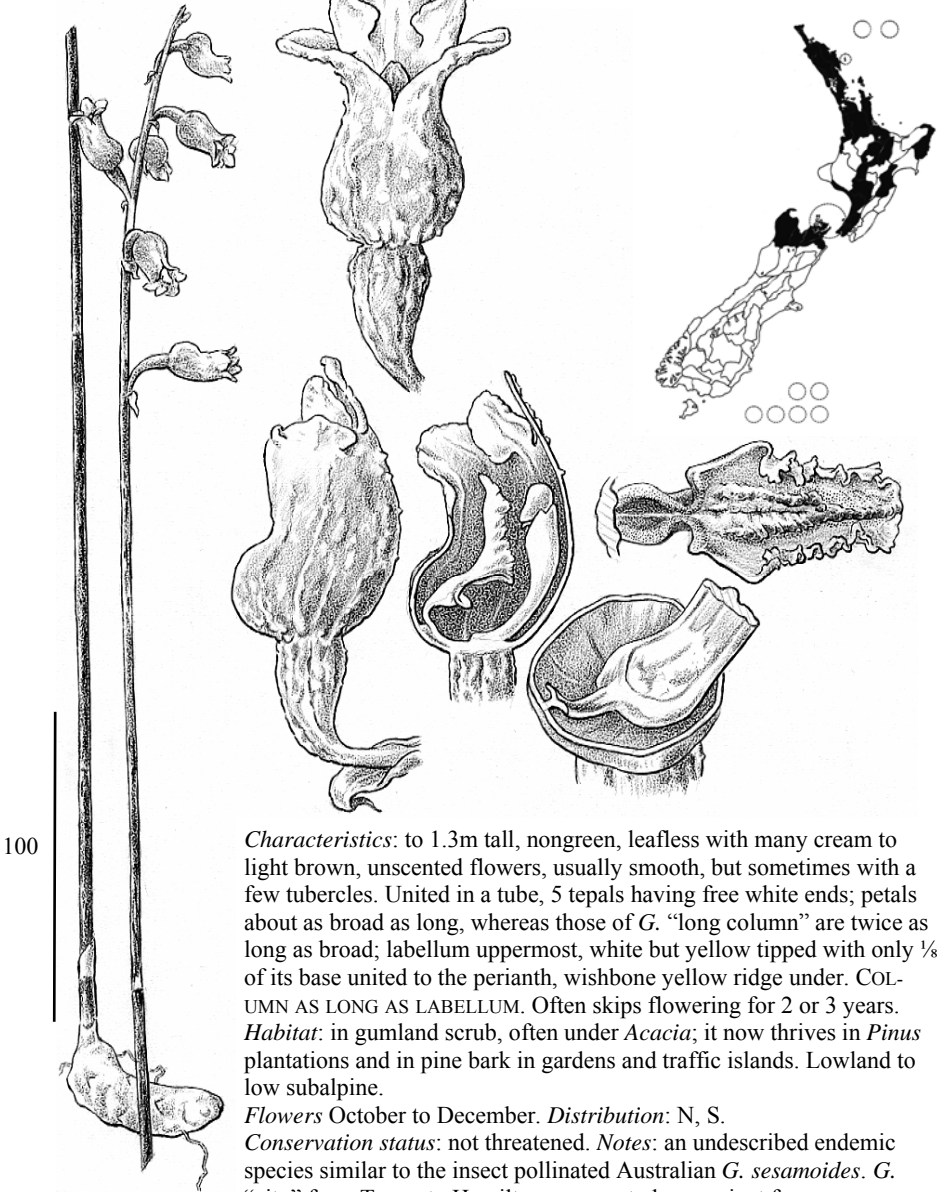
Habitat: often grows under tea tree, pines, kamahi or gorse, or amongst Spanish heather (*Erica lusitanica*).

Flowers November to January. *Distribution:* N, S, St.

Conservation status: not threatened.

Notes: no chlorophyll, and reliant on fungal association as in *G. cunninghamii*. Structural abnormalities of the labellum are common.

Gastrodia aff. *sesamoides*



Characteristics: to 1.3m tall, nongreen, leafless with many cream to light brown, unscented flowers, usually smooth, but sometimes with a few tubercles. United in a tube, 5 tepals having free white ends; petals about as broad as long, whereas those of *G.* “long column” are twice as long as broad; labellum uppermost, white but yellow tipped with only $\frac{1}{8}$ of its base united to the perianth, wishbone yellow ridge under. COLUMN AS LONG AS LABELLUM. Often skips flowering for 2 or 3 years. *Habitat:* in gumland scrub, often under *Acacia*; it now thrives in *Pinus* plantations and in pine bark in gardens and traffic islands. Lowland to low subalpine.

Flowers October to December. *Distribution:* N, S.

Conservation status: not threatened. *Notes:* an undescribed endemic species similar to the insect pollinated Australian *G. sesamoides*. *G.* “city” from Taupo to Hamilton appears to be a variant form.



Gastrodia “long column”

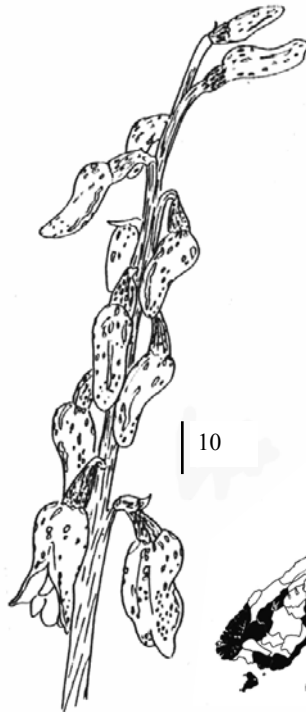
Characteristics: plant 300-1400mm tall, with up to 60 knobby, strongly yellow flowers, marked heavily with green or green-black. May outwardly resemble *G. cunninghamii*, but LONG COLUMN shows beneath the yellow tipped labellum, which is attached in its basal third. Buds stand erect, droop as flowers open, then rise to erect as seed capsules swell. Some smell of freesias.

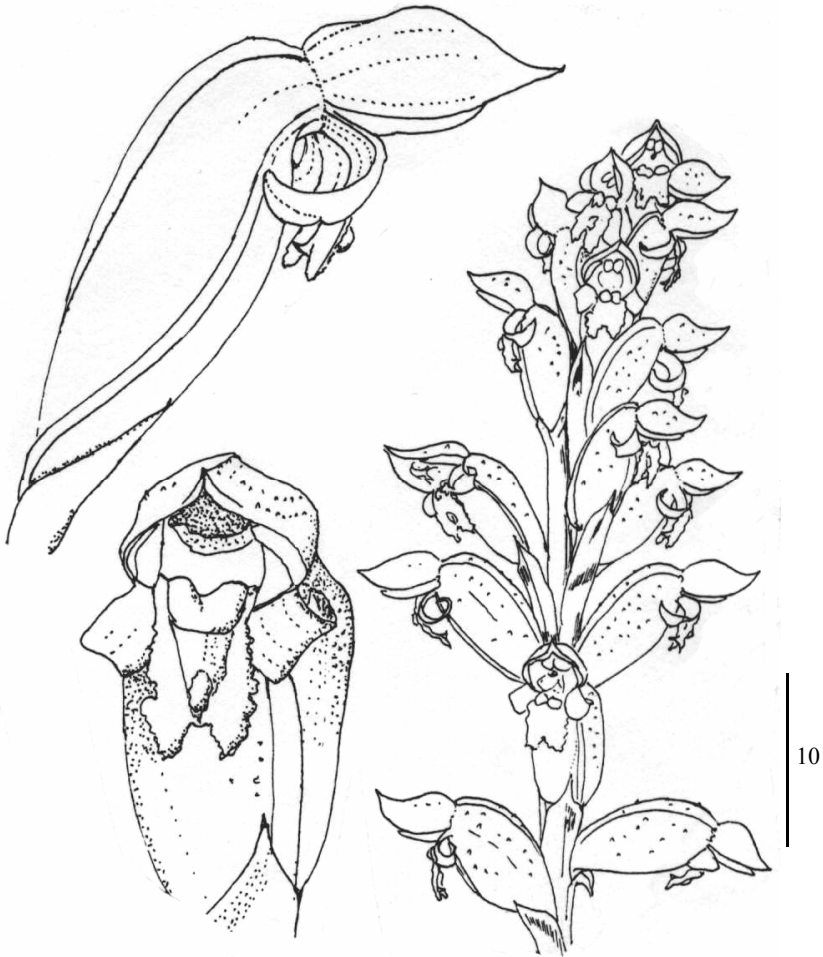
Habitat: in beech, kanuka, swampy riparian forest, estuarine bracken, under *Rhododendrons* etc.

Flowers January-February.

Distribution: N, S, St.

Notes: although some plants are green, the pigment is not chlorophyll.



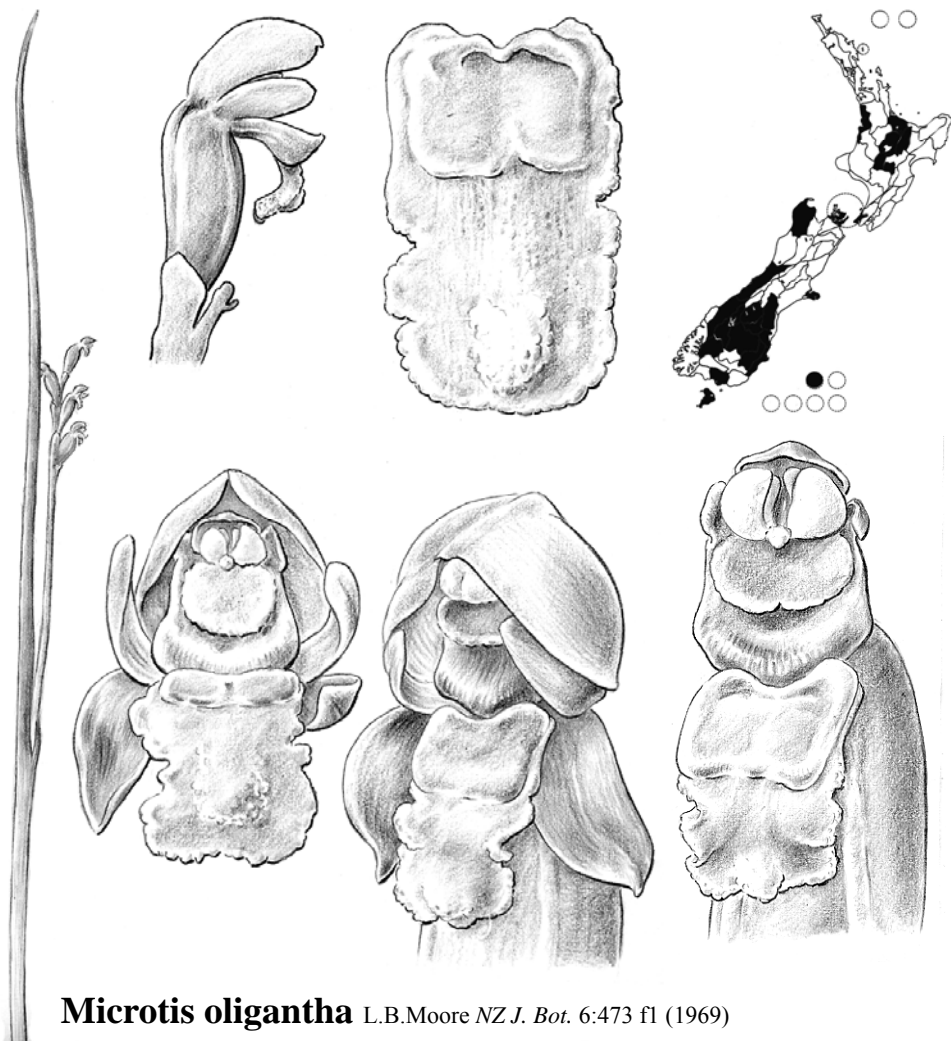


Microtis arenaria Lindl. *Genera & Spec. Orch. Plants* t306 (1840)

Characteristics: onion leaved plant to 250mm tall with numerous green yellow flowers. Similar to *M. unifolia* with the complex callus midlabellum and crisped labellum margins but the LABELLUM HAS A PROMINENT V NOTCH AT ITS EXTREMITY, WITH A TINY BACKTURNED APICULUS. The tip of the dorsal sepal is upturned. The OVARY HAS A CHARACTERISTIC HUMPBACKED APPEARANCE.

Habitat: dry gumland in scrub. *Flowers* October to November.

Distribution: N, so far found only in the far North and in Hawkes Bay.



Microtis oligantha L.B.Moore *NZ J. Bot.* 6:473 fl (1969)

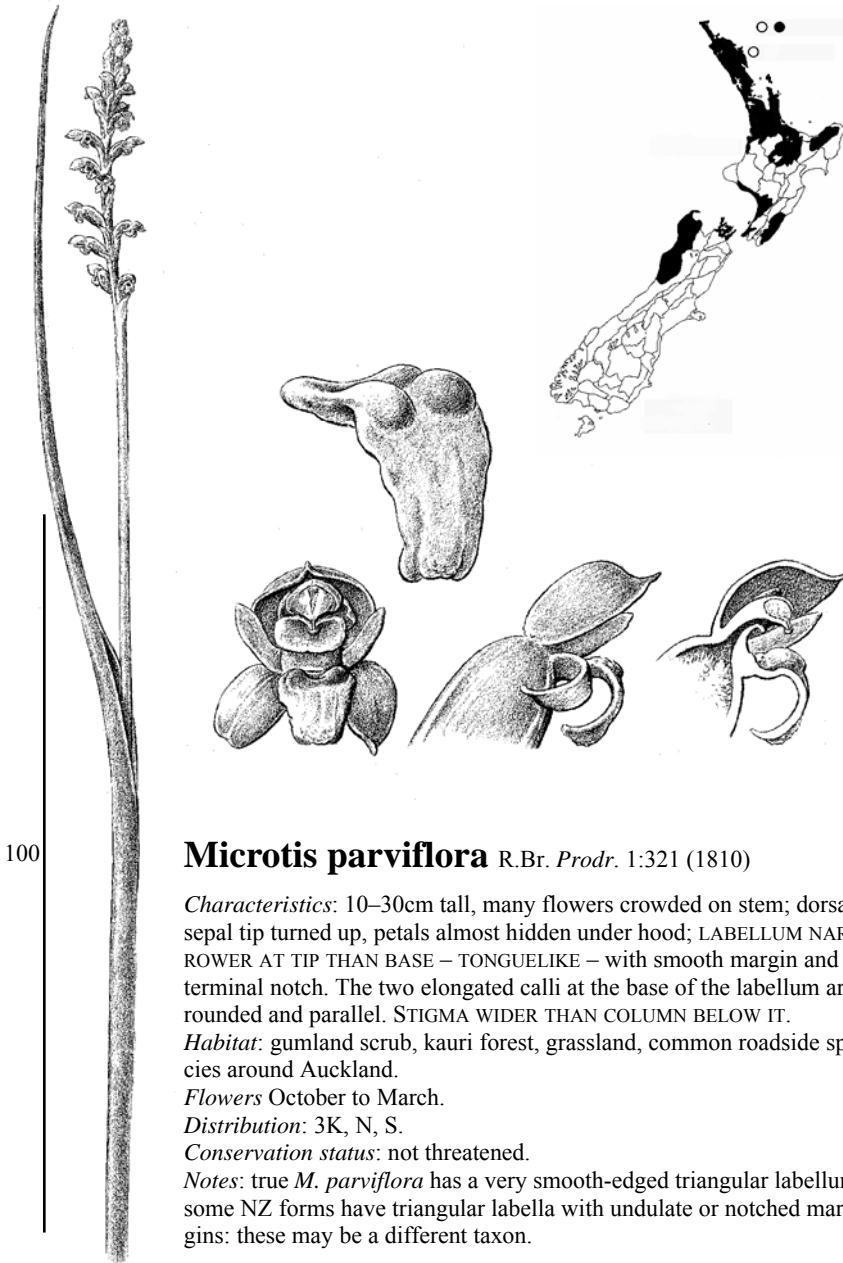
Characteristics: PLANTS SELDOM MORE THAN 100MM TALL; LESS THAN 10 TINY GREEN FLOWERS. DORSAL SEPAL SHORT, EVENLY ROUNDED. Lateral sepals usually pointing straight down. Labellum oblong, the margins with few shallow indentations; anterior callus often not prominent, BASAL CALLI LARGE, SQUARISH AND ALMOST FULL WIDTH OF LABELLUM, their tops almost flat.

Habitat: in open grass, tussock or boggy areas, streamsides, lakesides, alpine fields.

Flowers December to February.

Distribution: N, S, Ch.

Conservation status: not threatened.



Microtis parviflora R.Br. *Prodr.* 1:321 (1810)

Characteristics: 10–30cm tall, many flowers crowded on stem; dorsal sepal tip turned up, petals almost hidden under hood; LABELLUM NARROWER AT TIP THAN BASE – TONGUELIKE – with smooth margin and no terminal notch. The two elongated calli at the base of the labellum are rounded and parallel. STIGMA WIDER THAN COLUMN BELOW IT.

Habitat: gumland scrub, kauri forest, grassland, common roadside species around Auckland.

Flowers October to March.

Distribution: 3K, N, S.

Conservation status: not threatened.

Notes: true *M. parviflora* has a very smooth-edged triangular labellum; some NZ forms have triangular labella with undulate or notched margins: these may be a different taxon.

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



Characteristics: often a robust plant, up to 10mm thick at its base, its tubular leaf with ± 300 mm tall flower spike (rarely to 1m) emerging low down. Numerous close packed tiny green flowers with pointed, hooded dorsal sepals usually half enclosing the narrow petals. Lateral sepals pointed and curled. LABELLUM OBLONG, IRREGULARLY CRENATE, thus often narrowest at midlength; margins papillose; apex notched less than in *M. arenaria*, with no inturred apiculus; apical callus variable, warty; basal calli oval, prominent. STIGMA NOT WIDER THAN COLUMN BELOW IT.

Habitat: a very common orchid, in a wide range of habitats.

Flowers September to November.

Distribution: widespread, but uncertain in detail as a result of confusion with similar taxa.

Conservation status: not threatened.

Microtis aff. unifolia

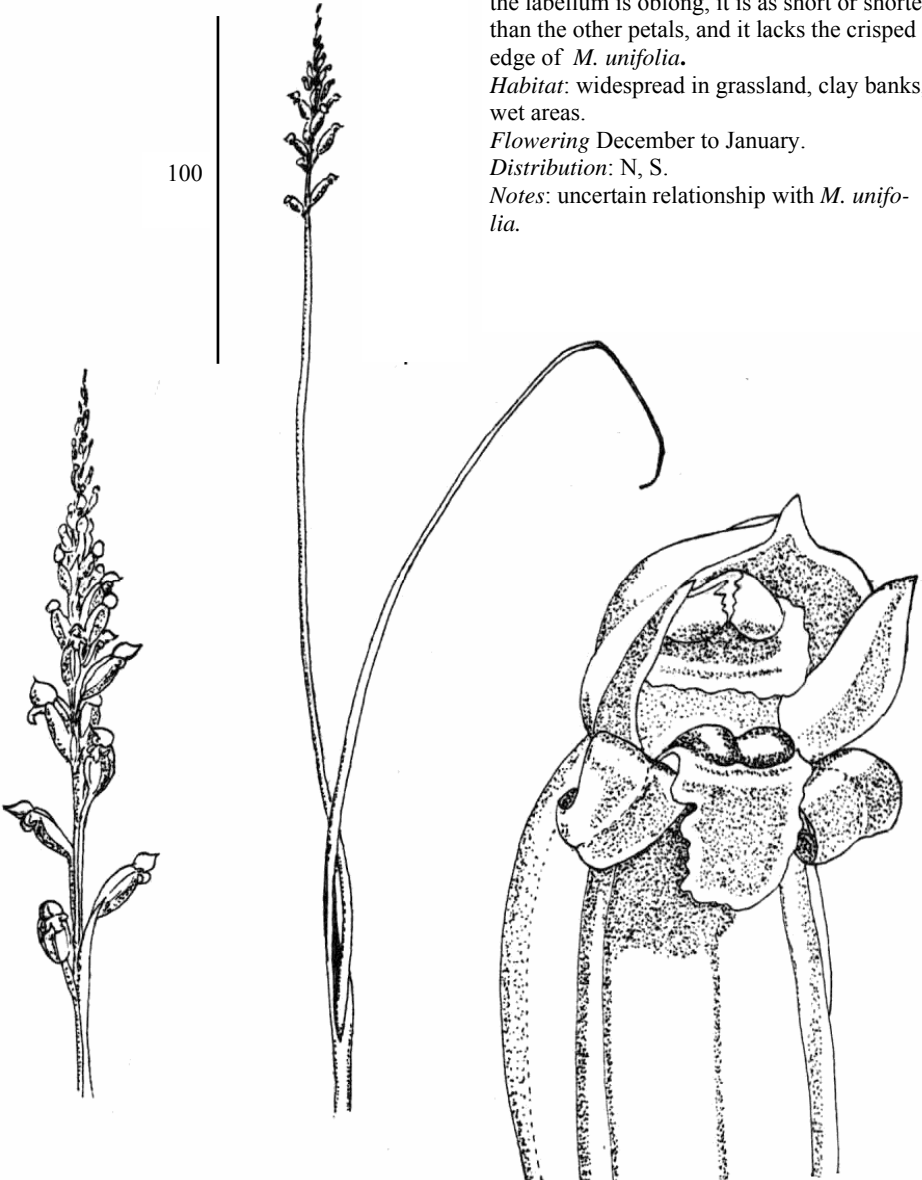
Characteristics: this small, summer flowering plant is common, and is often mistaken for *M. unifolia*. It flowers later, is less robust, the flowers are more widely spaced, and though the labellum is oblong, it is as short or shorter than the other petals, and it lacks the crisped edge of *M. unifolia*.

Habitat: widespread in grassland, clay banks, wet areas.

Flowering: December to January.

Distribution: N, S.

Notes: uncertain relationship with *M. unifolia*.





Orthoceras novae-zeelandiae

(A.Rich.) M.A.Clem., D.L.Jones & Molloy *Catalogue Austr. Orch.* 100 (1989)

Characteristics: up to 70cm tall, with several long stiff pointed channelled leaves, shorter than stem; 2–12 green to maroon flowers, 1cm dorsal sepal, with lateral sepals like thin horns, upright to diverging horizontally. Broad labellum bends forwards, 3-lobed, tip rounded.

Habitat: Dry open banks. Flowers November to January.

Distribution: N, S. *Conservation status:* not threatened.

Notes: plants apparently identical to the Australian *O. strictum* (pointed labellum and tall floral bract) have been found in NZ, as have intermediate forms; if there is one species, it is variable.

Paracaleana minor

(R.Br.) Blaxell. *Contr. N.S.W. Natl. Herb.* 4: 281 (1972)

Characteristics: 15cm, slender, red stemmed with single long narrow leaf and 1–7 flowers.

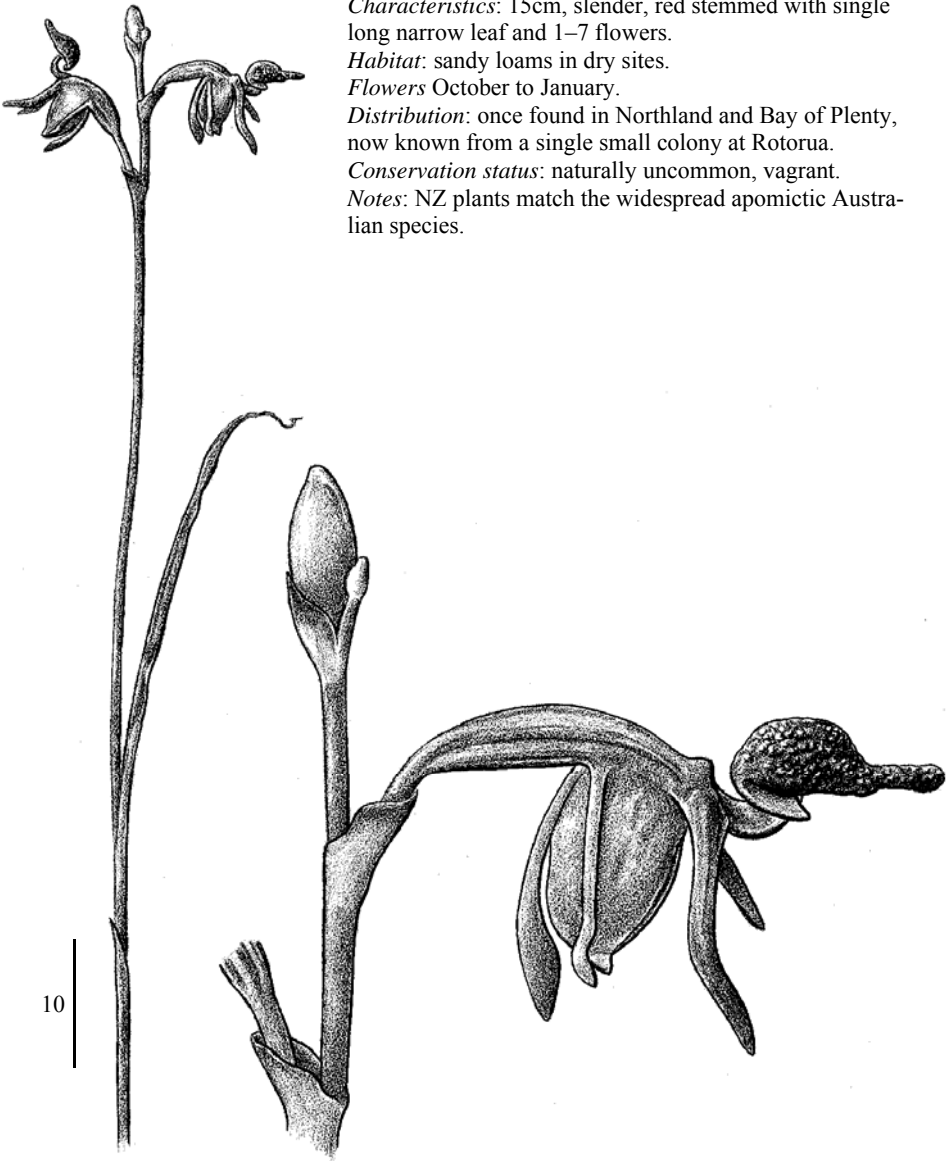
Habitat: sandy loams in dry sites.

Flowers October to January.

Distribution: once found in Northland and Bay of Plenty, now known from a single small colony at Rotorua.

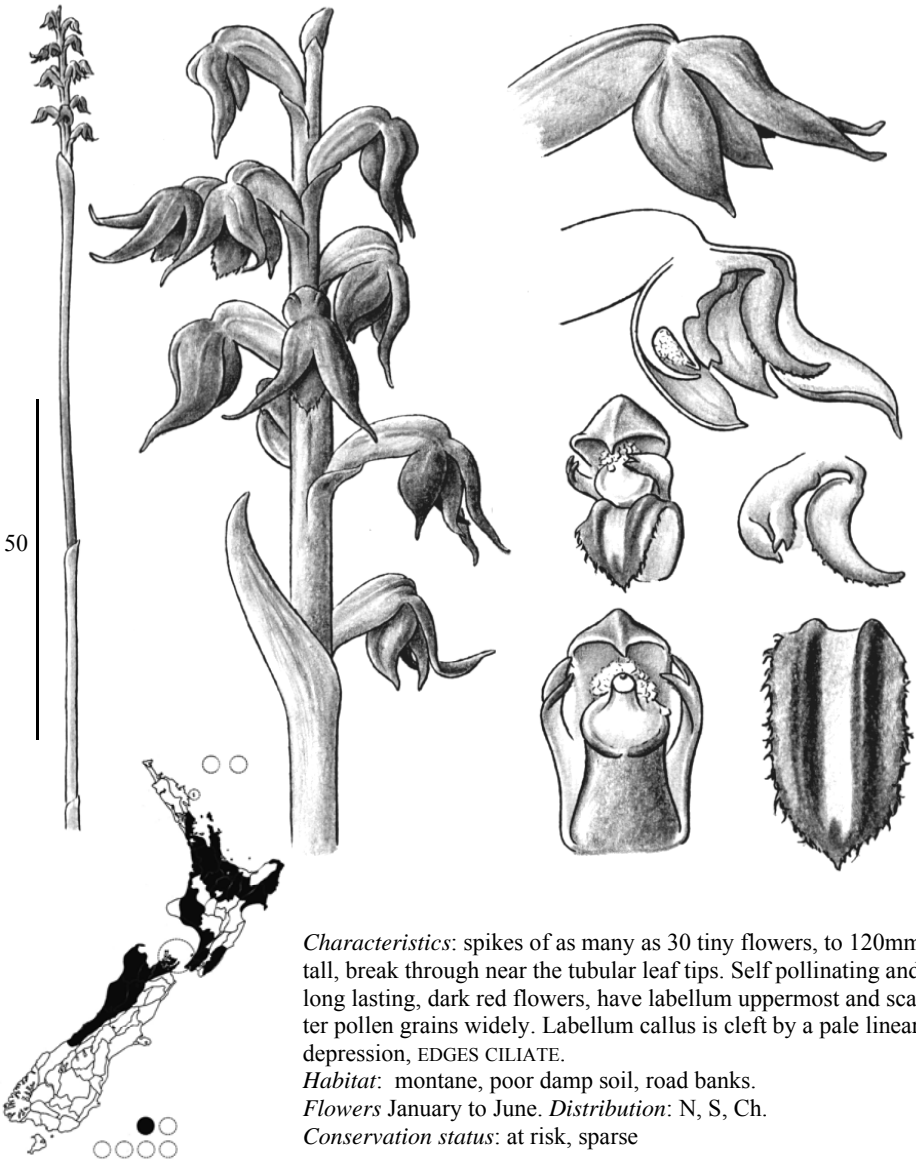
Conservation status: naturally uncommon, vagrant.

Notes: NZ plants match the widespread apomictic Australian species.



Prasophyllum alliance

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



Characteristics: spikes of as many as 30 tiny flowers, to 120mm tall, break through near the tubular leaf tips. Self pollinating and long lasting, dark red flowers, have labellum uppermost and scatter pollen grains widely. Labellum callus is cleft by a pale linear depression, EDGES CILIATE.

Habitat: montane, poor damp soil, road banks.
Flowers January to June. *Distribution:* N, S, Ch.
Conservation status: at risk, sparse

Prasophyllum alliance
Corunastylis pumila

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

Characteristics: Generally up to 120mm tall; spikes of up to 30 cream green flowers with red-dish base uppermost, emerge from the side of the tubular leaf, leaving the FREE TIP AMONG THE FLOWERS. Nonresupinate bell-like flowers. LABEL-LUM EDGES MINUTELY SERRULATE BUT NOT CILI-ATE.

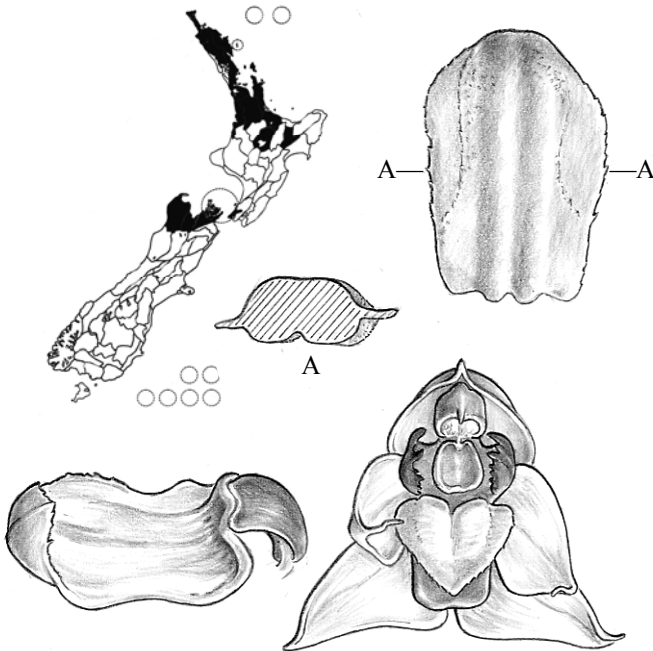
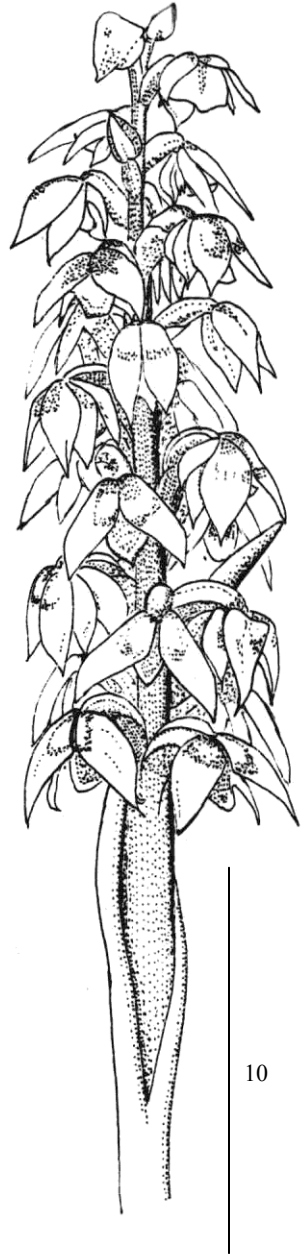
Habitat: locally common in gumland scrub & on clay banks in regenerating kauri forest, light shade.

Flowers March to April, though apparently fresh for several months.

Distribution: N, S.

Conservation status: at risk, sparse.

Notes: easily overlooked as a result of its autumn flowering.



Prasophyllum alliance

Prasophyllum colensoi Hook.f. *Flora Nov. Zel.* 1:241



Characteristics: 100-300mm tall. Lateral sepals (uppermost) unite to some extent. Closely spaced flowers vary from reddish to yellowish green; labelum oval, recurved, margins smooth, callus extending over curve almost to tip. The tubular leaf usually exceeds the flower spike. Pollinia are attached to the rostellum by a threadlike stipe; the rostellum is longer, and the COLUMN ARMS SHORTER THAN THE ANTHER. BLUNT FLORAL BRACTS.

Habitat: sea level to alpine fell fields.

Flowers October to February.

Distribution: N, S, St, Ch, Ant, AkIs.

Conservation status: not threatened.

Notes: a very widespread and variable species, probably including several taxa (including *Prasophyllum* "A" and "B").



Prasophyllum alliance
Prasophyllum colensoi agg.
Prasophyllum "A"



Characteristics: similar to *Prasophyllum colensoi* except that the colours are more variegated, and the COLUMN ARMS ARE AS LONG AS THE ANTHOR.

Prasophyllum alliance:
Prasophyllum colensoi agg. **Prasophyllum “B”**



Characteristics: taller than *P. colensoi*, with SLENDER TEPALS, often growing in shallow water; COLUMN ARMS AS LONG AS ANTHOR. Oval, POINTED FLORAL BRACTS.

Distribution: N.

Prasophyllum alliance: Prasophyllum hectorii (Buchanan)

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



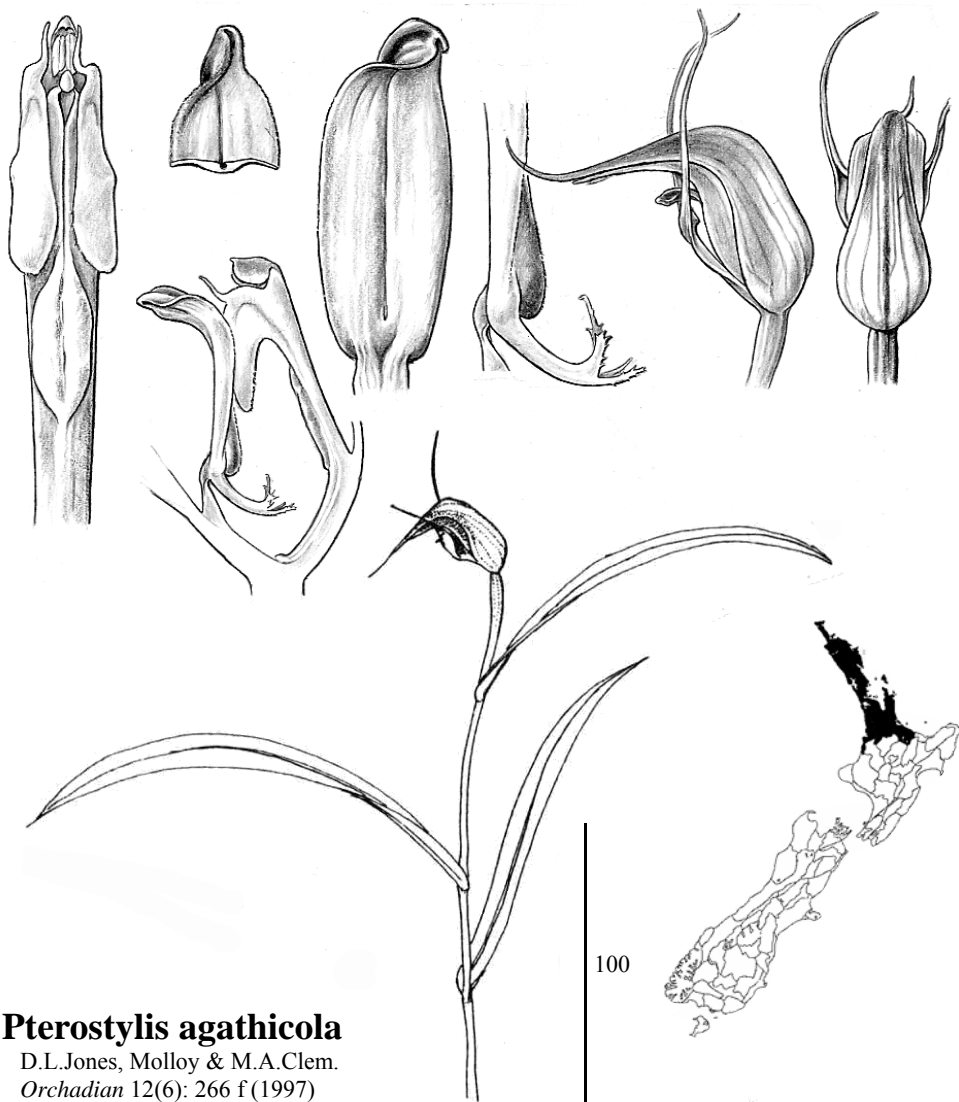
Characteristics: TALL PLANTS, to 900mm, the flowers often green, flushed red/purple. Labellum uppermost on a very short claw, MARGINS USUALLY WHITE, showy; sharply bent at middle, callus smooth, flushed pale green, rather narrow and reaching just beyond the bend. STRONGLY PERFUMED to many people. Pollinia here withdrawn from anther on a slender stipe.

Habitat: in *Baumea/Schoenus* sedgeland, in flowing or still water, its roots barely touching the peat.

Flowers December to February. *Distribution:* N, S, Ch.

Conservation status: acutely threatened, nationally vulnerable.

Notes: several colour forms: Chatham Island plants are completely yellow.



Pterostylis agathicola

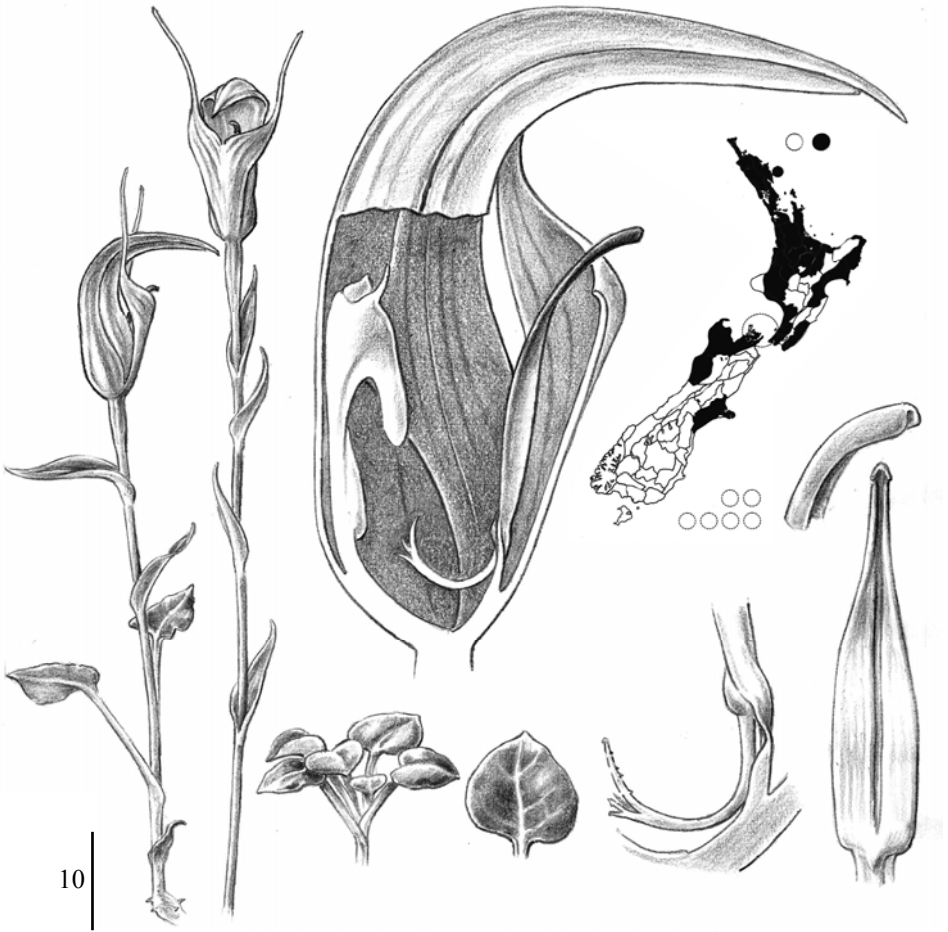
D.L.Jones, Molloy & M.A.Clem.
Orchadian 12(6): 266 f (1997)

Characteristics: 3–4 spreading grassy leaves, sometimes horizontal. Raised midrib of labellum usually reddish, the tip constricted and twisted somewhat to the right. BASE OF THE FLOWER BROADER THAN THE TOP GIVING A DISTINCTIVE FAT-BOTTOMED LOOK. Occasional twin flowers.

Habitat: COMMON ONLY IN KAURI FOREST.

Flowers July to September. *Distribution:* N.

Conservation status: not threatened.



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

Syn: *Diplodium alobulum* (Hatch) D.L.Jones, Molloy & M.A.Clem. *Aust. Orch. Res.* 4: 70 (2003)

Characteristics: 150mm plant, 20mm flower; hood tip usually horizontal; LABELLUM ARCHED, TAPERING TO INVERTED U AT TIP; lateral sepals diverging to form a flat V sinus, LACKING THE FORWARD JUTTING “JUG-SPOUT” of *P. trullifolia*, *P. brumalis* and *P. alveata*.

Habitat: scrub and well lit forest. *Flowers* April to October.

Distribution: 3K, PK, N, S. *Conservation status:* not threatened. *Notes:* Juvenile rosettes have 3 or 4 stalked shovel shaped leaves; adults narrow leaves more or less evenly spaced up the stem; young adults have juvenile leaves at the base, adult leaves nearer the flower.

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

Syn: *Diplodium alveatum* (Garnet) D.L.Jones, Molloy & M.A.Clem. *Aust. Orch. Res.* 4: 70 (2003)

Characteristics: Flowerless plants have a rosette of round leaves (much larger than those of *P. trullifolia* and *P. alobula*) but flower stems have only erect bractlike leaves. Dorsal sepal with WIRELIKE APICULUS can completely obscure the ERECT, DARK BROWN OBTUSE LABELLUM. Sinus to lateral sepals protrudes like a jug spout.

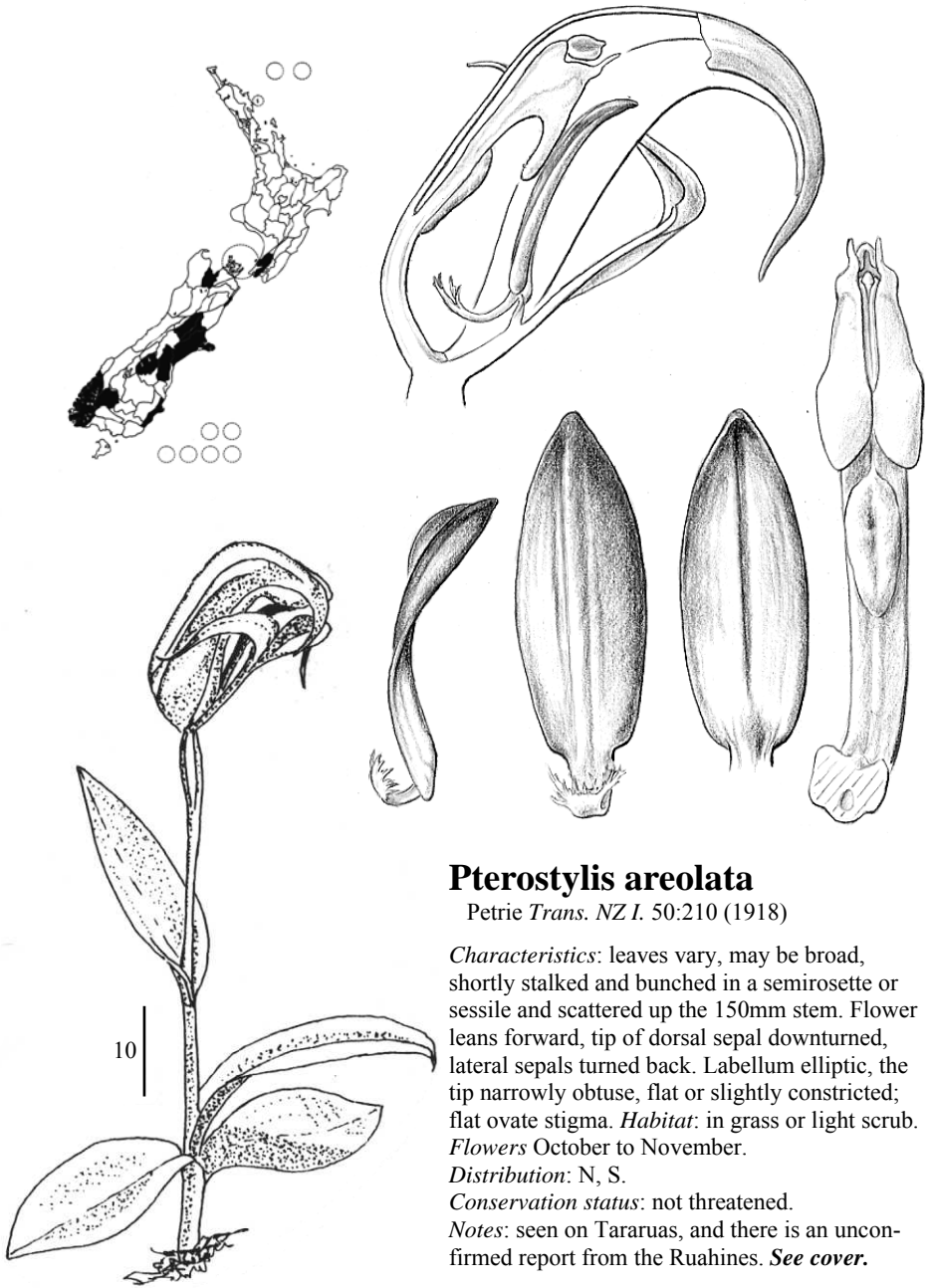
Habitat: Poor soils in tea tree and gorse. *Flowers* February to May.

Distribution: S: northwest Nelson only.

Conservation status: non-resident native, coloniser.

Notes: a recently discovered Australian migrant.





Pterostylis areolata

Petrie *Trans. NZI.* 50:210 (1918)

Characteristics: leaves vary, may be broad, shortly stalked and bunched in a semirosette or sessile and scattered up the 150mm stem. Flower leans forward, tip of dorsal sepal downturned, lateral sepals turned back. Labellum elliptic, the tip narrowly obtuse, flat or slightly constricted; flat ovate stigma. *Habitat:* in grass or light scrub. *Flowers* October to November.

Distribution: N, S.

Conservation status: not threatened.

Notes: seen on Tararuas, and there is an unconfirmed report from the Ruahines. *See cover.*

Pterostylis auriculata Col. Trans. NZ I. 22: 489 (1890)

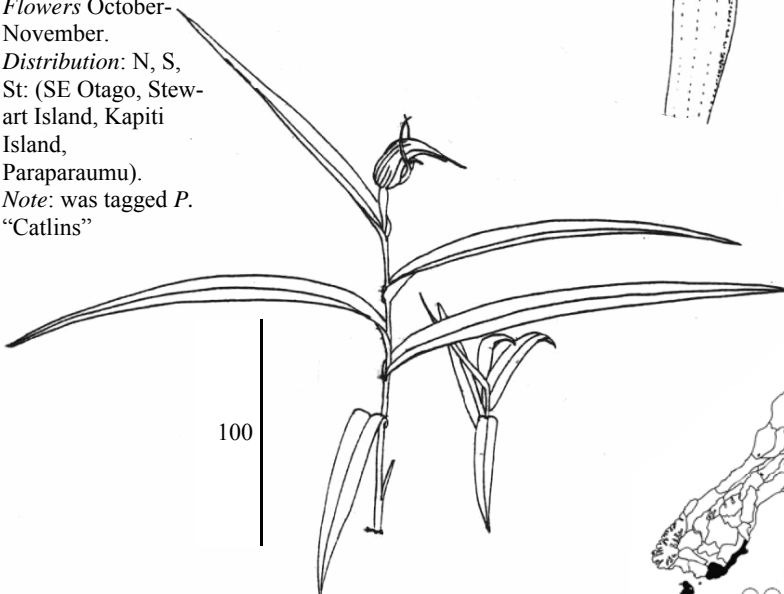
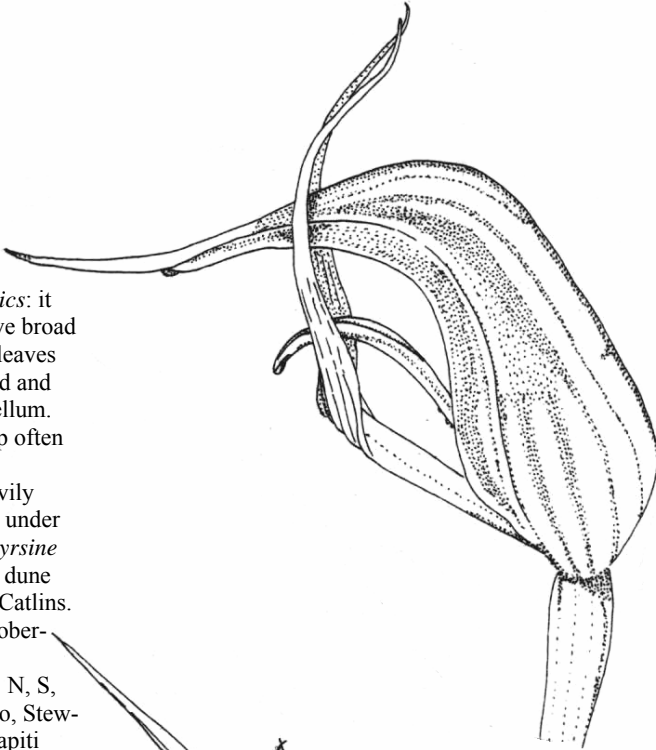
Characteristics: it has distinctive broad long arched leaves and an arched and tapering labellum. Stems and lip often red.

Habitat: heavily shaded areas under kamahi & *Myrsine* on Kapiti, in dune forest in the Catlins.

Flowers October-November.

Distribution: N, S, St: (SE Otago, Stewart Island, Kapiti Island, Paraparaumu).

Note: was tagged *P.* "Catlins"



+



Pterostylis australis

Hook.f. *Flora Nov. Zel.* 1:248 (1853)

Characteristics: somewhat resembling *P. banksii* and *P. areolata*, but shorter, broader leaves (especially at the base) than *P. banksii*, much shorter dorsal sepal than *P. banksii*; lateral sepals long and spreading; labellum tip arched. Intermediate forms are common.

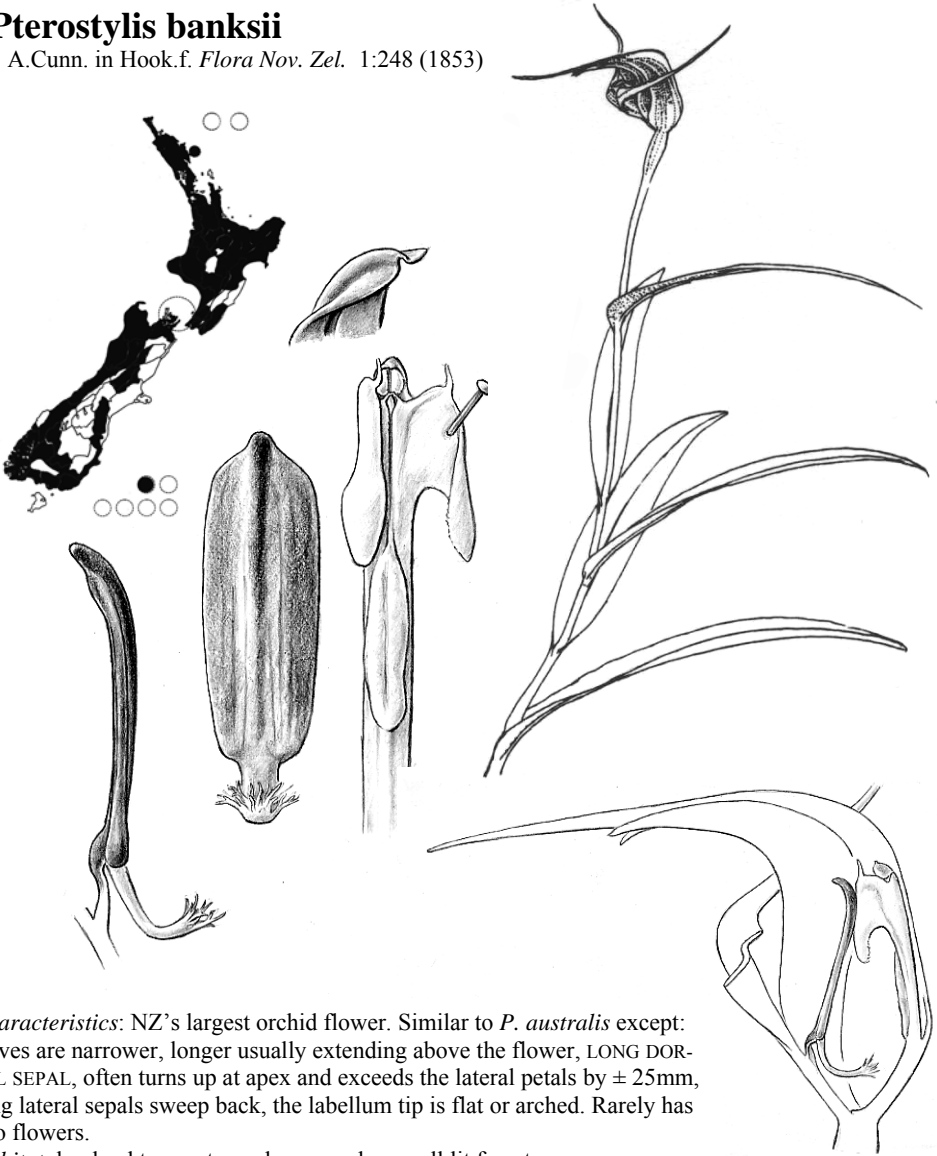
Habitat: lowland to montane scrub and beech forest.

Flowers November to December.

Distribution: N, S, St. *Conservation status:* not threatened.

Pterostylis banksii

A.Cunn. in Hook.f. *Flora Nov. Zel.* 1:248 (1853)



Characteristics: NZ's largest orchid flower. Similar to *P. australis* except: leaves are narrower, longer usually extending above the flower, LONG DORSAL SEPAL, often turns up at apex and exceeds the lateral petals by ± 25 mm, long lateral sepals sweep back, the labellum tip is flat or arched. Rarely has two flowers.

Habitat: lowland to montane, damp scrub or well lit forest.

Flowers October to November. *Distribution:* PK, N, S, St, Ch.

Conservation status: not threatened.

Notes: variable with habitat in different districts: e.g. a smaller version (*P. aff. banksii*) grows north of Wellington

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

Syn: *Diplodium brumale* (L.B.Moore) D.L.Jones, Molloy & M.A.Clem. *Aust. Orch. Res.* 4: 70 (2003)



Characteristics: the dorsal sepal (usually strongly incurved) and petals held horizontally give the plant a COBRA-HOODED APPEARANCE. Prominent jug-spout sinus of lateral sepals. Labellum narrow-triangular and protruding. Stem-leaves relatively long and broad and tend to be BUNCHED TOWARD THE TOP of the stem. Juvenile rosettes stand taller with larger leaves than *P. alobula*.

Habitat: confined to the immediate vicinity of the kauri, in shady spots.

Flowers April to July. *Distribution:* N.

Conservation status: not threatened. *Notes:* plants have distinct juvenile and adult stages.

Pterostylis cardiostigma D.A.Cooper NZ J. Bot. 21(1):97



Characteristics: grass-leaved. Named for its LOBED, HEART SHAPED STIGMA. The plant is very erect and compact, and has been mistaken for a budding *P. banksii*. The upright flower, with the tapering reddish labellum peeping through a V sinus, is unmistakable.

Habitat: lowland to subalpine, damp scrub and forest (incl. *Pinus nigra*).

Flowers October to December.

Distribution: N, S.

Conservation status: not threatened.

Pterostylis cernua

D.L.Jones, Molloy & M.A.Clem.
Orchadian 12(6):267 f (1997)



Characteristics: similar to the short-tepalled form of *P. graminea* found in sphagnum and swamps in several sites. Nonflowering plants to 60mm tall with 3–5 lanceolate leaves. Flowering plants to 120mm with 4–5 sheathing, grasslike leaves. Labellum dark green with central blackish green callus, leans through the V sinus of the lateral sepals. Ovary has 6 orange ribs.

Habitat: in grass and *Sphagnum* moss, montane road verge.

Flowers November to January. *Distribution:* S.

Conservation status: threatened, critically endangered.

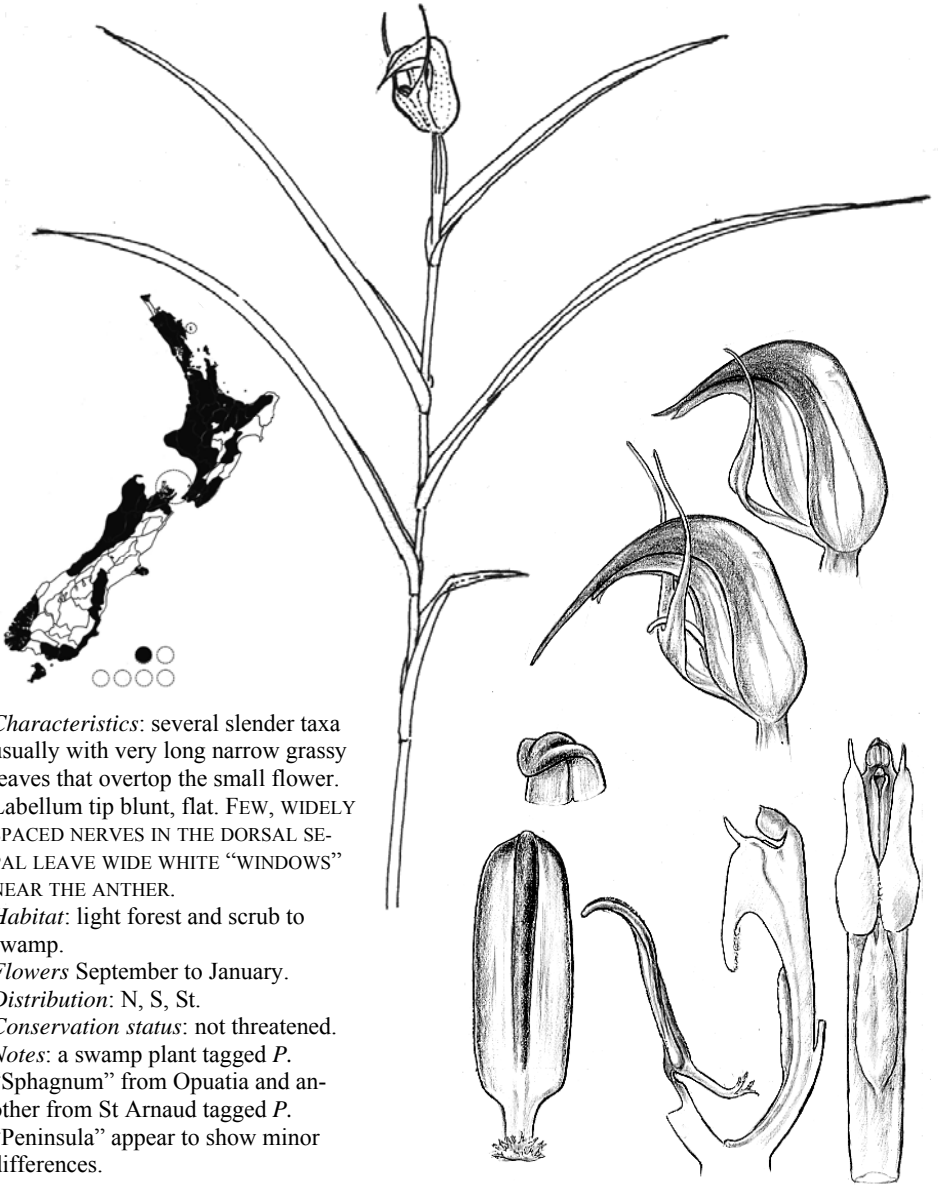
Notes: although listed as critically endangered, its habitat is widespread in Westland.

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



Characteristics: ELLIPTIC LEAVES IN A SEMIROSETTE; stem with one or two leafy sheathing bracts. Plant to 300mm tall, the stem elongating greatly after fertilisation. ERECT FLOWER with SHORT DORSAL SEPAL STOPPING LEVEL WITH THE PETALS. Labellum, pale under, dark green on top, tapers gradually to apex. *Habitat:* Grassland, scrub, tracksides and well lit pine forest. *Flowers* October to December. *Distribution:* N, S. *Conservation status:* not threatened.

Pterostylis graminea agg. Hook.f. *Flora Nov. Zel.* 1:248 (1853)



Characteristics: several slender taxa usually with very long narrow grassy leaves that overtop the small flower. Labellum tip blunt, flat. FEW, WIDELY SPACED NERVES IN THE DORSAL SEPAL LEAVE WIDE WHITE “WINDOWS” NEAR THE ANTHOR.

Habitat: light forest and scrub to swamp.

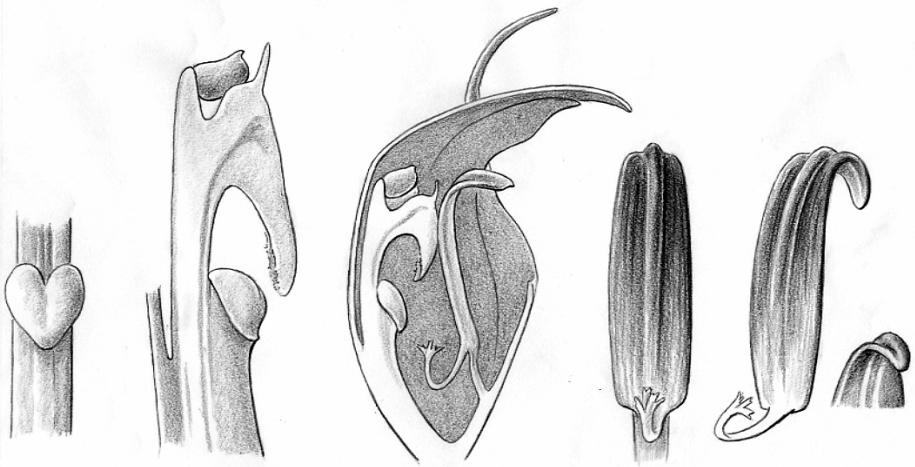
Flowers September to January.

Distribution: N, S, St.

Conservation status: not threatened.

Notes: a swamp plant tagged *P.* “Sphagnum” from Opuatia and another from St Arnaud tagged *P.* “Peninsula” appear to show minor differences.

Pterostylis humilis R.S.Rogers *Trans.Roy.Soc.S.Aust.* 46:151 (1922)



Characteristics: 45-50mm tall plant with a rosette of 3-4 elliptic bluish green leaves. Otherwise similar to *P. venosa* except: THE STIGMA IS PROMINENT, HEART SHAPED AND UPWARD FACING.

Habitat: montane track sides to high subalpine scrub.

Flowers November to January.

Distribution: N, S.

Conservation status: not threatened.



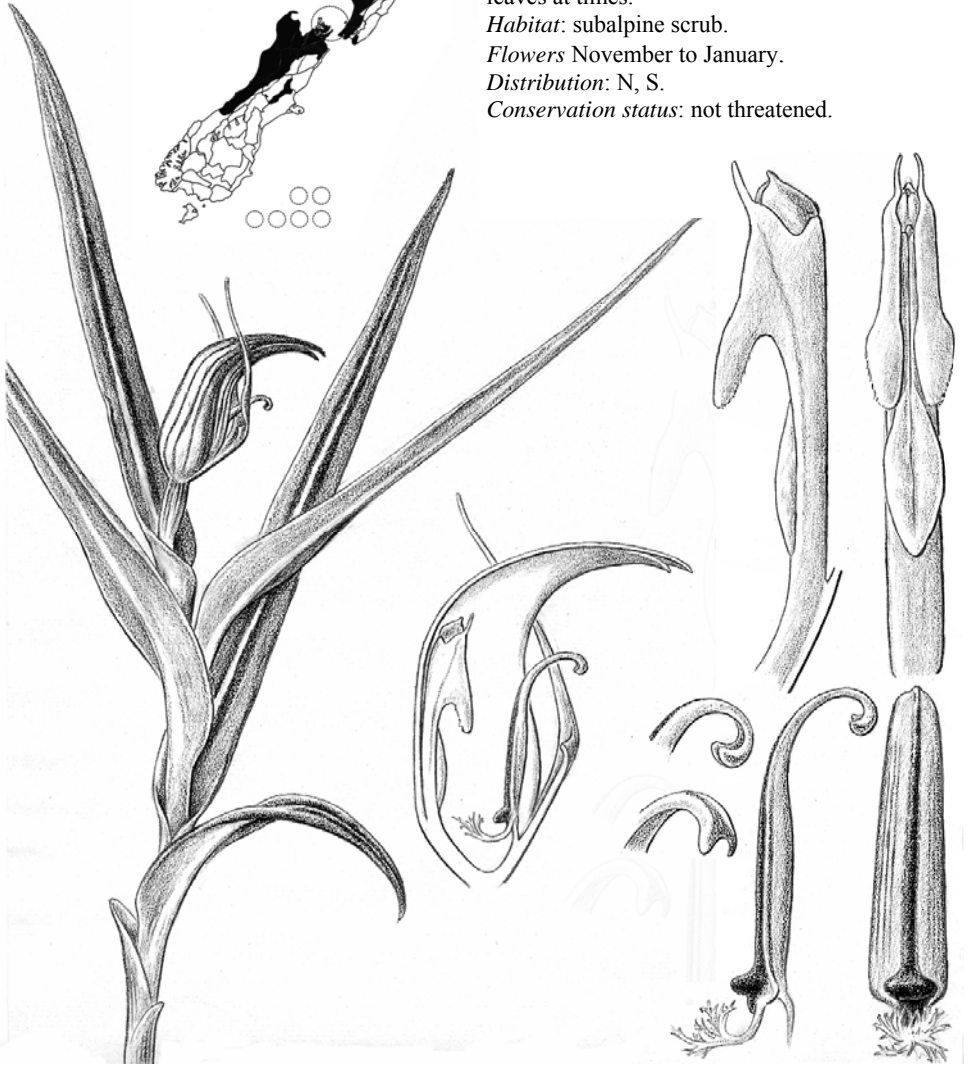
Characteristics: grass leaved species; pale LABELLUM TAPERS GRADUALLY AND CURLS AT THE TIP to a miniature drainers scoop, it has a PROMINENT DARK CALLUS AT THE BASE and sometimes smaller calli up the dark midrib. Quite reddish flower parts and midrib of the leaves at times.

Habitat: subalpine scrub.

Flowers November to January.

Distribution: N, S.

Conservation status: not threatened.



Pterostylis irsoniana Hatch *Trans.Roy.Soc. NZ* 78:104 t18 (1950)



Pterostylis irwinii

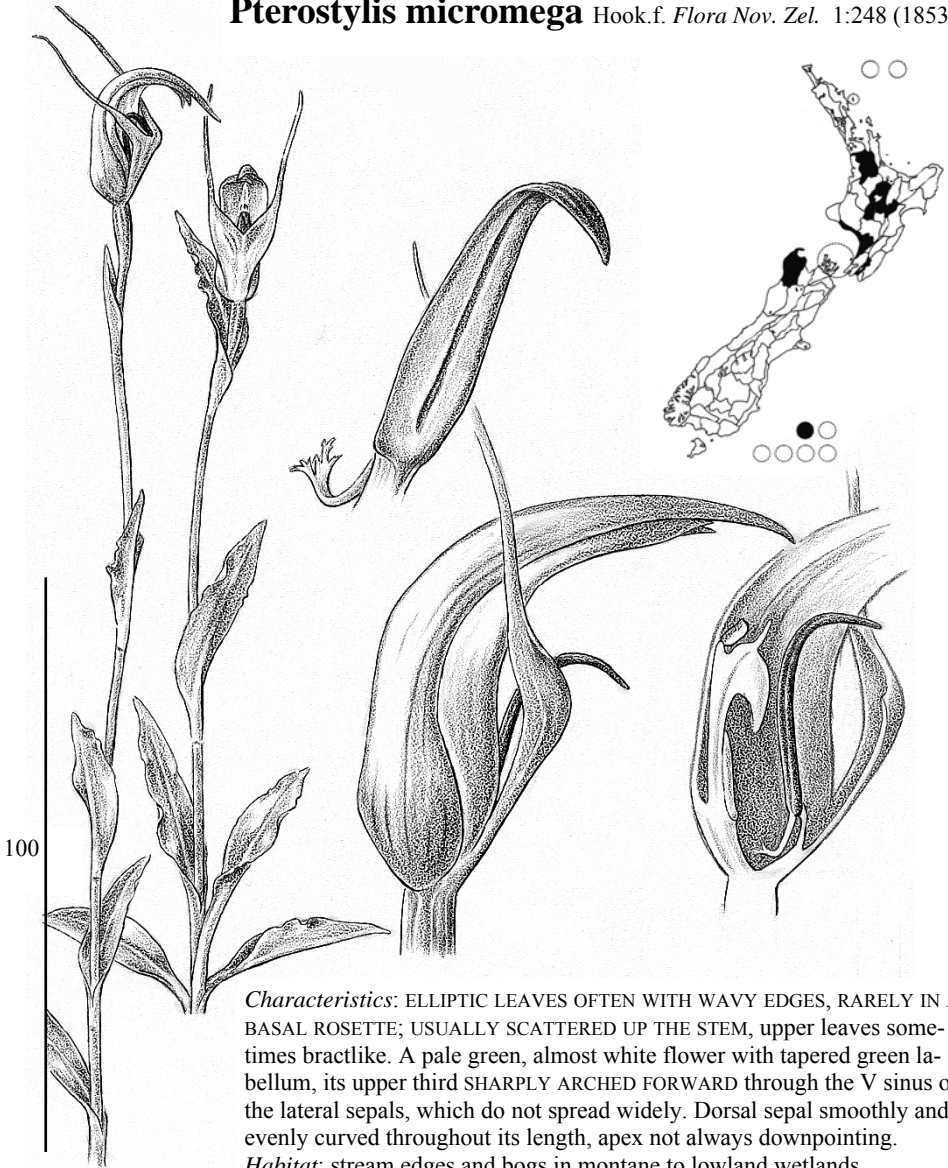
D.L.Jones, Molloy & M.A.Clem.
Orchadian 12(6): 269 f (1997)

Characteristics: a large, slender-leaved plant sometimes with reddish tepal ends. Lateral sepals incurved, CAUSING SEPALS TO LEAN FORWARD of the upright flower forming an inward turning jug spout at the sinus; the labellum is dark and tapered.

Habitat: in light scrub or forest.

Flowers November to December. *Distribution:* N, S. *Conservation status:* not threatened.

Pterostylis micromeга Hook.f. *Flora Nov. Zel.* 1:248 (1853)



Characteristics: ELLIPTIC LEAVES OFTEN WITH WAVY EDGES, RARELY IN A BASAL ROSETTE; USUALLY SCATTERED UP THE STEM, upper leaves sometimes bractlike. A pale green, almost white flower with tapered green labellum, its upper third SHARPLY ARCHED FORWARD through the V sinus of the lateral sepals, which do not spread widely. Dorsal sepal smoothly and evenly curved throughout its length, apex not always downpointing.

Habitat: stream edges and bogs in montane to lowland wetlands.

Flowers November to February.

Distribution: N, S. (there is also an old Chathams record).

Conservation status: threatened: endangered.

Pterostylis montana *sensu* L.B.Moore *Flora NZ Vol II* (1970)

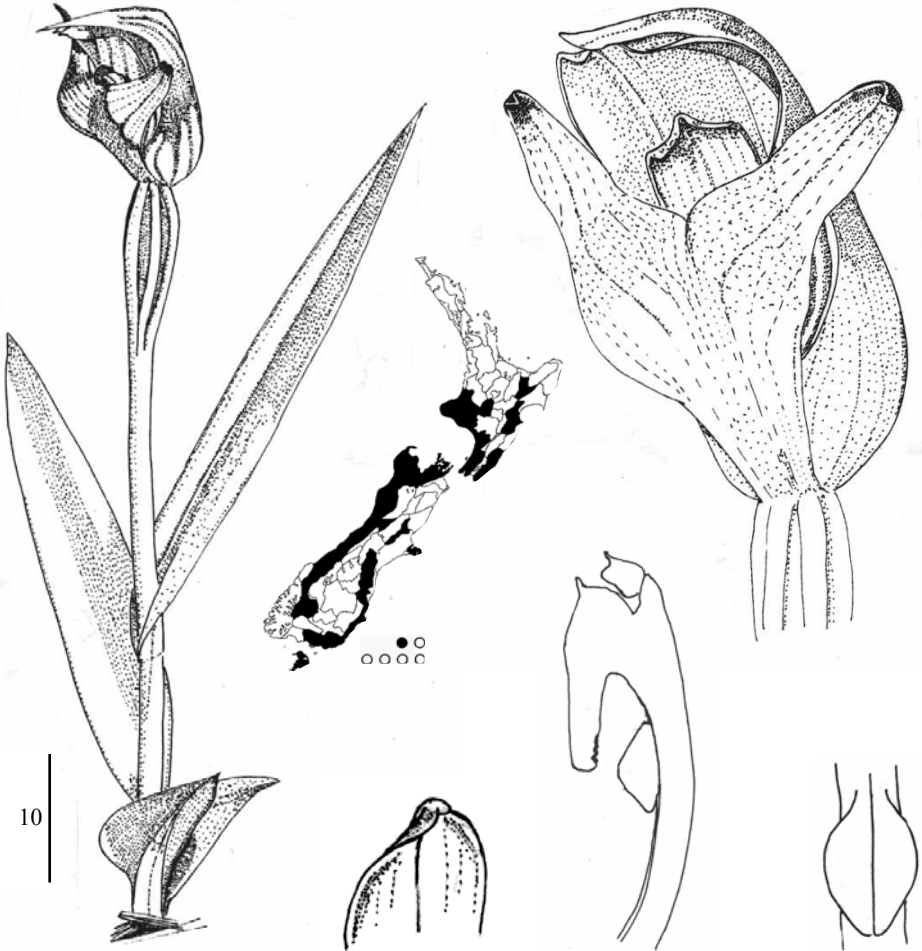
Characteristics: erect, often bronze-coloured grasslike leaves sheathe the flower stem. Flower self-pollinating, upright, chunky. Lateral sepals separate from one another in young bud, free lobes pointed, flat (not tubular), barely exceeding dorsal and inclined to curve forward when mature. Labellum little arched, stout, oblong, THE APEX CONSTRICTED AND TWISTED TO THE RIGHT. Column stout, the heart shaped or globular stigma very prominent.

Habitat: often in wetlands, but any damp grassland.

Flowers November to December. *Distribution:* N, S, St, Ch.

Conservation status: not threatened.

Notes: we are unable to agree which is the true *P. montana*.



Pterostylis montana

sensu Hatch *Trans.Roy.Soc. NZ* 77:239 t22



Characteristics: this is a variable form, the plant to 200mm, the acute leaves more or less upright, the flower leaning forward, its lateral sepals tubular towards apices, the stigma elongated and rather flat.

Habitat: grassland, under scrub. *Flowers* September to December.

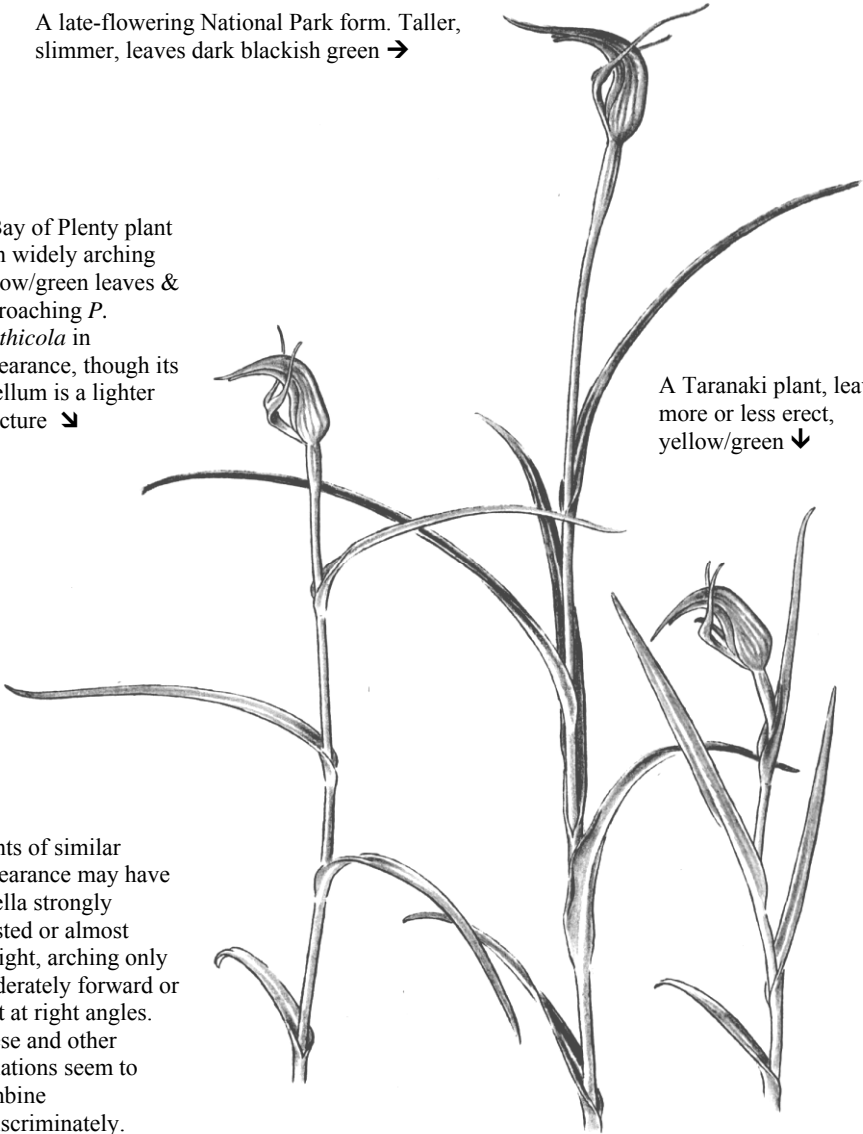
Distribution: N, S, St. *Notes:* Hatch described *P. montana* in 1949, from Stewart Island plants. This and the plant illustrated on the previous page are on the Type sheet and on Stewart Is. We are unable to agree which is the true *P. montana*. Some North Island forms are shown in the following pages.

Pterostylis aff. montana Three forms from North Island sites, showing variation in habit, colour of leaves and times of flowering.

A late-flowering National Park form. Taller, slimmer, leaves dark blackish green →

A Bay of Plenty plant with widely arching yellow/green leaves & approaching *P. agathicola* in appearance, though its labellum is a lighter structure ↘

A Taranaki plant, leaves more or less erect, yellow/green ↓



Plants of similar appearance may have labella strongly twisted or almost straight, arching only moderately forward or bent at right angles. These and other variations seem to combine indiscriminately.

Pterostylis aff. montana

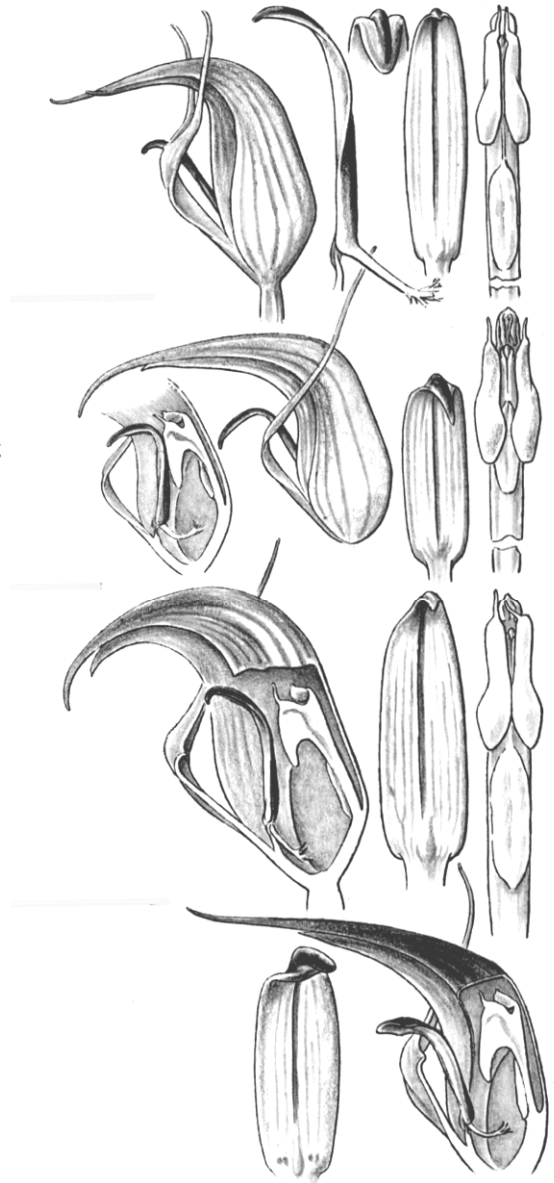
Structures can vary greatly and are often inconsistent within a colony. Examples are shown here.

A flower from Bay of Plenty more or less typical of *P. aff. montana* over most of its range.

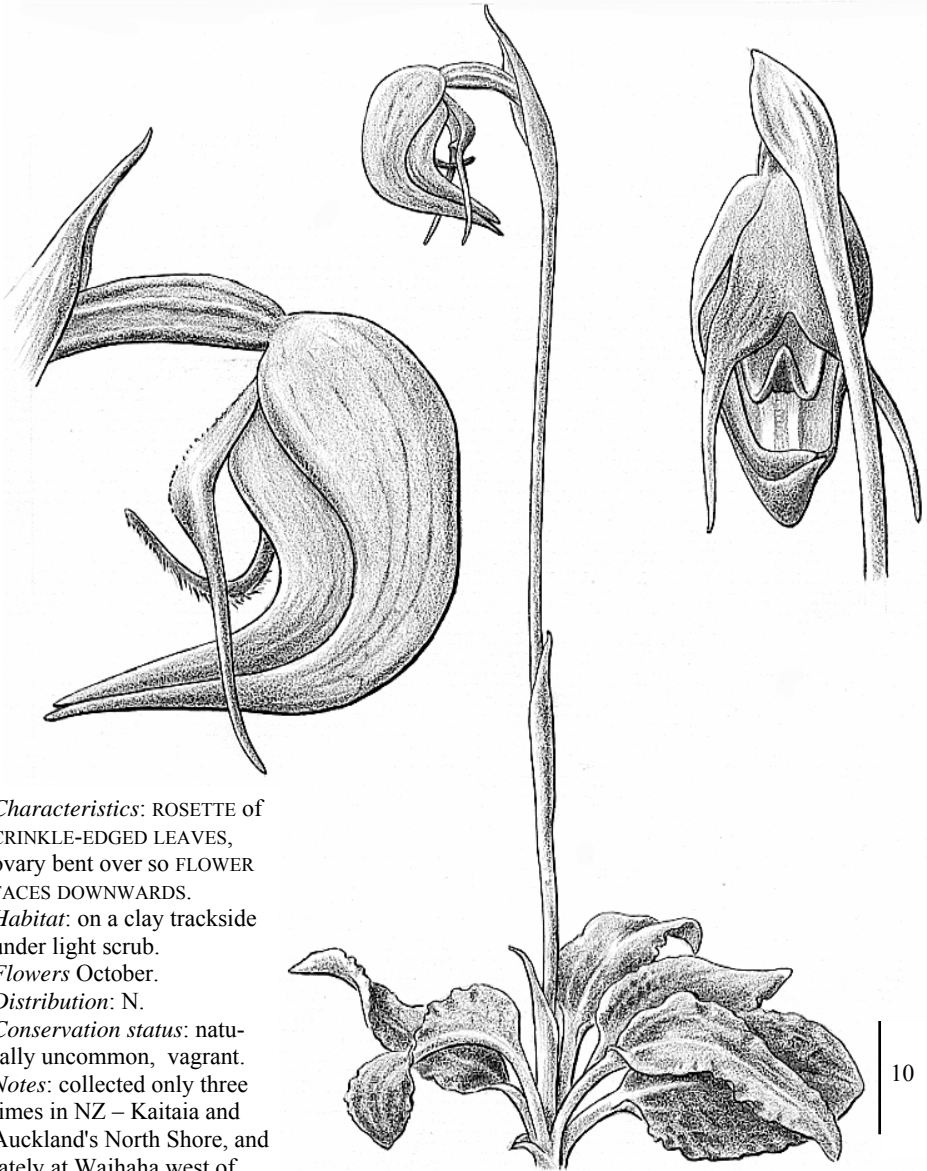
A flower from Central Volcanic Plateau with longer sepals & very long labellum abruptly downcurved, the apex very tapered. The stigma is much higher on the column than usual.

A flower from Taihape, much larger than usual, and with very short lower lobes on the column wings. Basal appendage of labellum straight.

A very late flower from Volcanic Plateau. The labellum heavily built much as in *P. agathicola* and strongly twisted. Basal appendage curved. Plants from Central Volcanic Plateau appear to vary more than plants from other areas.



Pterostylis nutans R.Br. *Prodr.* 1:327 (1810)



Characteristics: ROSETTE of CRINKLE-EDGED LEAVES, ovary bent over so FLOWER FACES DOWNWARDS.

Habitat: on a clay trackside under light scrub.

Flowers October.

Distribution: N.

Conservation status: naturally uncommon, vagrant.

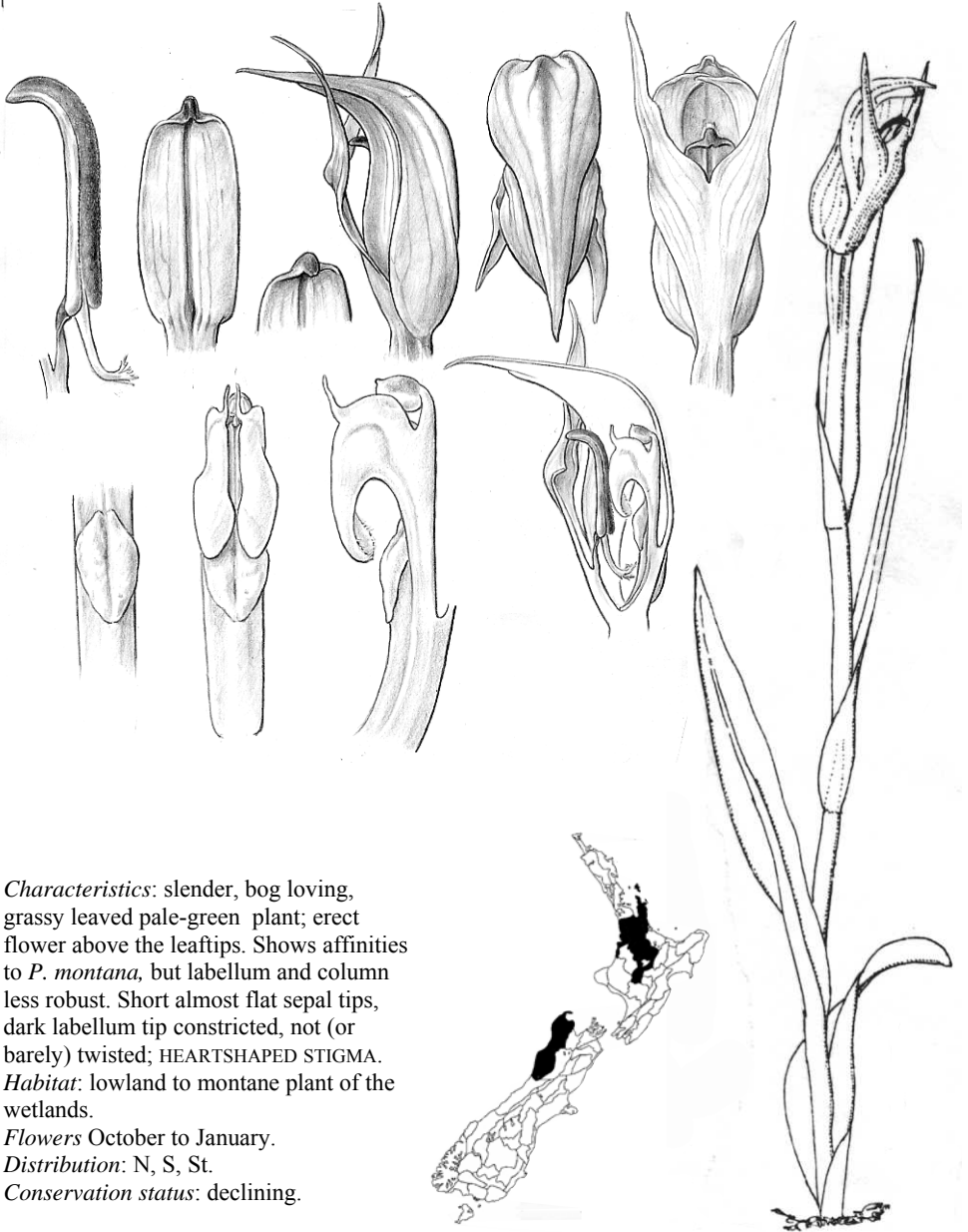
Notes: collected only three times in NZ – Kaitaia and Auckland's North Shore, and lately at Waihaha west of Taupo.

Pterostylis oliveri Petrie *Trans. NZ I.26:270* (1894)

Characteristics: DORSAL SEPAL DEFLEXED AS IN *P. PATENS*, BUT LATERAL SEPAL TIPS LONG AND ERECT, DIVERGING AT A NARROW ANGLE; labellum narrow triangular. Stem sts decumbent as shown.
Habitat: montane to sub-alpine open scrub and low bush.
Flowers December to January. *Distribution:* S.
Conservation status: not threatened.



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



Characteristics: slender, bog loving, grassy leaved pale-green plant; erect flower above the leaftips. Shows affinities to *P. montana*, but labellum and column less robust. Short almost flat sepal tips, dark labellum tip constricted, not (or barely) twisted; HEARTSHAPED STIGMA.

Habitat: lowland to montane plant of the wetlands.

Flowers October to January.

Distribution: N, S, St.

Conservation status: declining.

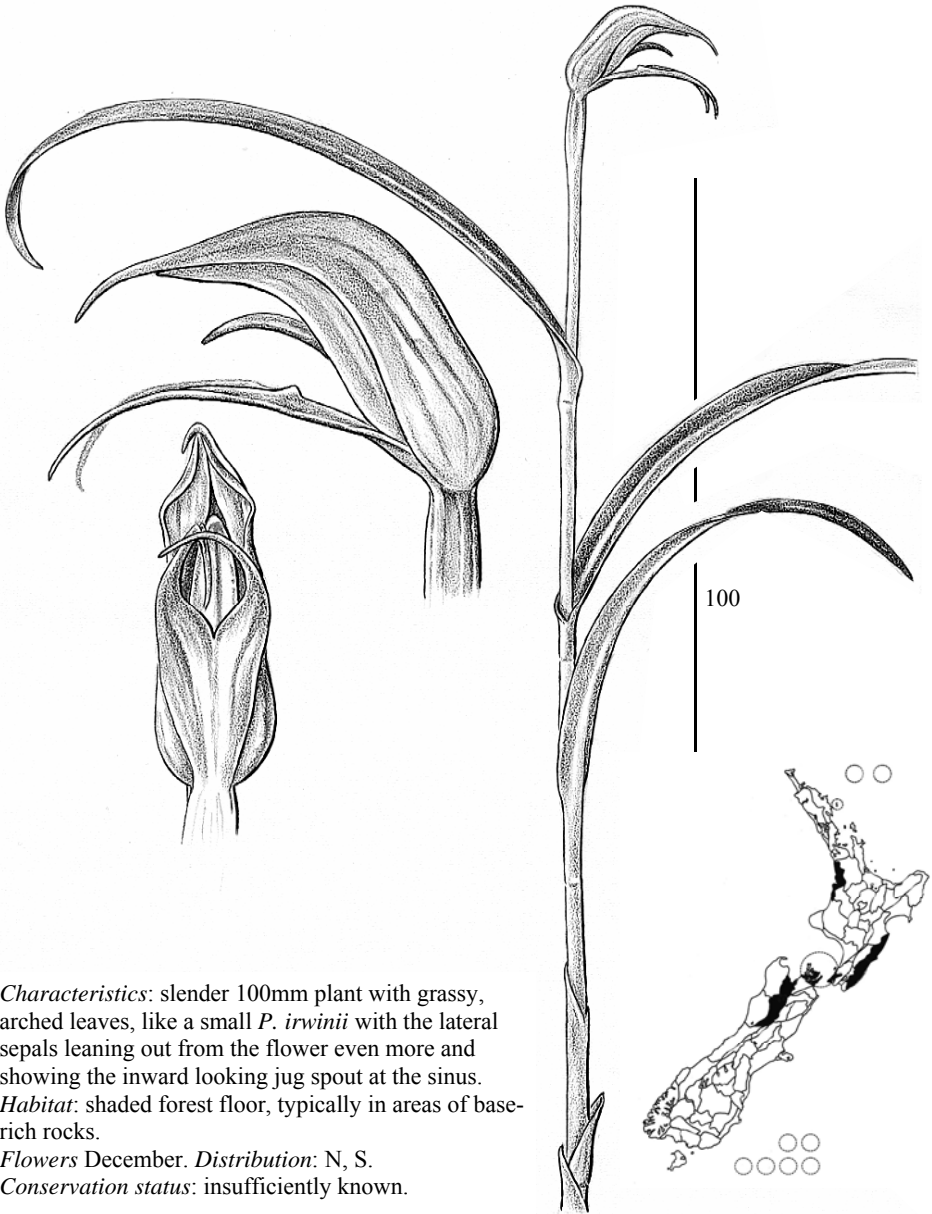


Pterostylis patens Colenso *Trans. NZ I.* 18:270 (1886)

Characteristics: wide grassy leaves, usually wider and shorter than those of *P. banksii*. At maturity the lateral SEPAL TIPS ARE TURNED BACK AND DOWN, sometimes meeting behind the ovary. DORSAL SEPAL TURNED DOWN. *Habitat:* grows in a range of upland sites. *Flowers* December to January. *Distribution:* N. *Conservation status:* not threatened.

Note: the montane/subalpine equivalent of *P. banksii*.

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



Characteristics: slender 100mm plant with grassy, arched leaves, like a small *P. irwinii* with the lateral sepals leaning out from the flower even more and showing the inward looking jug spout at the sinus.

Habitat: shaded forest floor, typically in areas of base-rich rocks.

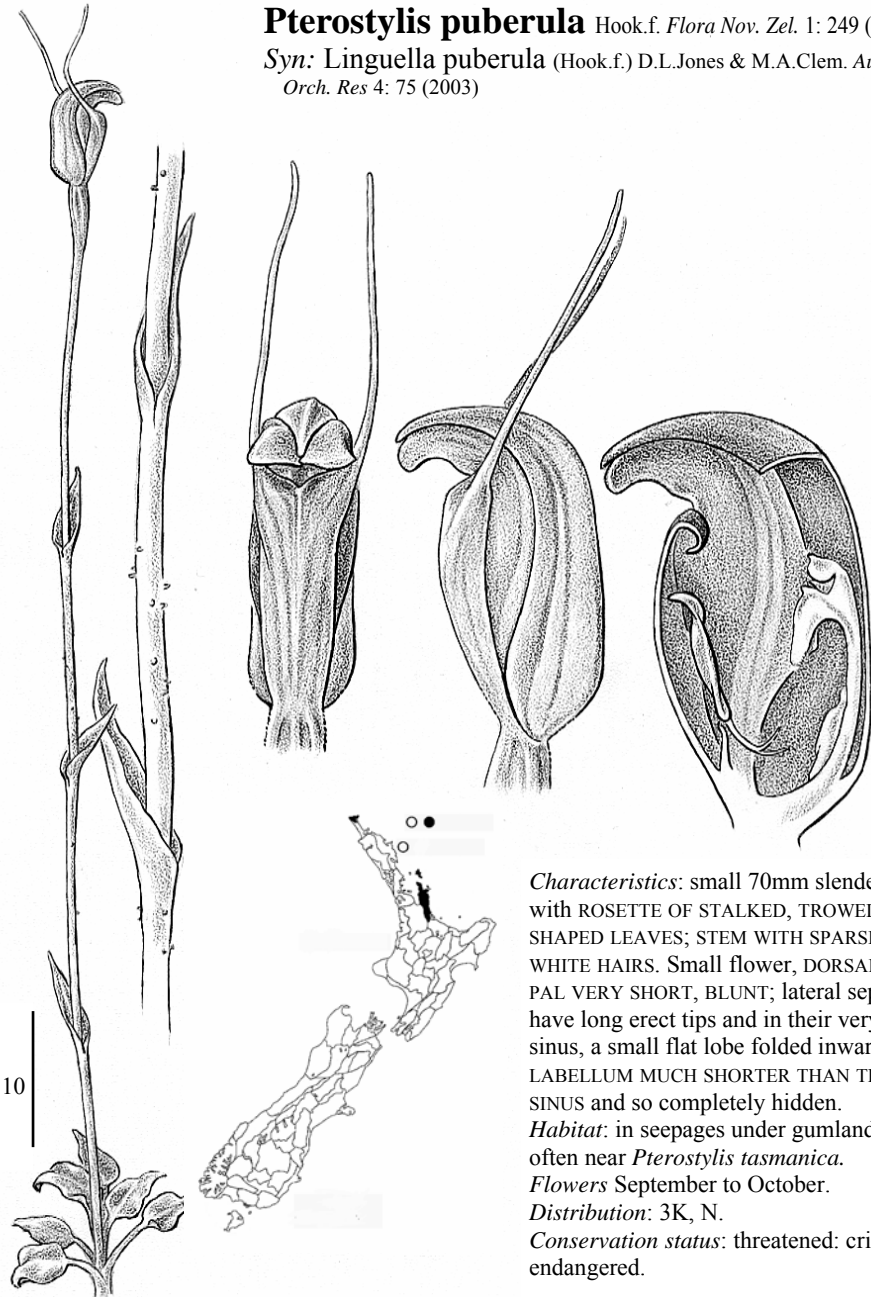
Flowers December. *Distribution:* N, S.

Conservation status: insufficiently known.

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

Syn: *Linguella puberula* (Hook.f.) D.L.Jones & M.A.Clem. *Austr.*

Orch. Res 4: 75 (2003)



Characteristics: small 70mm slender plant with ROSETTE OF STALKED, TROWEL SHAPED LEAVES; STEM WITH SPARSE WHITE HAIRS. Small flower, DORSAL SEPAL VERY SHORT, BLUNT; lateral sepals have long erect tips and in their very high sinus, a small flat lobe folded inward; the LABELLUM MUCH SHORTER THAN THE SINUS and so completely hidden.

Habitat: in seepages under gumland scrub, often near *Pterostylis tasmanica*.

Flowers September to October.

Distribution: 3K, N.

Conservation status: threatened: critically endangered.

Pterostylis silvicultrix

(F. Muell.) D.L. Jones, Molloy & M.A. Clem. *Aust. Orch. Res.* 4: 66 (2003)



Characteristics: Juvenile plants have broadly-ovate, to broadly-elliptic leaves; flowering specimens have a basal set of broadly-ovate/elliptic leaves 25-60mm long by 20-25mm broad, and then narrow lanceolate leaves; galea with very short, often curled, somewhat truncate sepals, overall coloured dark to dull green, pale striping not as pronounced as in *P. banksii*.

Habitat: usually in shaded forest, often under (or as an epiphyte on the trunks of) *Dicksonia fibrosa*. Recently plants have been observed in restiad peat, and around sedges near lake edges.

Flowers November to December.

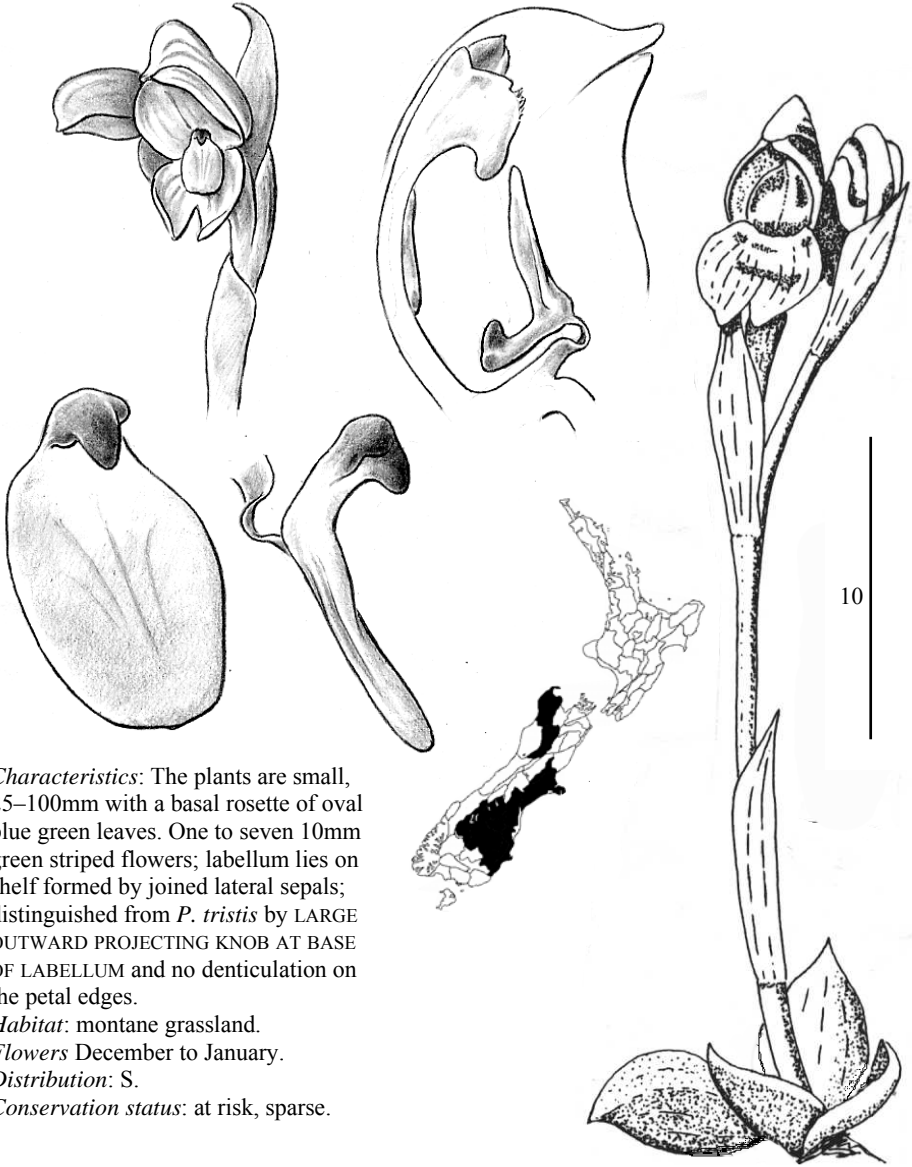
Distribution: Ch: endemic to Chathams.

Conservation status: at risk, range restricted.

Notes: sympatric with *P. banksii* which is less common on the Chathams, and usually grows in more open forest; *P. silvicultrix* has been confused with *P. montana* and *P. australis*.

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

Syn: *Hymenochilus tanypodus* (D.L.Jones, Molloy & M.A.Clem.) D.L.Jones, Molloy & M.A.Clem. *Austr. Orch. Res* 4: 74 (2003)



Characteristics: The plants are small, 25–100mm with a basal rosette of oval blue green leaves. One to seven 10mm green striped flowers; labellum lies on shelf formed by joined lateral sepals; distinguished from *P. tristis* by LARGE OUTWARD PROJECTING KNOB AT BASE OF LABELLUM and no denticulation on the petal edges.

Habitat: montane grassland.

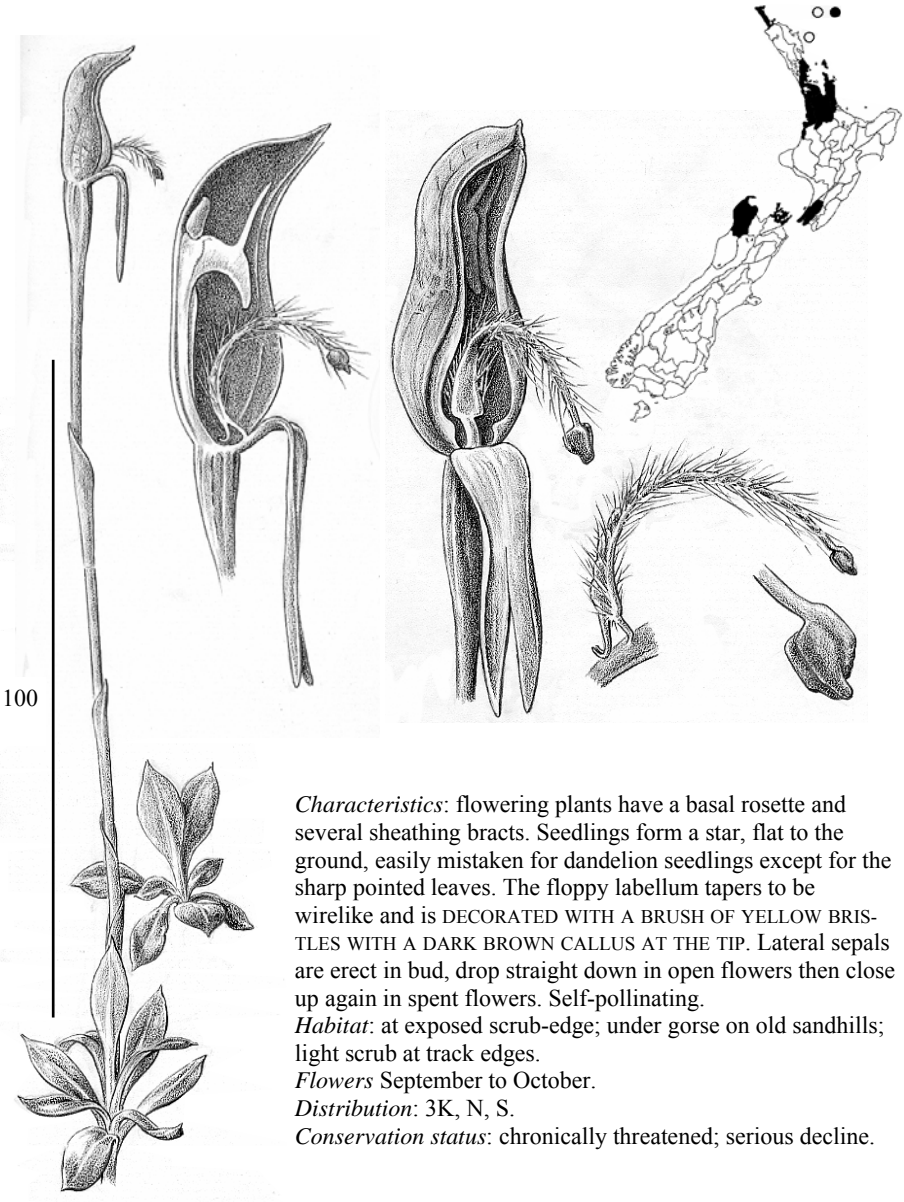
Flowers: December to January.

Distribution: S.

Conservation status: at risk, sparse.

Pterostylis tasmanica D.L.Jones. *Muelleria* 8(2): 177 (1994)

Syn: *Plumatochilos tasmanicus* (D.L.Jones) D.L.Szlachetko *Polish Bot.J.* 46 (1): 22 (2001)



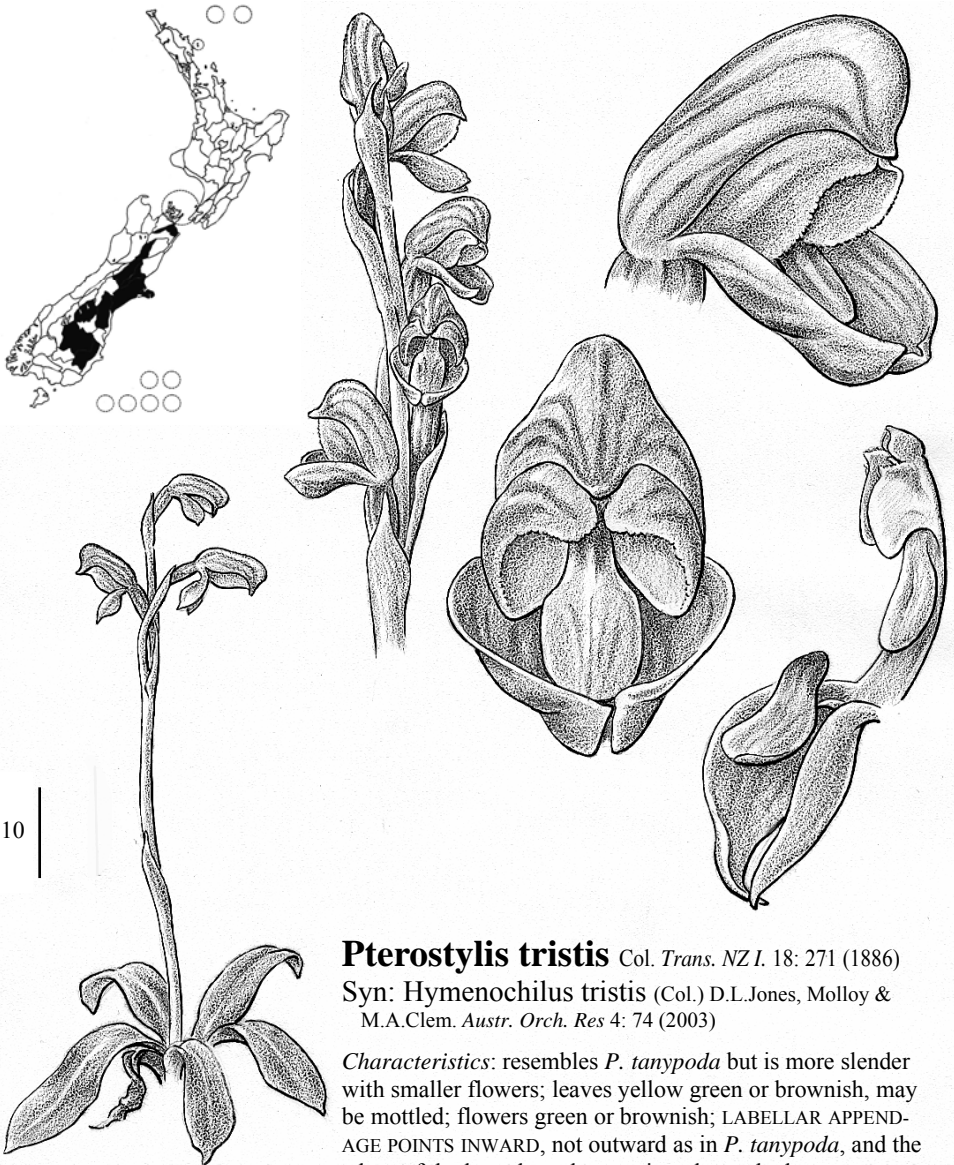
Characteristics: flowering plants have a basal rosette and several sheathing bracts. Seedlings form a star, flat to the ground, easily mistaken for dandelion seedlings except for the sharp pointed leaves. The floppy labellum tapers to be wirelike and is DECORATED WITH A BRUSH OF YELLOW BRISTLES WITH A DARK BROWN CALLUS AT THE TIP. Lateral sepals are erect in bud, drop straight down in open flowers then close up again in spent flowers. Self-pollinating.

Habitat: at exposed scrub-edge; under gorse on old sandhills; light scrub at track edges.

Flowers September to October.

Distribution: 3K, N, S.

Conservation status: chronically threatened; serious decline.



Pterostylis tristis Col. *Trans. NZI.* 18: 271 (1886)

Syn: *Hymenochilus tristis* (Col.) D.L.Jones, Molloy & M.A.Clem. *Austr. Orch. Res* 4: 74 (2003)

Characteristics: resembles *P. tanyпода* but is more slender with smaller flowers; leaves yellow green or brownish, may be mottled; flowers green or brownish; LABELLAR APPENDAGE POINTS INWARD, not outward as in *P. tanyпода*, and the edges of the lateral petals are minutely toothed.

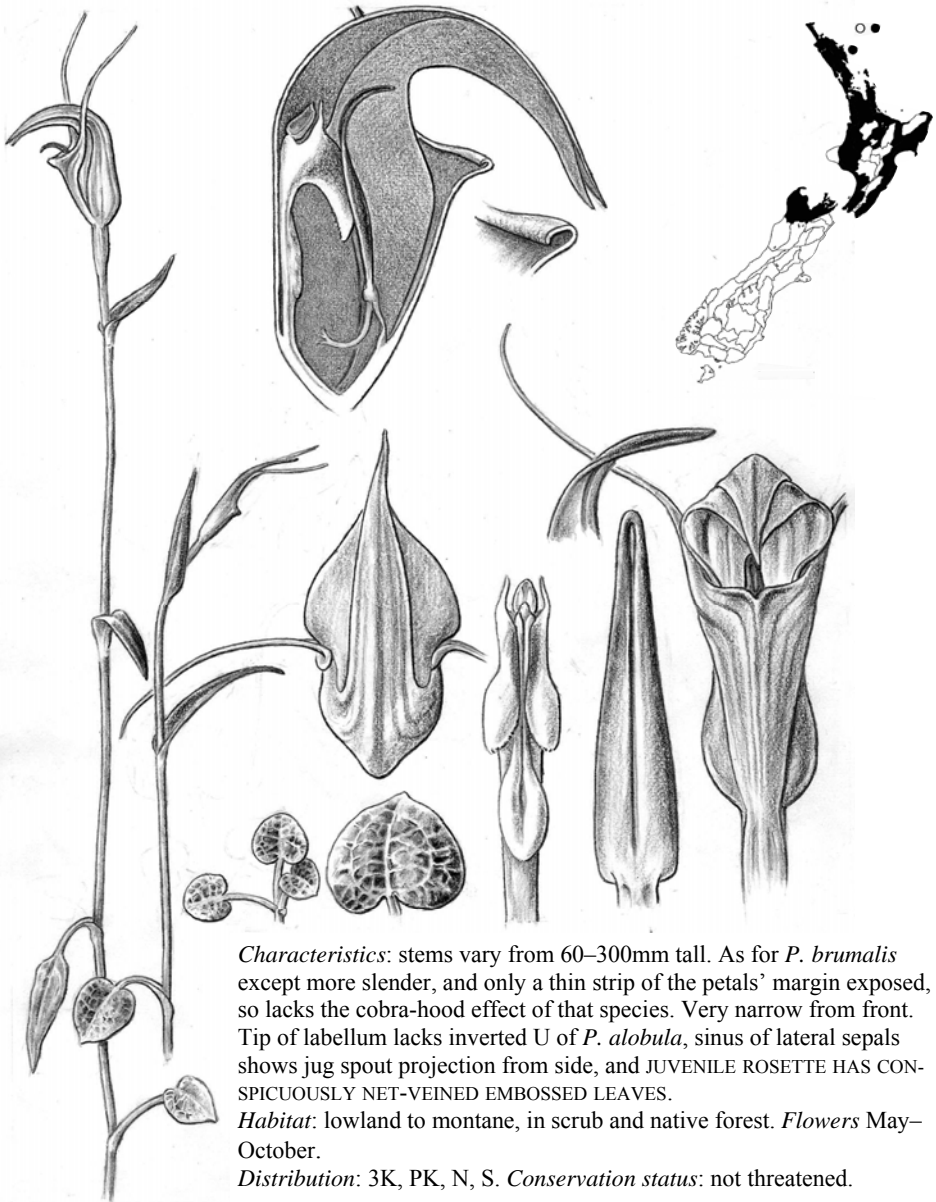
Habitat: open grassland, montane to subalpine.

Flowers October to January. *Distribution:* S.

Conservation status: at risk, sparse. Old records from N.Is.

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

Syn.: *Diplodium trullifolium* (Hook.f.) D.L.Jones, Molloy & M.A.Clem. *Aust. Orch. Res.* 4: 72 (2003)



Characteristics: stems vary from 60–300mm tall. As for *P. brumalis* except more slender, and only a thin strip of the petals' margin exposed, so lacks the cobra-hood effect of that species. Very narrow from front. Tip of labellum lacks inverted U of *P. alobula*, sinus of lateral sepals shows jug spout projection from side, and JUVENILE ROSETTE HAS CONSPICUOUSLY NET-VEINED EMBOSSED LEAVES.

Habitat: lowland to montane, in scrub and native forest. *Flowers* May–October.

Distribution: 3K, PK, N, S. *Conservation status:* not threatened.

Pterostylis venosa Colenso *Trans. NZI.* 28:610 (1896)



Characteristics: 50-100mm tall with a rosette of 2 to 4 broad oval yellow/green leaves lengthening in maturity. Otherwise similar to *P. humilis* except the STIGMA IS NARROW, NOT UPTURNED.
Habitat: mossy forest in high rainfall montane sites.
Flowers November—January. *Distribution:* N, S, St.
Conservation status: not threatened.

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

Characteristics: lanceolate leaves clustered around the base of the multibracteate stem. Flowers small, numerous, in a left or right helix, pink to red, rarely white. Labellum white, fringed.

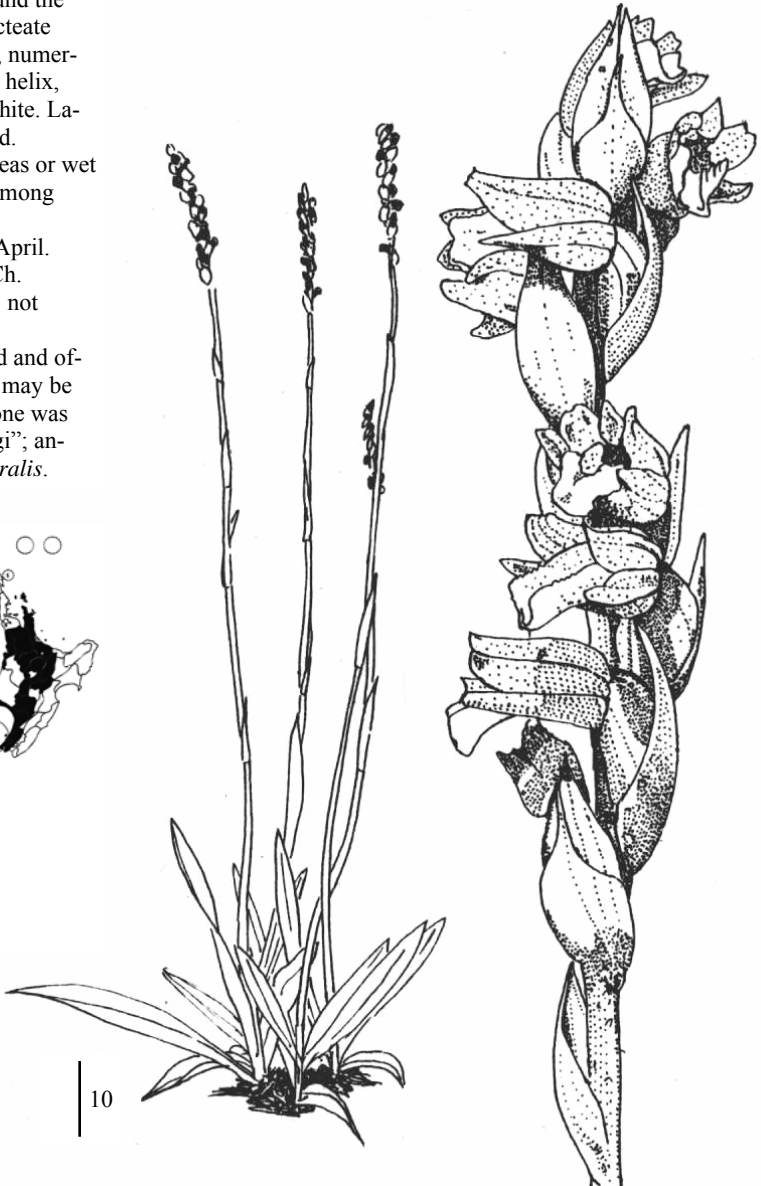
Habitat: in boggy areas or wet compacted shingle among grasses.

Flowers: January to April.

Distribution: N, S, Ch.

Conservation status: not threatened.

Notes: self pollinated and often perennial. There may be other forms in NZ: one was tagged *S.* "Motutangi"; another may be *S. australis*.



Thelymitra aemula Cheeseman *Trans. NZ I.* 51:94 (1919)

Characteristics: slender to robust plant, thick ridged leaf, 3–10 flowers. Flowers plain deep blue, opening on hot muggy days. Column pale violet with a narrow brown/violet band underlying the yellow top; consisting of a nonhooded postanther lobe with toothed margins and forward pointing side lobules less prominent than on *T. aff. ixioides*. The tip of a long green anther can be seen between the yellow side lobules. Thin white cilia tufts on LONG, UPCURVED COLUMN ARMS.

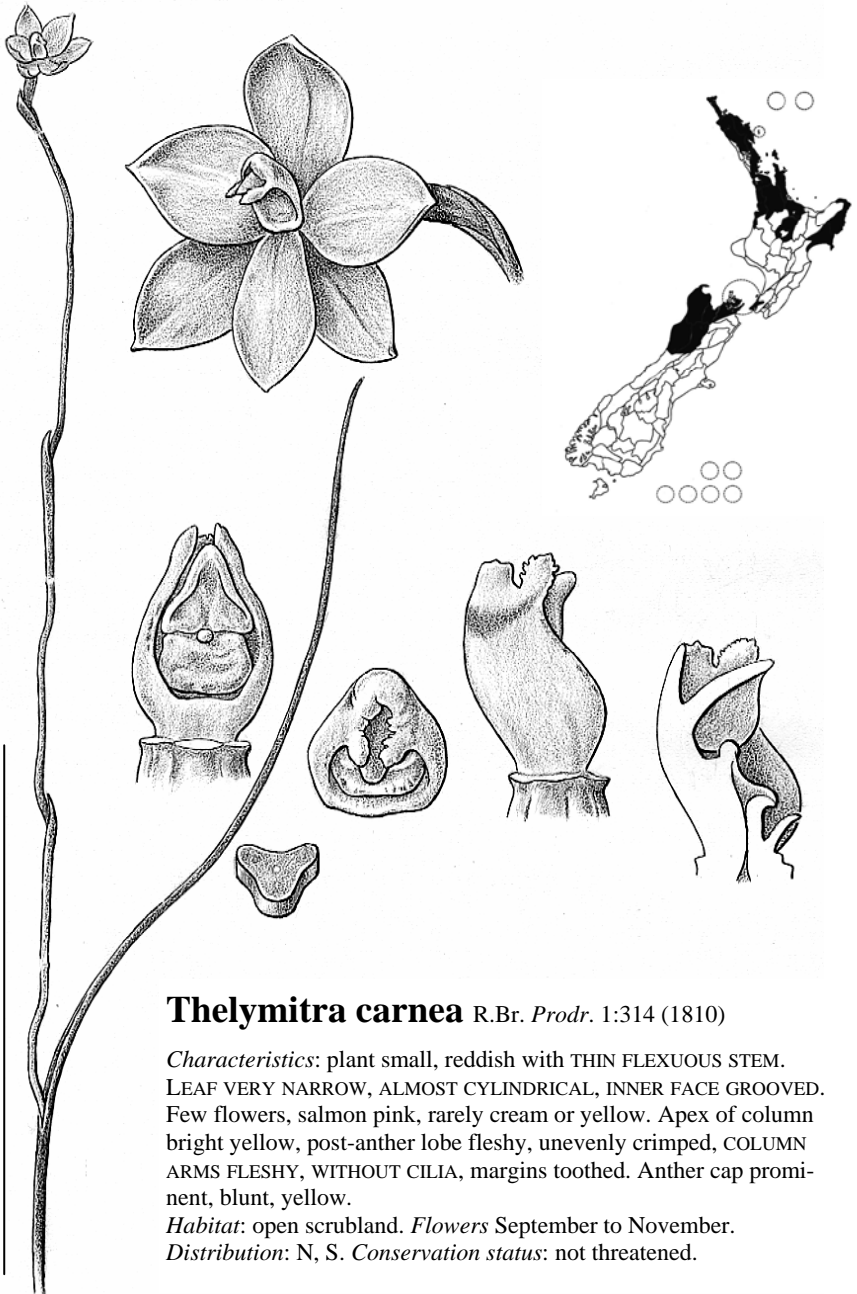
Habitat: damp or dry ground in open kauri and gumland scrub.

Flowers October to December.

Distribution: N. *Conservation status:* not threatened.

Note: in most *Thelymitra* the column lengthens as the bud matures, carrying the anther higher, but leaving the pollinia already attached to the viscid disc, in the cavity behind the stigma, as shown at lower right in longitudinal section.





Thelymitra carnea R.Br. *Prodr.* 1:314 (1810)

Characteristics: plant small, reddish with THIN FLEXUOUS STEM. LEAF VERY NARROW, ALMOST CYLINDRICAL, INNER FACE GROOVED. Few flowers, salmon pink, rarely cream or yellow. Apex of column bright yellow, post-anther lobe fleshy, unevenly crimped, COLUMN ARMS FLESHY, WITHOUT CILIA, margins toothed. Anther cap prominent, blunt, yellow.

Habitat: open scrubland. *Flowers* September to November.

Distribution: N, S. *Conservation status:* not threatened.

Thelymitra cyanea (Lindl.) Benth. *Flora Austr.* 6:323 (1873)

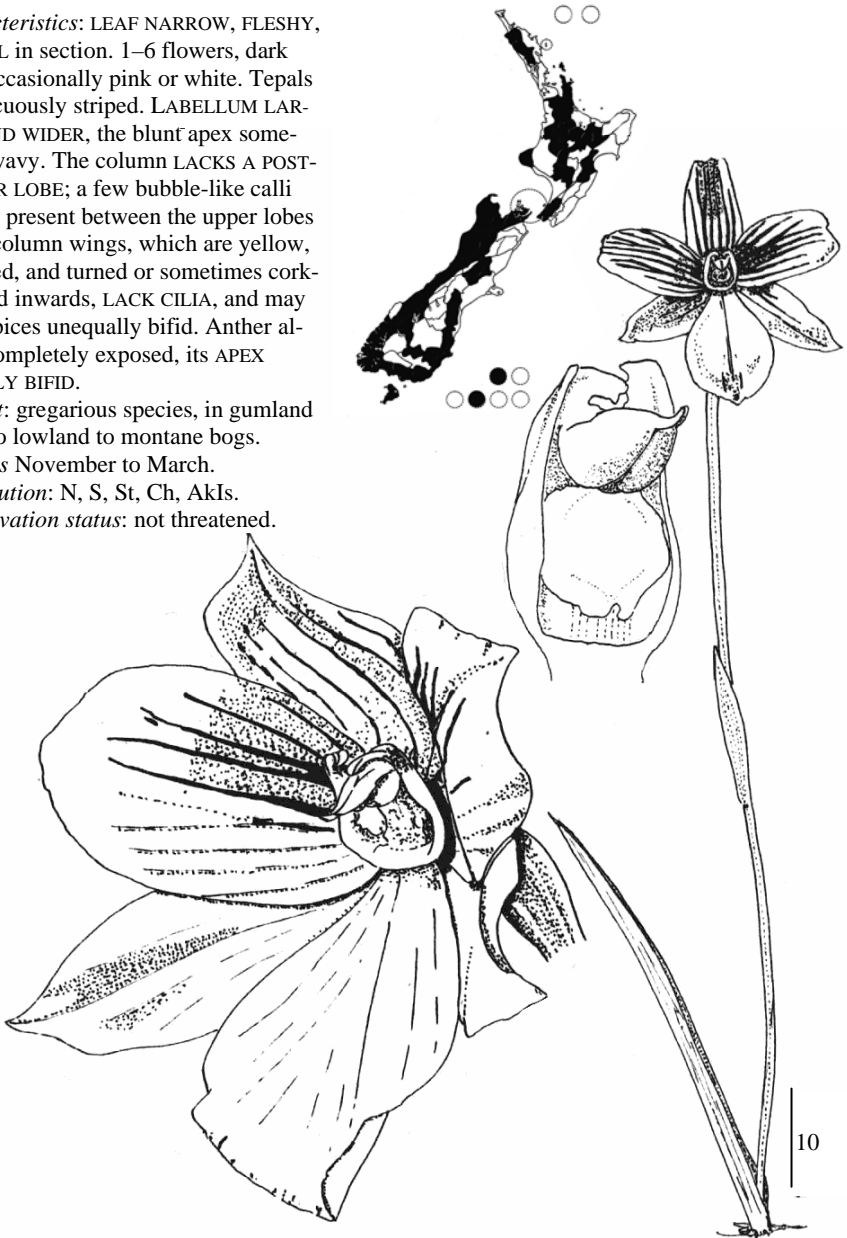
Characteristics: LEAF NARROW, FLESHY, TREFOIL in section. 1–6 flowers, dark blue, occasionally pink or white. Tepals conspicuously striped. LABELLUM LARGER AND WIDER, the blunt apex sometimes wavy. The column LACKS A POST-ANTHER LOBE; a few bubble-like calli may be present between the upper lobes of the column wings, which are yellow, flattened, and turned or sometimes cork-screwed inwards, LACK CILIA, and may have apices unequally bifid. Anther almost completely exposed, its APEX CLEARLY BIFID.

Habitat: gregarious species, in gumland scrub to lowland to montane bogs.

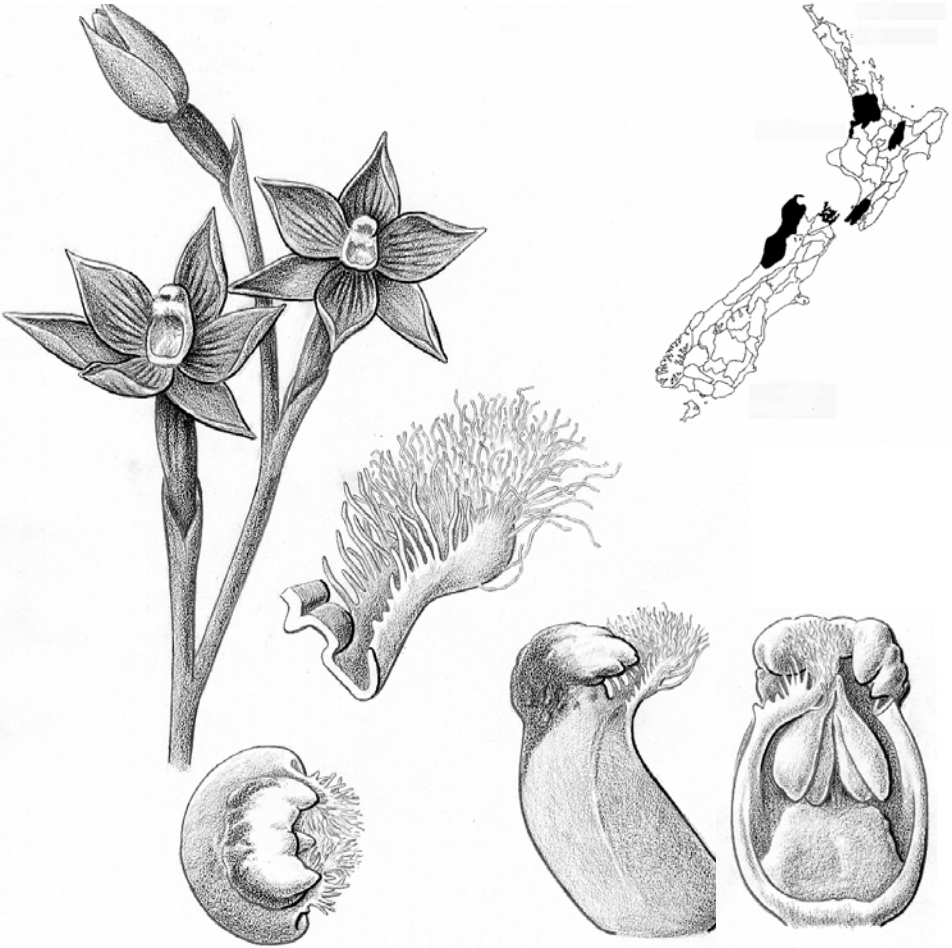
Flowers November to March.

Distribution: N, S, St, Ch, AkIs.

Conservation status: not threatened.



Thelymitra x dentata L.B.Moore *NZ J. Bot.* 6:478 f2 (1969)



Characteristics: a sterile hybrid between *T. longifolia* and one of the forms of *T. pulchella*, robust; up to six 150mm flowers, pink to blue, HEAVILY STRIPED; COLUMN ARMS BENT INWARD WITH TOOTHLIKE LOBES TOWARDS THE BASES, grading to yellow/brown cilia above; post-anther lobe warty, reddish with yellow edge.

Habitat: gumland scrub, pakihi, damp clay banks.

Flowers November to January.

Distribution: N, S.

Conservation status: not threatened.

Thelymitra formosa

Colenso *Trans. NZI.* 16:338 (1884)



Characteristics: robust tall plant with WIDE FLESHY UPRIGHT SHEATHING LEAF. Up to twelve 15mm flowers, blue or mauve with long narrow tepals often with yellowish tips. Column white, shading through a magenta band, to a yellow, salmon pink or red, fleshy, toothed margin of a wide cleft and vestigial postanther lobe; prominent toothed side lobules and LONG TAPERED COLUMN ARMS, CILIA ABOVE, sometimes forked yellow to bright orange. Anther pale green; tip level with but shorter than the column arms.

Habitat: lowland to subalpine wetlands, scrub, open forest. *Flowers* November to February.

Distribution: N, S, St, Ch.

Conservation status: not threatened.

Notes: column often has triangular lobe in front at base.

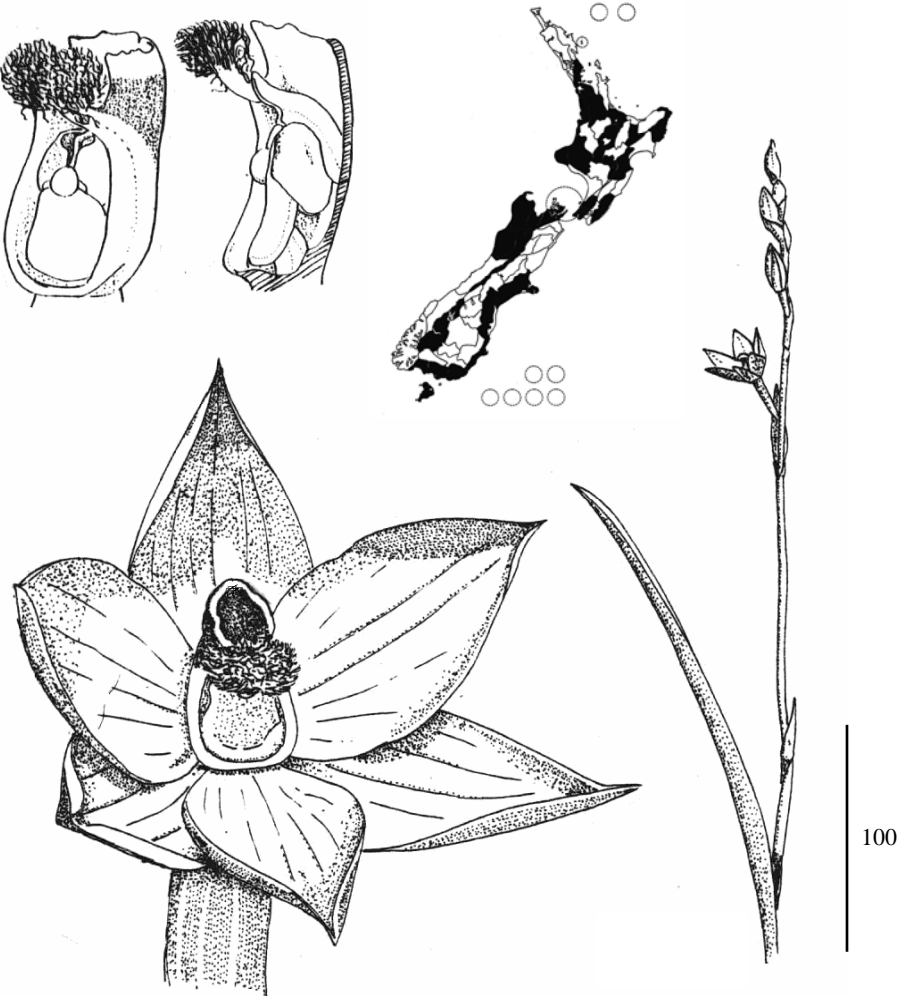
Thelymitra hatchii L.B.Moore NZ J. Bot. 6:477 f2 (1969)

Characteristics: stiff upright plant like *T. formosa* but usually smaller; up to six 15mm flowers, pale to deep mauve. COLUMN MIDLOBE DARK REDDISH BROWN TOWARDS THE YELLOWISH, RATHER RAGGED, TRUNCATE APEX. Cilia on column arms usually yellow, sometimes white, rarely pink. The column may have a triangular process at the base anteriorly.

Habitat: lowland to subalpine dry clay banks, in gravel, under scrub or in bogs.

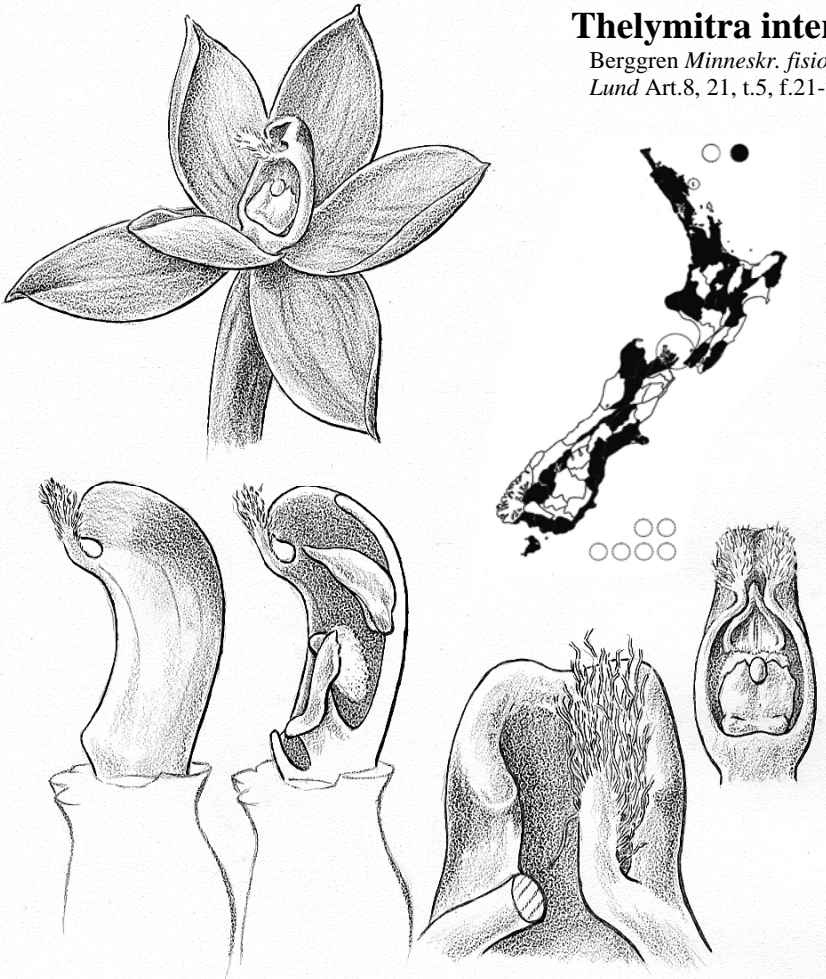
Flowers November to February. *Distribution:* N, S, St. *Conservation status:* not threatened.

Notes: *T. hatchii* is an endemic putative amphidiploid hybrid of *T. formosa* and *T. longifolia*. Both parents being somewhat variable explains why *T. hatchii* is likewise.



Thelymitra intermedia

Berggren *Minneskr. fisiogr. Sallsk.*
Lund Art.8, 21, t.5, f.21-24 (1878)



Characteristics: base of stem red stained; leaf arching, V shaped in section, not ribbed. Up to 7 dusky pink to bluish flowers. Upper column bronze/brown, occasionally red, the apex blunt (not inturred as in *T. aff. pauciflora* and not tapered), yellow. BACK OF COLUMN FORMS ONE CONTINUOUS CURVE, LACKING THE SHOULDERS USUAL IN *T. AFF. PAUCIFLORA*. CILIA SPARSE white.

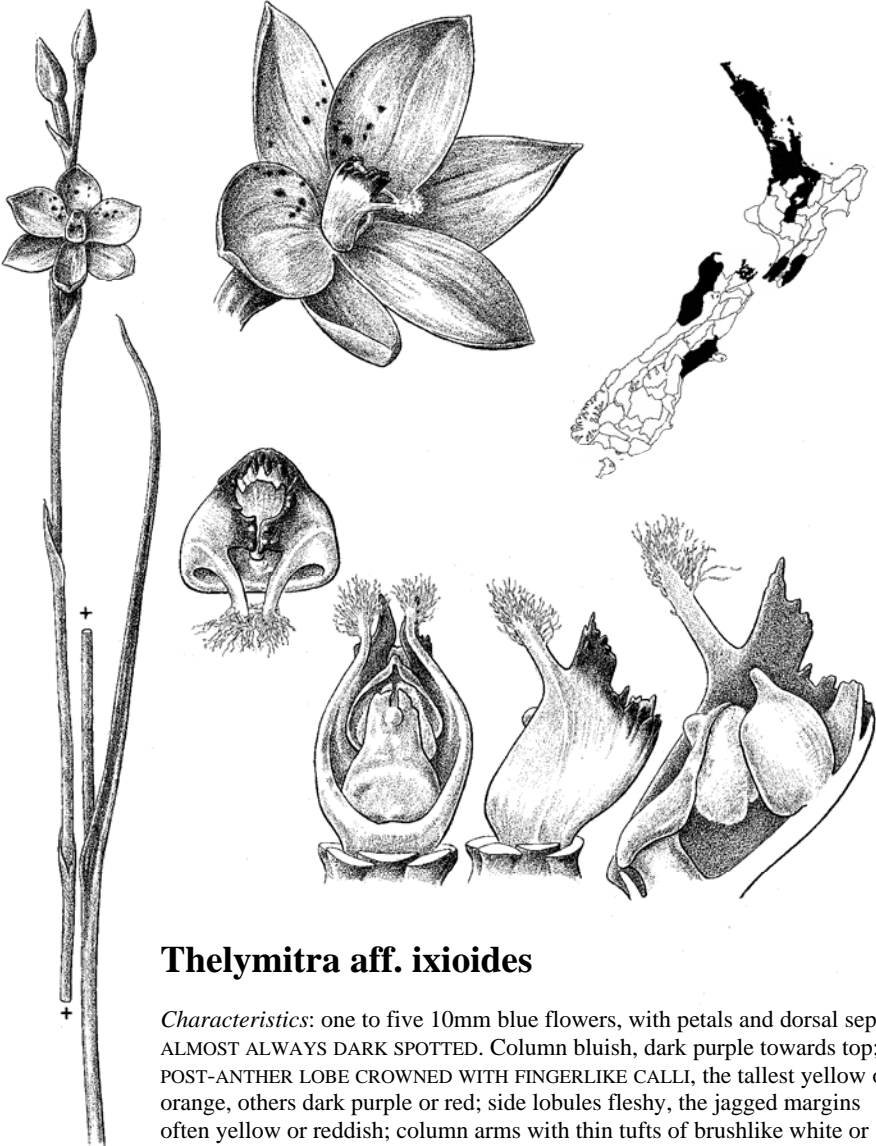
Habitat: Lowland to montane, the typical *Thelymitra* of the northern offshore islands, common in peatbogs, gumland scrub and clay banks, forests.

Flowers October to November, often earlier than *T. aff. pauciflora*.

Distribution: 3K, N, S, St.

Conservation status: not threatened.

Notes: close to *T. pauciflora*, including the column arms turned up and adjacent at the tip but lacks the split postanther lobe of our *T. aff. pauciflora*. Identified with *T. colensoi*.



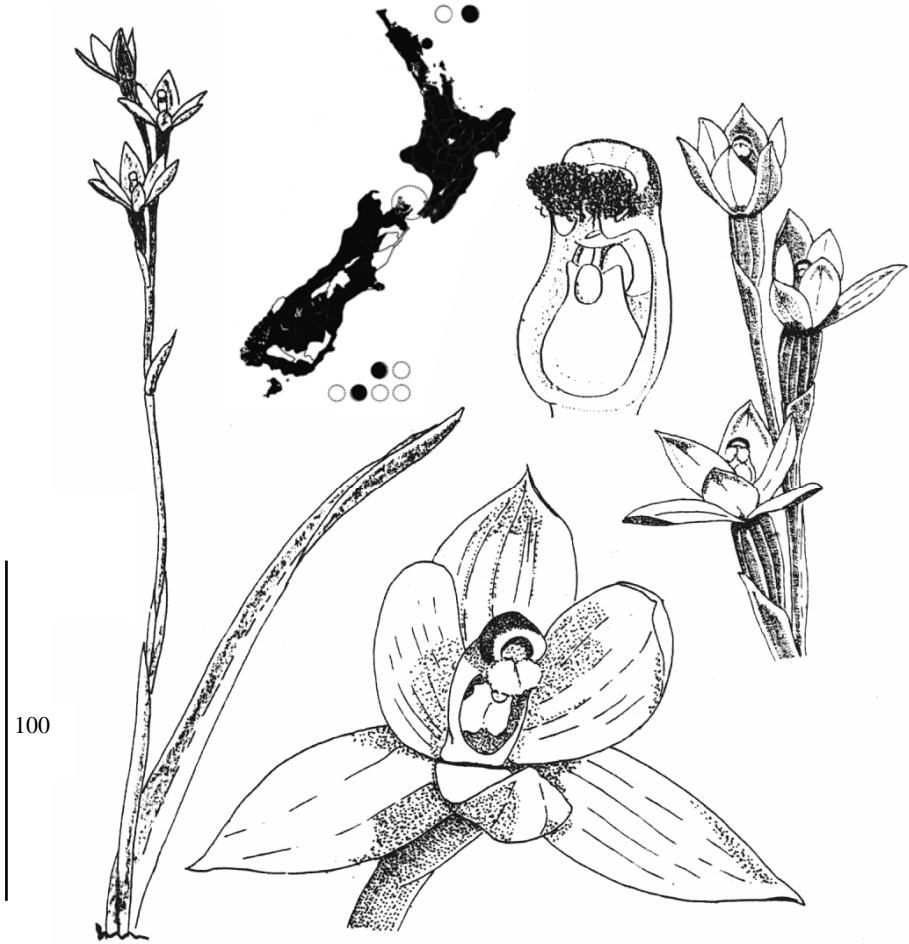
Thelymitra aff. ixioides

Characteristics: one to five 10mm blue flowers, with petals and dorsal sepal ALMOST ALWAYS DARK SPOTTED. Column bluish, dark purple towards top; POST-ANTHER LOBE CROWNED WITH FINGERLIKE CALLI, the tallest yellow or orange, others dark purple or red; side lobules fleshy, the jagged margins often yellow or reddish; column arms with thin tufts of brushlike white or mauve cilia. Opens only 1 or 2 flowers at a time, in warm sunny mornings especially after rain. *Habitat:* well lit scrub or forest tracks, roadsides in kauri forest, can extend to montane zones. *Flowers* October to November.

Distribution: N, S. *Conservation status:* not threatened.

Notes: resembles the Australian *T. ixioides*, but is self-pollinating.

Thelymitra longifolia J.R.Forst. & G.Forst. *Charact. Gen. Plant.* 98 t49 (1776)



Characteristics: mature plants with BROAD, RIBBED, VERY LONG LEAVES which lie flat on the ground. Younger plants with more erect concave leaves. Flowers usually white, sometimes pink. POST-ANTHER LOBE DARK (RARELY YELLOW) HOODED, WITH A YELLOW SHALLOWLY NOTCHED MARGIN. COLUMN ARMS WITH SHORT, DENSE, TANGLED, WHITE (SOMETIMES CREAMY) CILIA (LIKE COTTON WOOL), tightly pressed against (but shorter than) apex of column.

Habitat: widespread in forest, scrub, sunny banks and tracksides.

Flowers October to December. *Distribution:* 3K, PK, N, S, St, Ch, Akl (and Norfolk Is).

Conservation status: not threatened.

Thelymitra aff. longifolia

Characteristics: A complex of several taxa similar to *T. longifolia* in habitat and structure, many of them insect pollinated. Up to 20 scented white or strongly pink flowers in short, dense, pyramidal (as here) or long open spikes open together on dry days. Other self-pollinating forms similar to *T. longifolia* have channelled rather than the usual flat ribbonlike leaves.

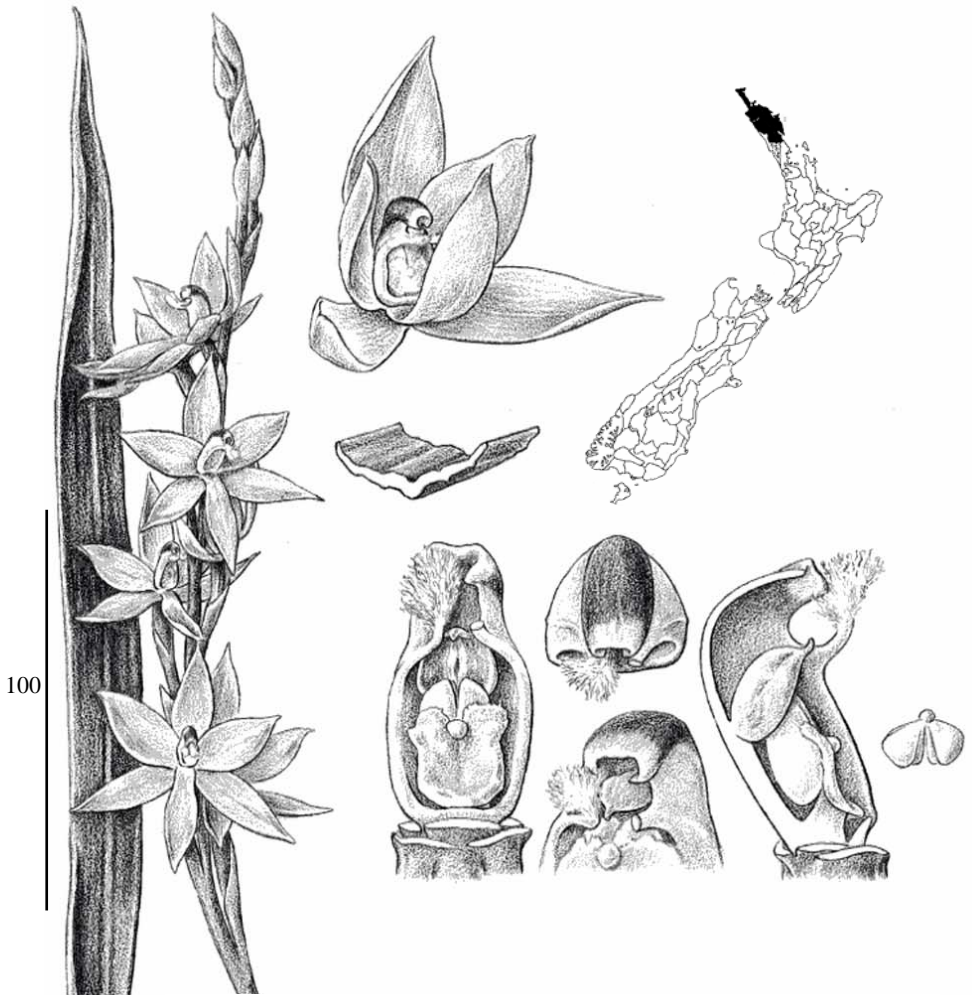
Habitat: warm sunny open spots, in light scrub.

Flower October to December.

Distribution: N.

Notes: native bees have been seen removing pollinia. Some have pale blue shades.





Thelymitra malvina

M.A.Clem., D.L.Jones & Molloy *Austr. Orch. Res.* 1:141 (1989)

Characteristics: tall slender plant, usually solitary. Flowers mauve to blue, tepals large, narrow, open wide on still sunny days. Postanther lobe of column hooded, narrow, SHAPED LIKE AN INVERTED SCOOP, purplish brown, apex yellow. Column arms with tufts of mauve cilia.

Habitat: in wetlands, often on rotting kauri logs.

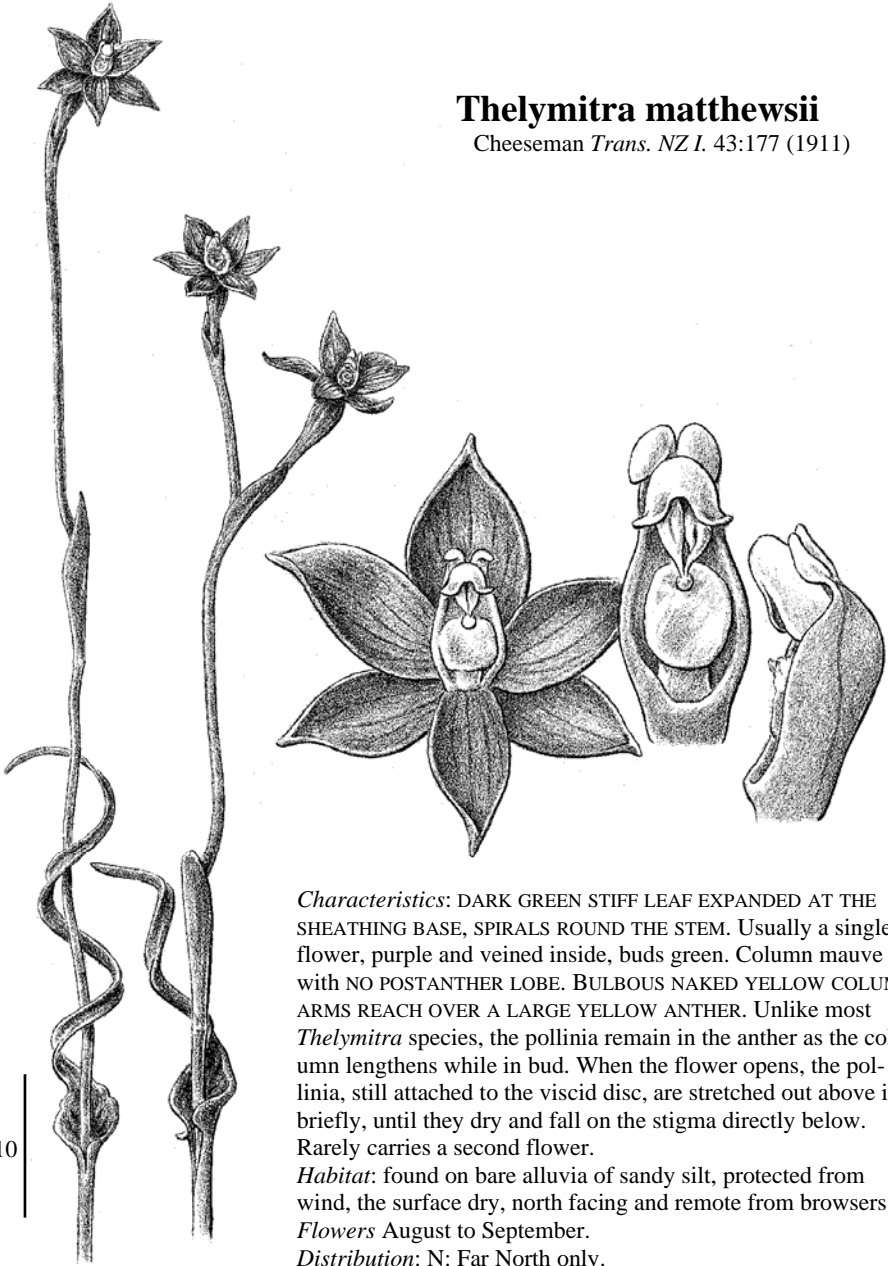
Flowers October to November.

Distribution: N.

Conservation status: naturally uncommon, range restricted.

Thelymitra matthewsii

Cheeseman *Trans. NZ I.* 43:177 (1911)



Characteristics: DARK GREEN STIFF LEAF EXPANDED AT THE SHEATHING BASE, SPIRALS ROUND THE STEM. Usually a single flower, purple and veined inside, buds green. Column mauve with NO POSTANTHER LOBE. BULBOUS NAKED YELLOW COLUMN ARMS REACH OVER A LARGE YELLOW ANTHER. Unlike most *Thelymitra* species, the pollinia lengthens while in bud. When the flower opens, the pollinia, still attached to the viscid disc, are stretched out above it briefly, until they dry and fall on the stigma directly below. Rarely carries a second flower.

Habitat: found on bare alluvia of sandy silt, protected from wind, the surface dry, north facing and remote from browsers.

Flowers August to September.

Distribution: N: Far North only.

Conservation status: naturally uncommon, sparse.

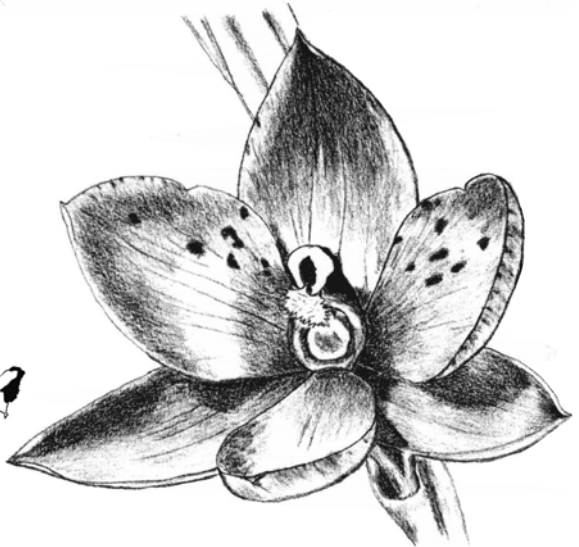
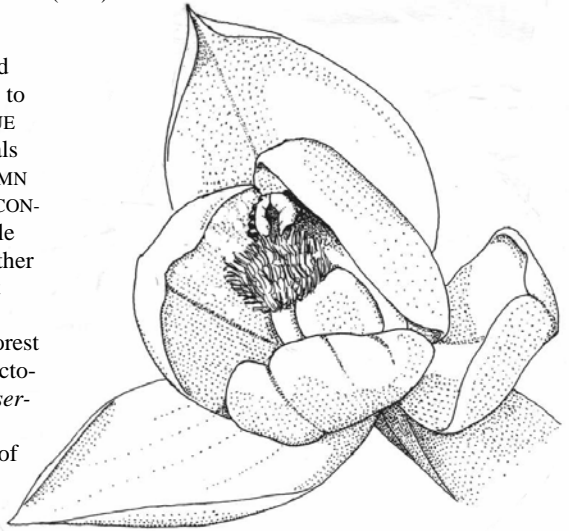
Thelymitra nervosa Colenso *Trans. NZI.* 20: 207 (1888)

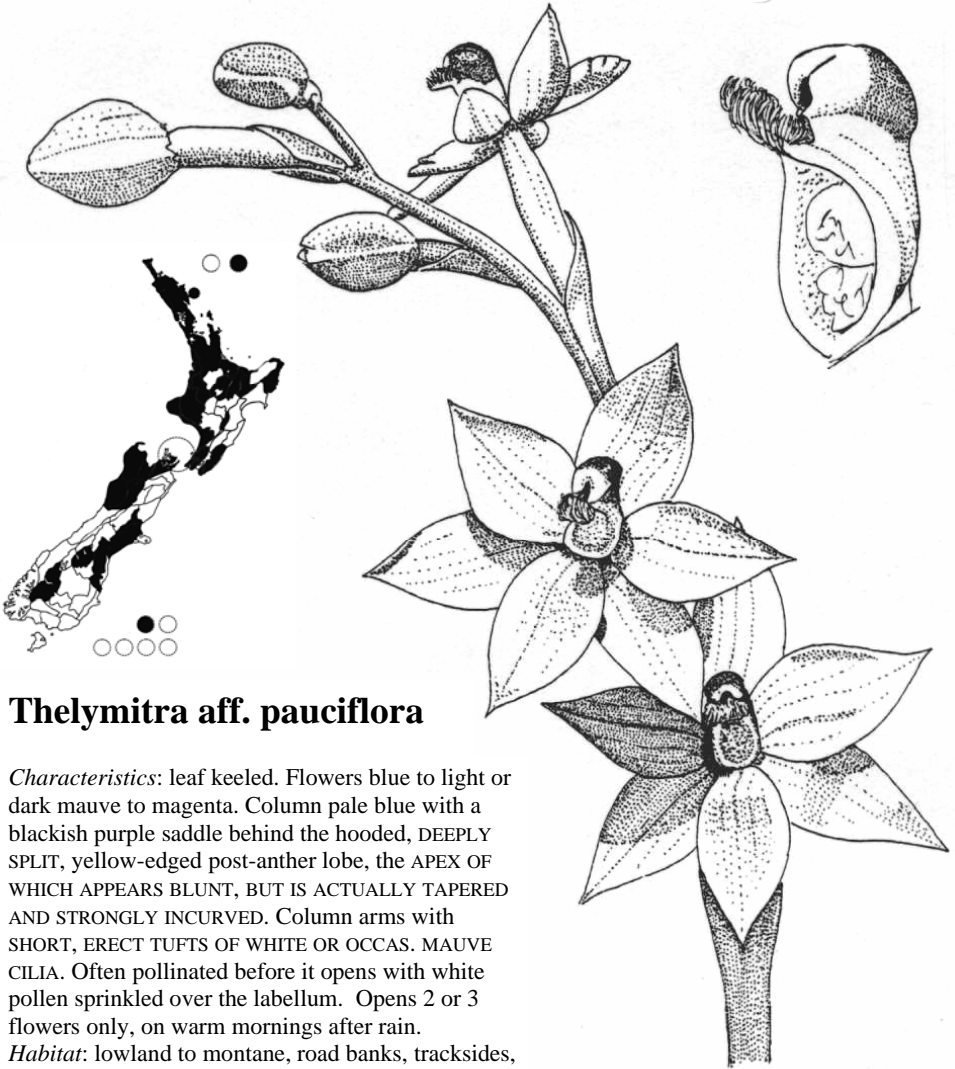
Syn: *T. decora* Cheesem. *Man. NZ Fl.* 1151 (1906)

Characteristics: wide channelled keeled leaf, up to ten 15mm flowers, dark blue to mauve/pink or white, with DARKER BLUE SPOTTED PETALS, rarely unspotted. Petals and sepals cupped. BACK OF THE COLUMN USUALLY STUDDED WITH VERY DARK, CONSPICUOUS WARTS. Column normally pale pink, dark purple on the hooded postanther lobe, usually with a horseshoe of bright yellow around the opening.

Habitat: dappled or full sun; scrub or forest margins. Montane to alpine. *Flowers* October to January. *Distribution:* N, S. *Conservation status:* not threatened.

Notes: A putative amphidiploid hybrid of *T. longifolia* and *T. aff. ixioides*, and thus variable. Features of each parent show to varying degrees in different specimens.





Thelymitra aff. pauciflora

Characteristics: leaf keeled. Flowers blue to light or dark mauve to magenta. Column pale blue with a blackish purple saddle behind the hooded, DEEPLY SPLIT, yellow-edged post-anther lobe, the APEX OF WHICH APPEARS BLUNT, BUT IS ACTUALLY TAPERED AND STRONGLY INCURVED. Column arms with SHORT, ERECT TUFTS OF WHITE OR OCCAS. MAUVE CILIA. Often pollinated before it opens with white pollen sprinkled over the labellum. Opens 2 or 3 flowers only, on warm mornings after rain.

Habitat: lowland to montane, road banks, tracksides, drain edges or open scrub.

Flowers November to January.

Distribution: N, S.

Conservation status: not threatened.

Notes: resembles the Australian *T. pauciflora* but may be distinct. A robust form with orange postanther lobes resembles *T. brevifolia* Jeanes *Muelleria* 19:19-79 (2004).



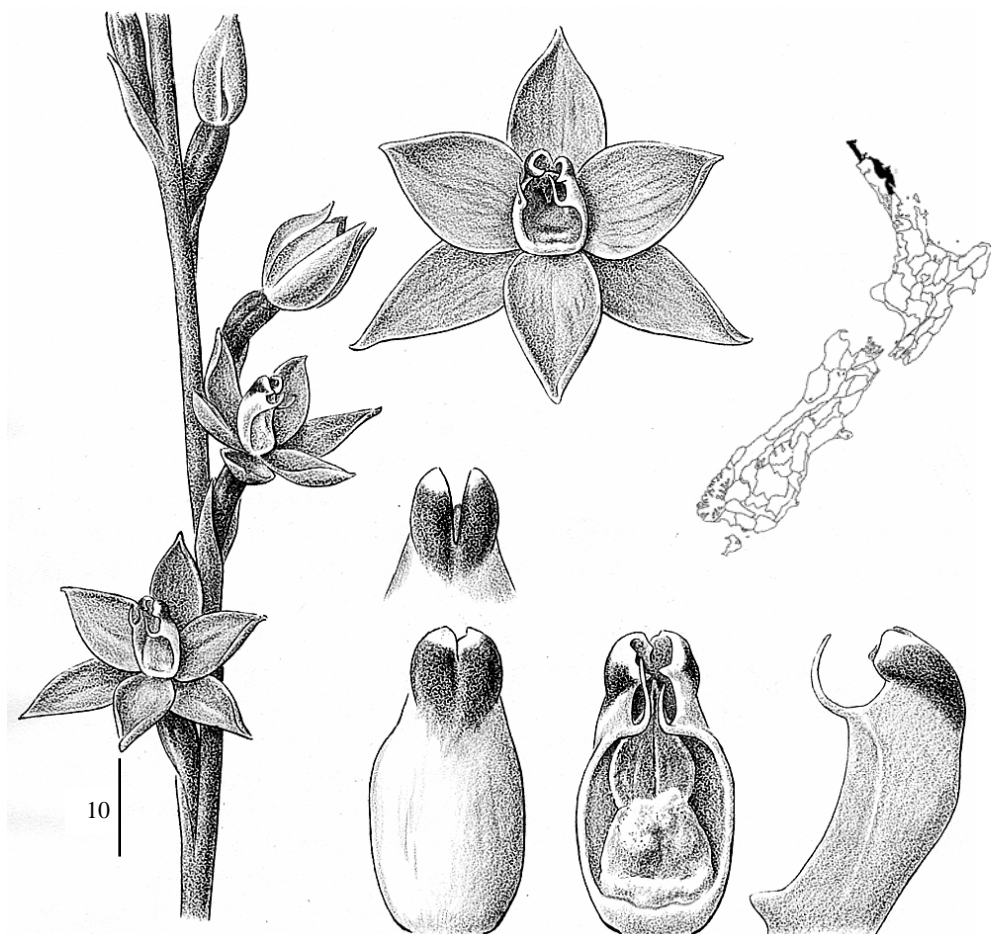
Thelymitra pulchella Hook.f. *Flora Nov. Zel.* 1:244 (1853)

Characteristics: plants may be solitary or growing in clumps; wide, keeled leaf. Two to six 10mm heavily striped flowers, mostly blue, often pink/mauve, rarely white. In some the postanther lobe is shorter than anther, and the column arms flat, pointed, toothed blades, quite lacking fimbria or cilia. In others the postanther lobe is square, its ragged orange/brown/yellow edge rolled forward, taller than the anther, and the column arms flat blades bearing cilia or fimbria.

Habitat: sea level to montane, wetland to damp scrub on ridge tops.

Flowers November to December. *Distribution:* N, S, St. *Conservation status:* not threatened.

Notes: a putative amphidiploid hybrid of *T. cyanea* and *T. longifolia*, therefore variable, prompting synonyms such as *Tt. caesia*, *concinna*, *fimbriata* and *pachyphylla*.



Thelymitra sanscilia Hatch *Trans.Roy.Soc. NZ* 79:397 (1952)

Characteristics: generally resembles *T. aff. pauciflora* but the SICKLE-SHAPED COLUMN ARMS HAVE FEW OR NO CILIA. Tall, multiflowered plant with rusty red stems and an erect green leaf. The POST-ANTHER LOBE IS SPLIT FRONT TO BACK and edged with yellow.

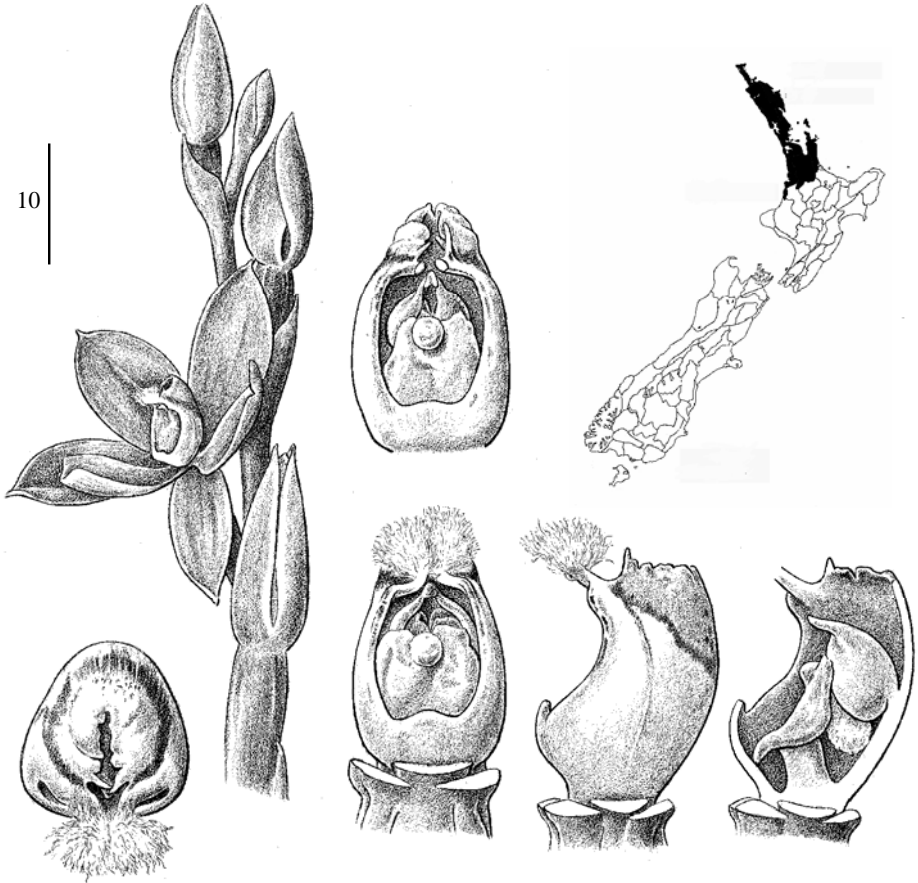
Habitat: lowland tea tree scrub on sunny tracksides.

Flowers October.

Distribution: N.

Conservation status: naturally uncommon, sparse.

Notes: has been regarded as an abnormal form of *T. pauciflora* s.l.



Thelymitra tholiformis Molloy & Hatch *NZ J. Bot.* 28:111 f1 (1990)

Characteristics: slender plant, straplike narrow concave leaf, slender blue green stem; 1–8 plain blue to mauve (often pale) flowers. Similar to *T. aemula* in colour, habitat, self pollination and shy flowering but differs in having a broader, almost closed, tall yellow, DOMED COLUMN TOP with obscurely toothed margins, but LACKING SIDE LOBULES. COLUMN ARMS ARE BENT SHARPLY INWARD jamming the dense bunches of cilia together.

Habitat: gumland scrub.

Flowers November to December.

Distribution: N.

Conservation status: declining.



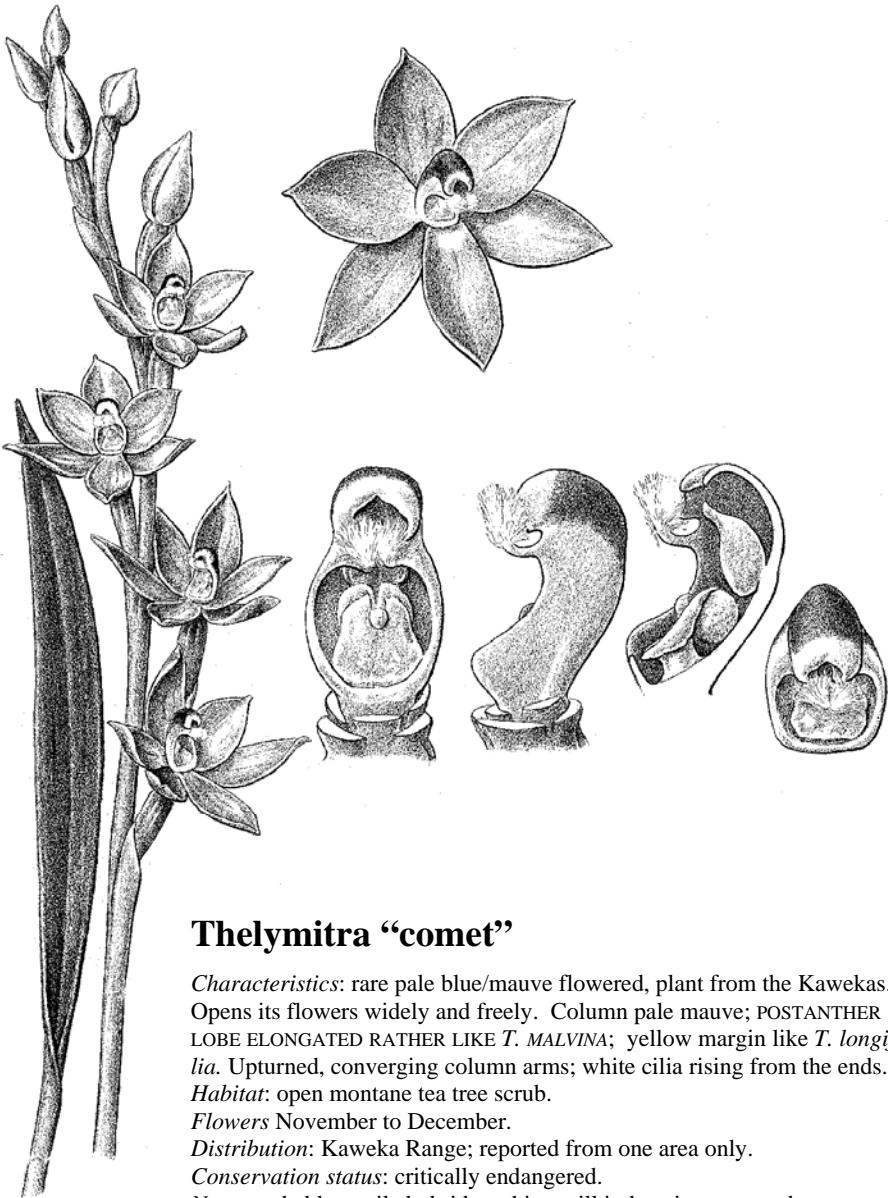
Thelymitra “Ahipara”

Characteristics: the plant similar to *T.* “darkie” but with purple stem, green bracts and mauve flower all of a paler shade. Column mauve with a nearly black postanther lobe with a wide, bright yellow and thick margin around an oblong opening. Short, straight, round sectioned column arms converging with sparse, tangled, white cilia upstanding. Flowers opened on only one reported occasion, in a car boot on a rescue mission.

Habitat: wetland species thriving in black ooze.

Distribution: N: Far north only. *Flowers* October to November.

Conservation status: taxonomically indeterminate (very similar to *T.* “darkie”, the column indistinguishable), endangered.



Thelymitra “comet”

Characteristics: rare pale blue/mauve flowered, plant from the Kawekas. Opens its flowers widely and freely. Column pale mauve; POSTANTHER LOBE ELONGATED RATHER LIKE *T. MALVINA*; yellow margin like *T. longifolia*. Uprturned, converging column arms; white cilia rising from the ends.

Habitat: open montane tea tree scrub.

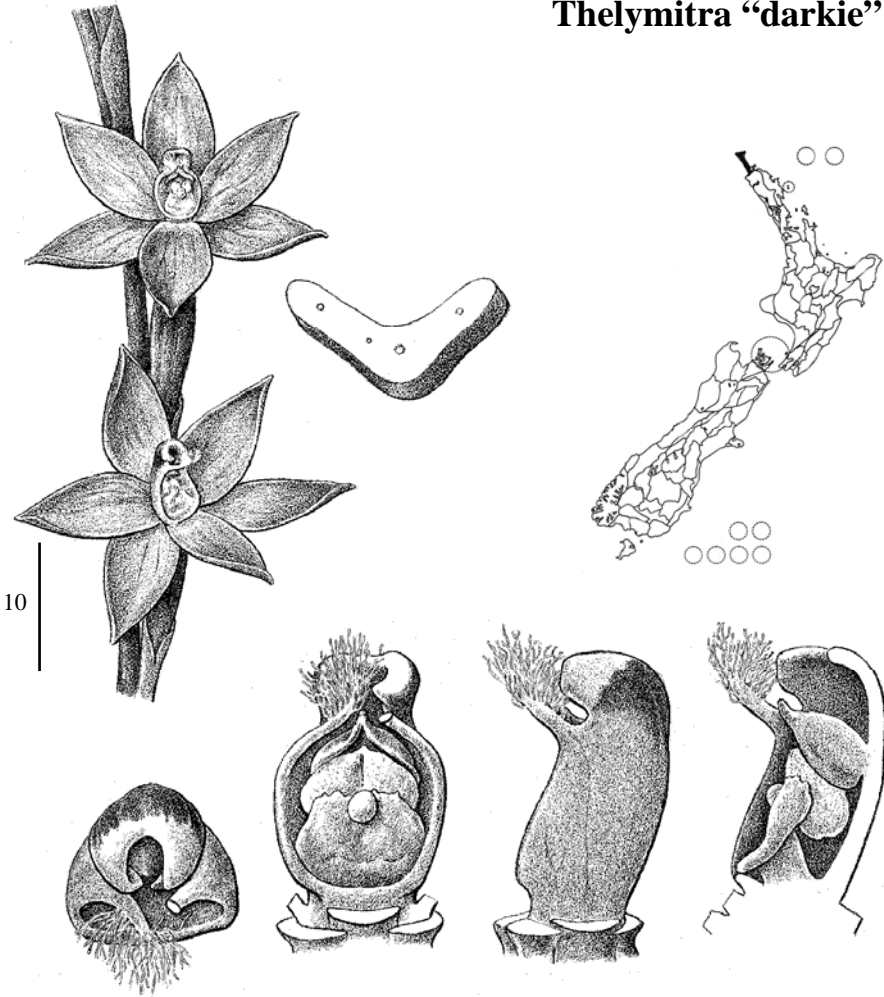
Flowers November to December.

Distribution: Kaweka Range; reported from one area only.

Conservation status: critically endangered.

Note: probably sterile hybrid: nothing will induce it to set seed.

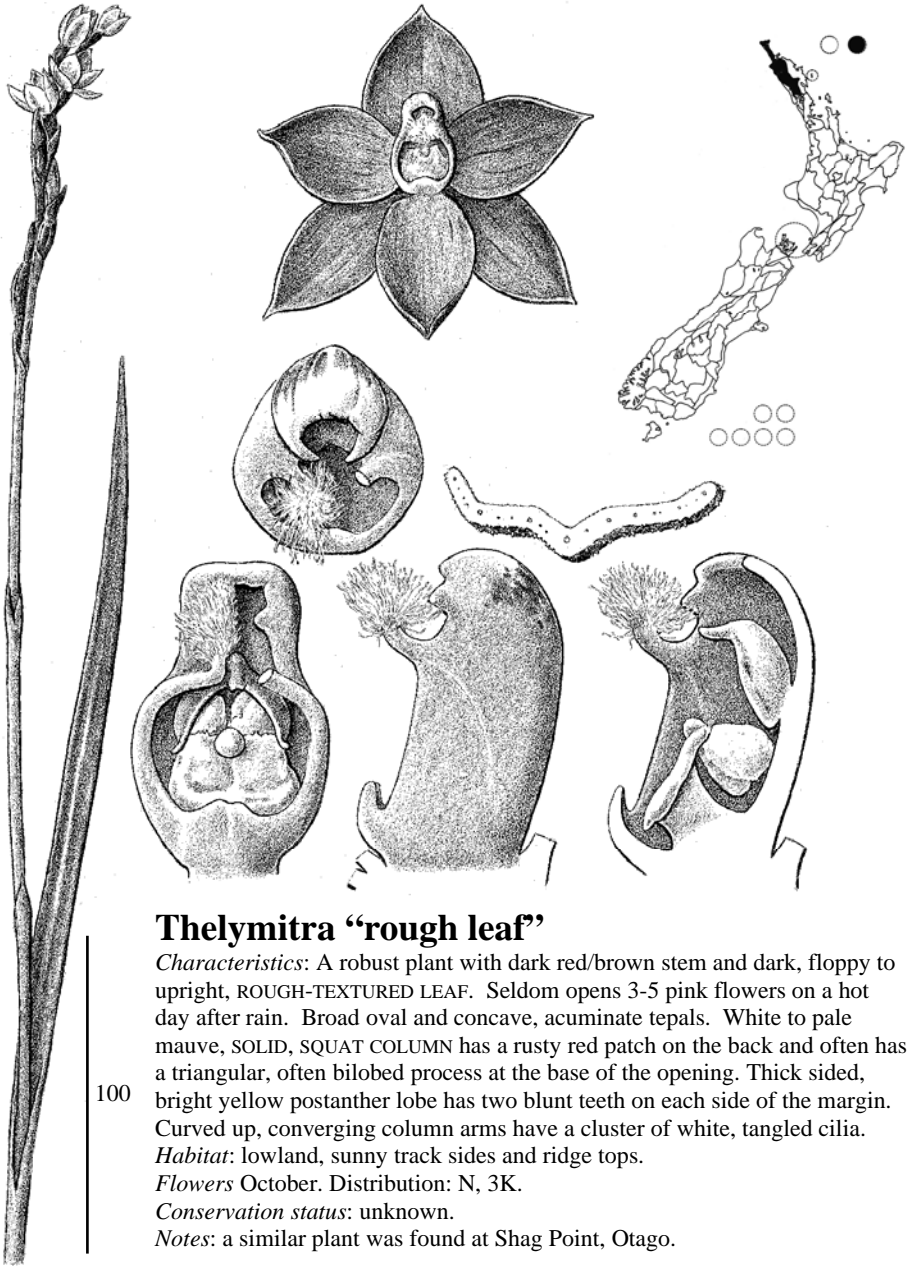
Thelymitra “darkie”



Characteristics: Leaf is green grading to a red base, dark purple stem with 3 bright green clasp- ing bracts. Tepals purple; inner surfaces mauve, sometimes dark mauve. Column is strong mauve with a nearly black postanther lobe and a wide, bright yellow and thick margin around an oblong opening. Short, straight, round sectioned column arms converging with sparse, tangled, white cilia upstanding. Rarely opens on hot days after rain.

Habitat: damp scrub and tracksides. *Distribution:* Far North.

Conservation status: vulnerable.



Thelymitra “rough leaf”

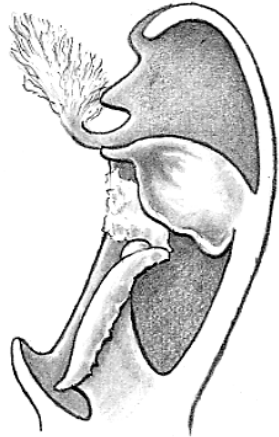
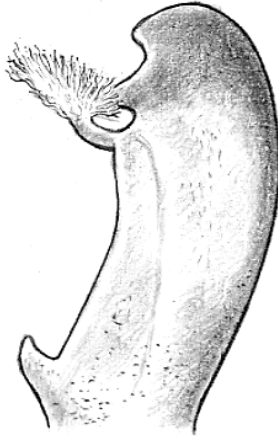
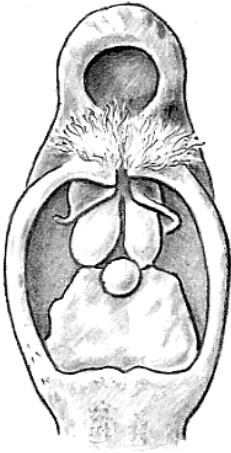
Characteristics: A robust plant with dark red/brown stem and dark, floppy to upright, ROUGH-TEXTURED LEAF. Seldom opens 3-5 pink flowers on a hot day after rain. Broad oval and concave, acuminate tepals. White to pale mauve, SOLID, SQUAT COLUMN has a rusty red patch on the back and often has a triangular, often bilobed process at the base of the opening. Thick sided, bright yellow postanther lobe has two blunt teeth on each side of the margin. Curved up, converging column arms have a cluster of white, tangled cilia.

Habitat: lowland, sunny track sides and ridge tops.

Flowers October. *Distribution:* N, 3K.

Conservation status: unknown.

Notes: a similar plant was found at Shag Point, Otago.



Thelymitra “sky”

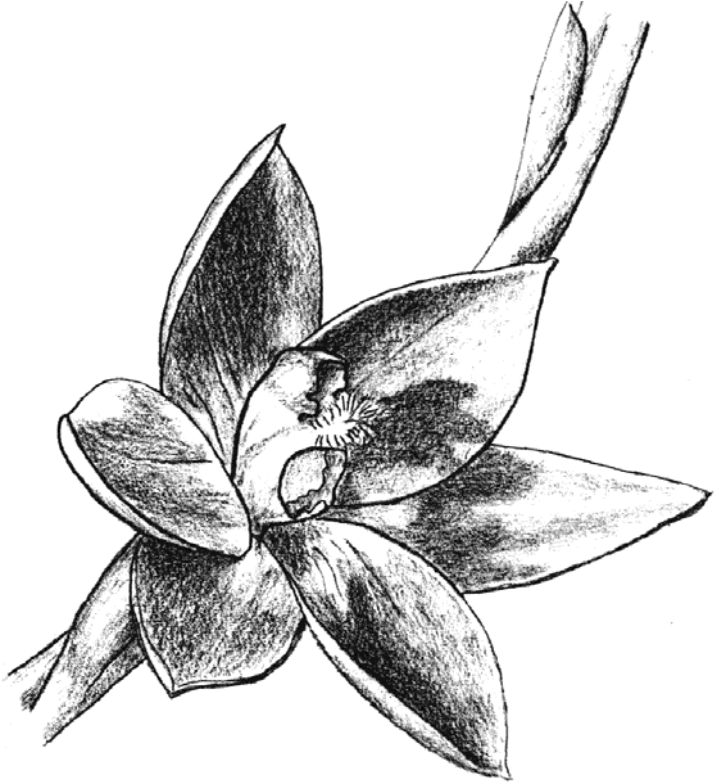
Characteristics: Sky blue or white flower, on a more slender plant than *T.* “rough leaf” but otherwise similar in habitat, though the column is not so heavily built. Green stem and upright, V section, green leaf.

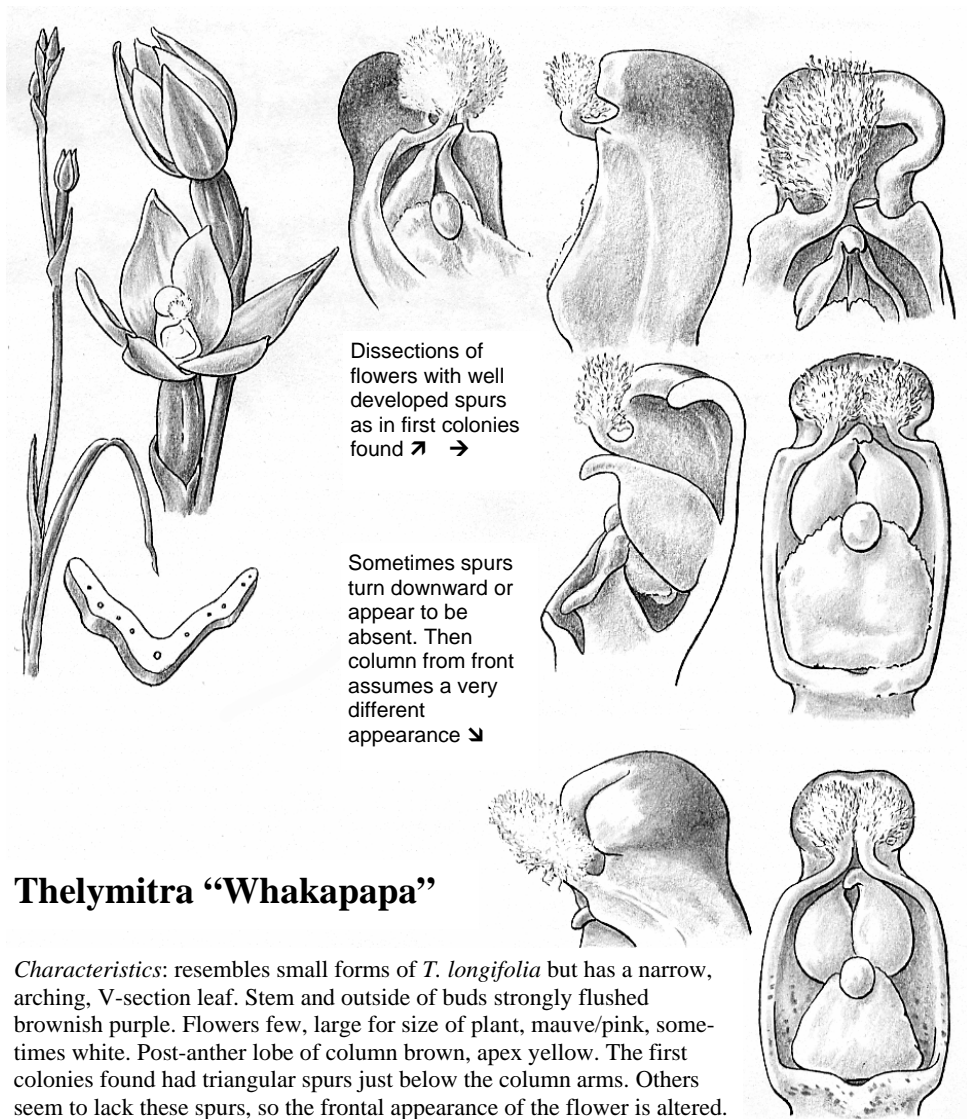
Habitat: gumland scrub.

Flowers October to November.

Distribution: N: Far North only (Ecological regions 3, 4).

Conservation status: unknown.





Dissections of flowers with well developed spurs as in first colonies found ↗ →

Sometimes spurs turn downward or appear to be absent. Then column from front assumes a very different appearance ↘

Thelymitra “Whakapapa”

Characteristics: resembles small forms of *T. longifolia* but has a narrow, arching, V-section leaf. Stem and outside of buds strongly flushed brownish purple. Flowers few, large for size of plant, mauve/pink, sometimes white. Post-anther lobe of column brown, apex yellow. The first colonies found had triangular spurs just below the column arms. Others seem to lack these spurs, so the frontal appearance of the flower is altered.

Habitat: montane scrub around Ruapehu; lower in southern N.Is.

Flowers January to February.

Distribution: N: Ruapehu, Wellington and the Wairarapa, and possibly Mt Taranaki. *Conservation status:* unknown.

Notes: In some areas, white-flowered plants replace the pink form and usually appear to lack spurs, but are presumably the same taxon. This may be Colenso’s *T. purpureo-fusca*.



Waireia stenopetala

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

Characteristics: plants usually 100–200mm tall with 2 stiff leaves and 2–3 green, conspicuously hooded flowers, often marked with red or brown, 10–20mm long. *Habitat:* in damp alpine/montane scrub and herbfields.

Flowers December to February.

Distribution: N, S, St, AKIs, C.

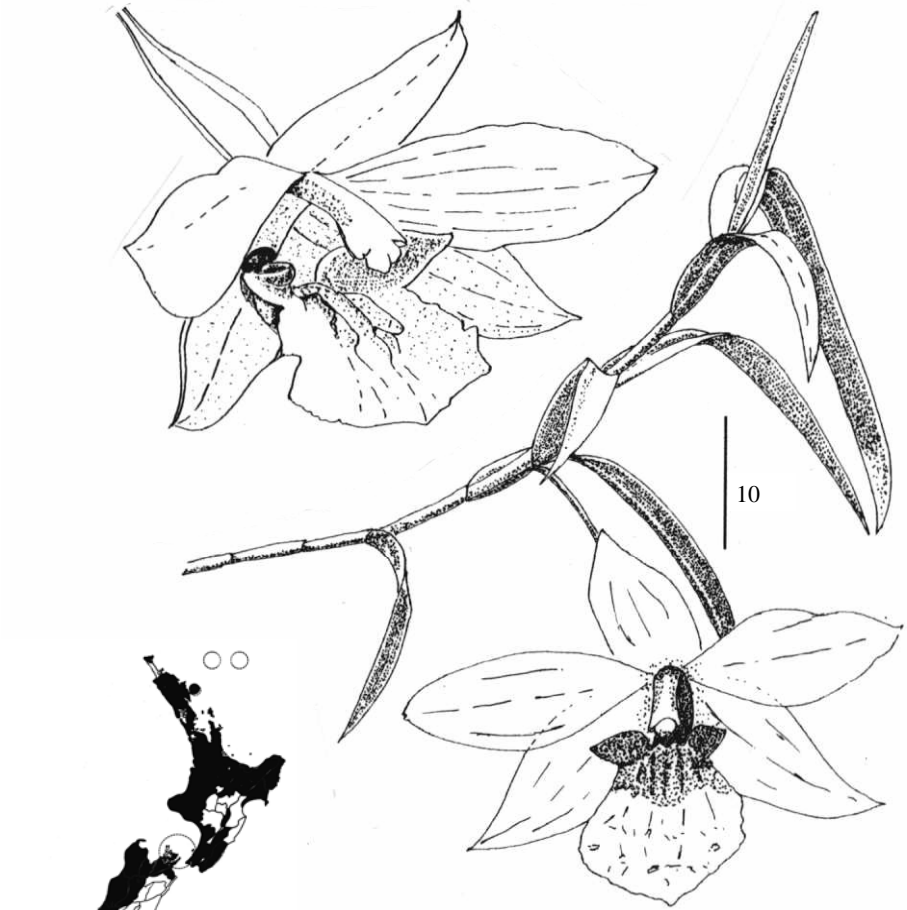
Conservation status: not threatened.

Notes: until recently *Lyperanthus antarcticus*.



Winika cunninghamii

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



Characteristics: BRANCHING, yellowish canes can grow to 2m and more from matted roots with no pseudobulbs. Lady slipper buds, in pairs, open to 30mm white flowers with 4 yellow/green, purple topped ribs midlamina, side lobes and column usually purple but the purple may be absent.

Habitat: on many trees where rainfall is high.

Flowers December to January. *Distribution:* PK, N, S, St, Ch.

Conservation status: not threatened.

Notes: until recently *Dendrobium cunninghamii*.

Glossary

We have tried to keep the language simple but a number of technical terms proved necessary for brevity and clarity: here are the meanings of those we used.

alpine: zone above the forest and scrub line.

amphidiploid: hybrid with double the chromosome count of the parents.

anterior: in front.

apiculate: having a short, slender, more or less flexible point or **apiculus**.

apomictic: producing seeds without the union of sex cells

auricle: an ear-like appendage or lobe.

bract: a modified , often much-reduced leaf, usually on a flower stem.

callus: a hardened, usually thicker part, plural **calli**.

cilium: a short eyelash-like hair, plural **cilia**.

crenate: with shallow rounded teeth, the sinus acute.

crenulate: crenate on a small scale.

disc: central part of the labellum where the lobes meet; midlabellum; lamina.

fellfield: open area of low growing vegetation mostly of the high mountains.

filiform: thread-like, very slender but thicker than hair.

fimbriate: fringed.

glabrous: without hairs

gland: a secreting organ or any like protuberance, secreting or not.

lamina (disc): central part of the labellum where the lobes meet, or the expanded part of a leaf.

lanceolate: lance-shaped

linear: very narrow with parallel margins.

lowland: the zone from sea level to lowest level of occasional winter snowfall.

montane: lush mountain zone with occasional snowfalls in winter.

nerve: strand of conducting and strengthening tissue.

nonresupinate: refers to a flower with the labellum uppermost.

papillose: bearing minute pimple-like processes or **papillae**.

peduncle: flower stalk.

petiolate: having a leaf stalk or **petiole**.

pubescent: softly hairy

recurved: curved backwards.

saprophytic: of plants obtaining food from dead organic matter.

scape: a leafless floral axis or peduncle arising from the ground; it may carry flower or seed.

sensu lato (s.l.): in the broad sense.

sensu stricto (s.s.): in the narrow sense

serrulate: finely serrated, with minute teeth

sessile: without a stalk.

sinuate: with deep wavy margins, but not undulate.

sinus: the recess between two lobes or segments.

subalpine: uppermost zone of forest and scrub, has regular snow falls in winter.

synsepalum: conjoined lateral sepals.

taxon: any group of any rank: family, genus, form, variety or species, etc: plural **taxa**.

tepal: petal or sepal but not the labellum.

trefoil: three lobed like a clover leaf.

tubercle: a small wart-like swelling.

undulate: waved in a plane at right angles to the surface.



The New Zealand Native Orchid Group's aims are to make information about native orchids available and to promote their conservation. To further these aims the Group has a Code of ethical conduct.

1. Regard the orchid tuber as sacred and leave it undisturbed. Take only photographs if a plant is scarce in a locality. If you need a specimen for identification, take the minimum — don't take the whole plant unless there are more than twenty; don't take more than 5% of any one epiphyte; don't take flowers or fruit if there are few present; don't take duplicates. It is illegal to take specimens of any native plant from a Protected Natural Area without official permission.
2. Make sure you know whether it can be grown, and if so what its requirements are, before you take even a "common" native orchid for cultivation; where possible use seeds.
3. Preserve the habitat of all native plants: tread with care to minimise compaction of soil and disturbance of swamp habitat; "garden" minimally before taking photographs and do replace shelter if you have bent surrounding vegetation away.
4. Don't introduce any plant into wild habitat without proper authority.
5. Do tell the conservation people if you find a new site for a rare plant. Inform those who might unwittingly destroy a site with normal maintenance activities. Take care who you tell about the whereabouts of a rare plant, and don't take big groups to visit.
6. Tell park or property administrators when they need to protect orchid habitat by clearing scrub, maintaining tracks, spraying weeds or burning off.
7. Respect the rights and wishes of landowners and those of conservation people who ask you not to visit a site at certain times.
8. Make little impact on the environment; dispose of rubbish responsibly.