

Field guide to the New Zealand orchids

Ian St George, Bruce Irwin, Dan Hatch, Eric Scanlen

2001 edition

Jaël Donagy

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by
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and
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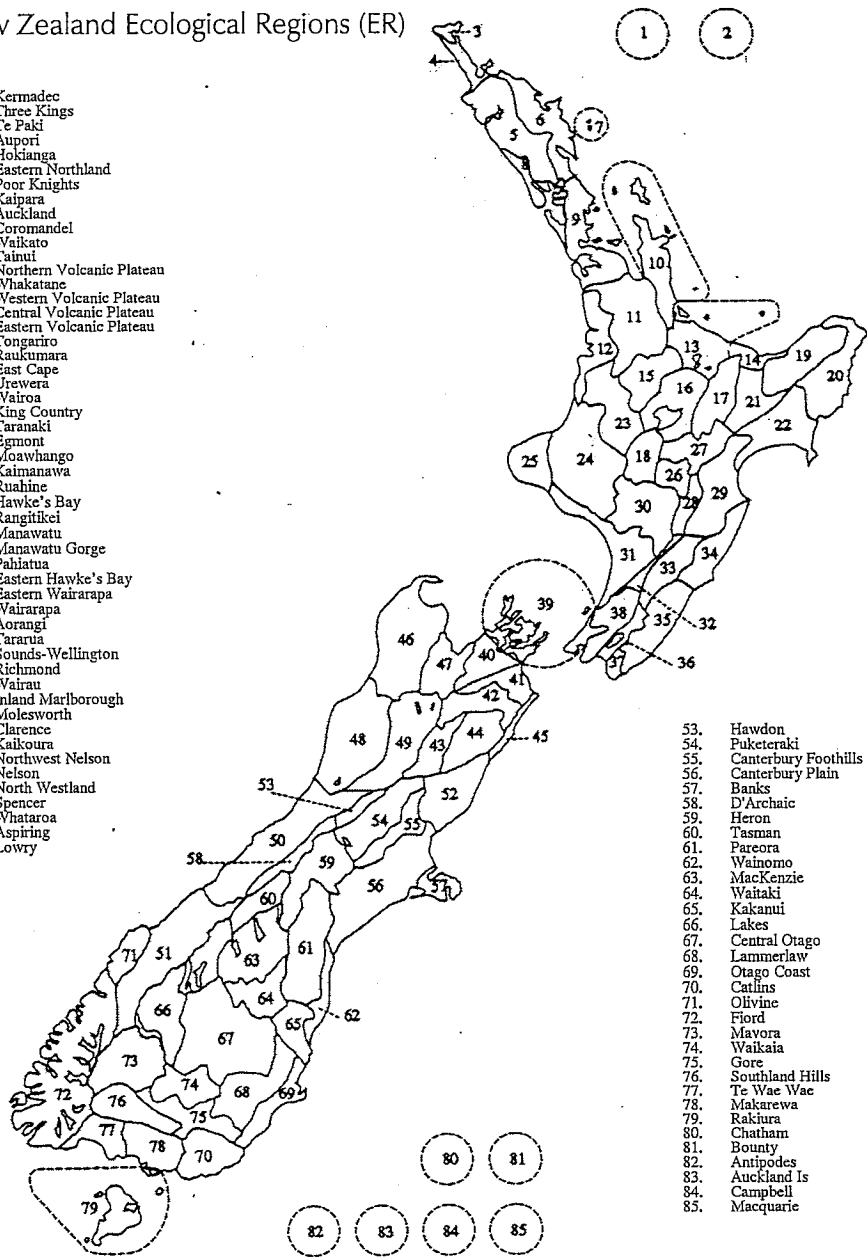
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New Zealand Ecological Regions (ER)

1. Kermadec
2. Three Kings
3. Te Paki
4. Aupori
5. Hokianga
6. Eastern Northland
7. Poor Knights
8. Kaipara
9. Auckland
10. Coromandel
11. Waikato
12. Tainui
13. Northern Volcanic Plateau
14. Whakatane
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. Hawke's Bay
30. Rangitikei
31. Manawatu
32. Manawatu Gorge
33. Pahiataua
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

53. Hawdon
54. Puketaraki
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



Introduction to the second edition

In the four years since the first edition of this guide there have been a number of taxonomic advances, new genera and species have been described, new taxa recognised, and a number of others renamed.

We now recognise about 120 New Zealand orchids, and we are confident there are more.

This new edition details the new names, adds to the descriptions and drawings to clarify differentiating features, and updates the distribution maps.

There is controversy about the identity of several New Zealand species: plants that have been regarded as identical with Australian species may not be so; several tag-named taxa await formal description. The four of us do not agree fully about the identification of all taxa in this book, and we have made some compromises. We look forward to a new definitive catalogue of the NZ orchids, now in preparation.

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, Ian St George and Eric Scanlen.

The Group's *Newsletters* reported field trips and orchid sightings, and members of the Group have felt a growing concern about diminishing habitat for a number of species; many of the reported distributions seemed no longer to apply. With the help of grants from Lottery Science (now the New Zealand Lottery Grants Board) we conducted a survey of the distribution of different species. Observations for the New Zealand Native Orchid Group's Mapping Scheme span the period since 1972. Members used a simple report form to record orchid finds in the different Ecological Regions. While we recognised that the smaller Ecological Districts would more accurately reflect habitat, the sheer number of Districts was so much greater than the number of people reporting, that we decided to use the larger Regions. Report forms were collated and the data transferred to computer-generated maps.

There are inevitably omissions and inaccuracies in the maps. Some species have been "split" since the scheme began; for instance *Caladenia carnea* as reported by Lucy Moore in 1970, contained what we now recognise as at least six different species. Such changes came after our mapping scheme had started, so maps are incomplete for these taxa. Others, such as *Corybas trilobus*, contain several other taxa, but remain unsplit, so the maps show the total distribution. Some Ecological Regions are remote; others were simply not reported. Widely separated or bipolar distributions may suggest the presence of different taxa, but should be interpreted with caution, as they may simply reflect under-reporting of new or unfamiliar taxa.

Common names can be misleading, 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*. Eight genera (*Adenochilus*,

Aporostylis, *Caleana*, *Cryptostylis*, *Danhatchia*, *Townsonia*, *Waireia* and *Winika* have only one species in New Zealand.

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 and karyology 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 the elaborate 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 *Corybas* the labellum is rolled.

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*.

What human-kind calls "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.

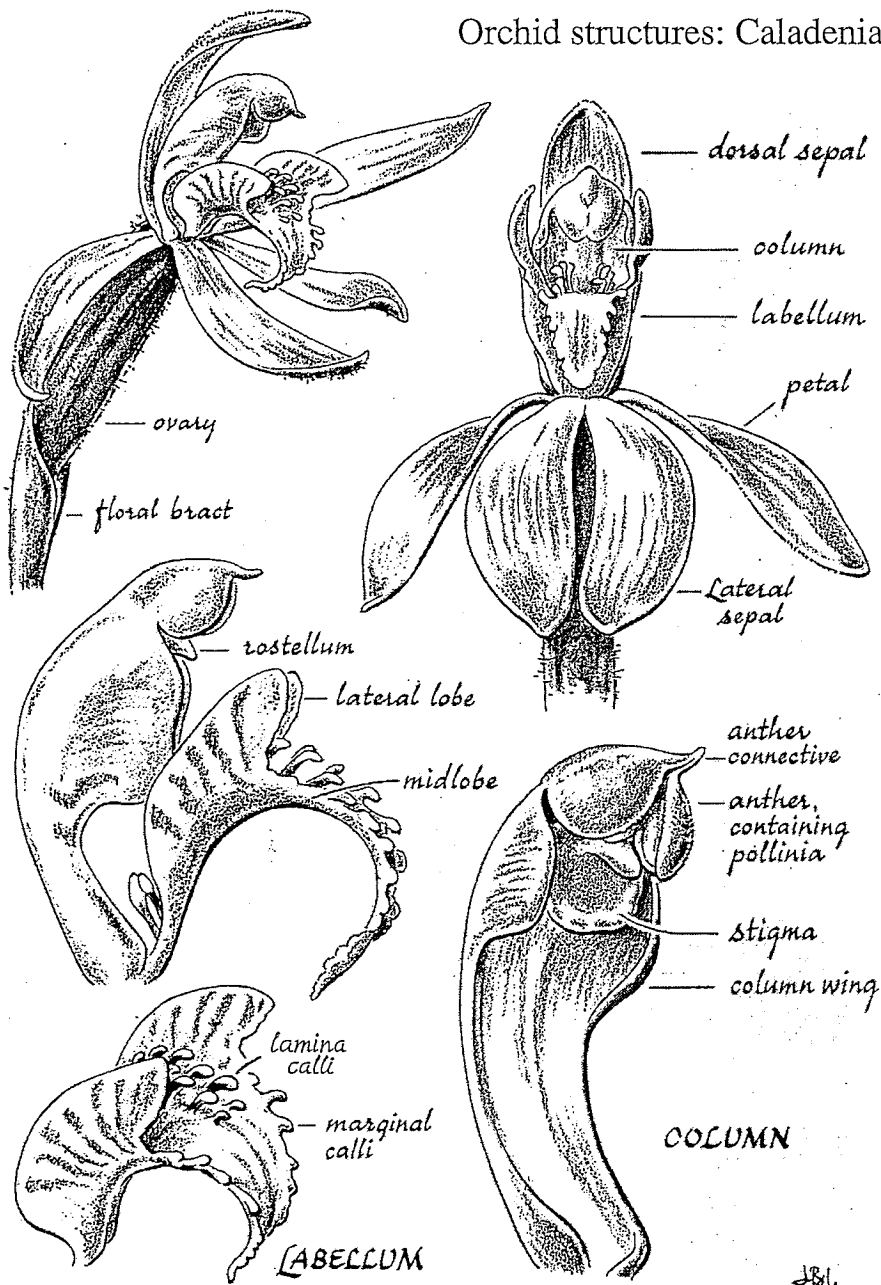
We express our indebtedness especially to Peter de Lange for careful, detailed and helpful criticism, to Ewen Cameron for advice on botanical nomenclature, and to Phil Knightbridge for providing photographs of *Pterostylis cernua*. We are grateful for the continued support of members of the New Zealand Native Orchid Group who send reports of their orchid finds in the more remote corners of the country.

These notes are 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 do report your find to the staff of the Department of Conservation.

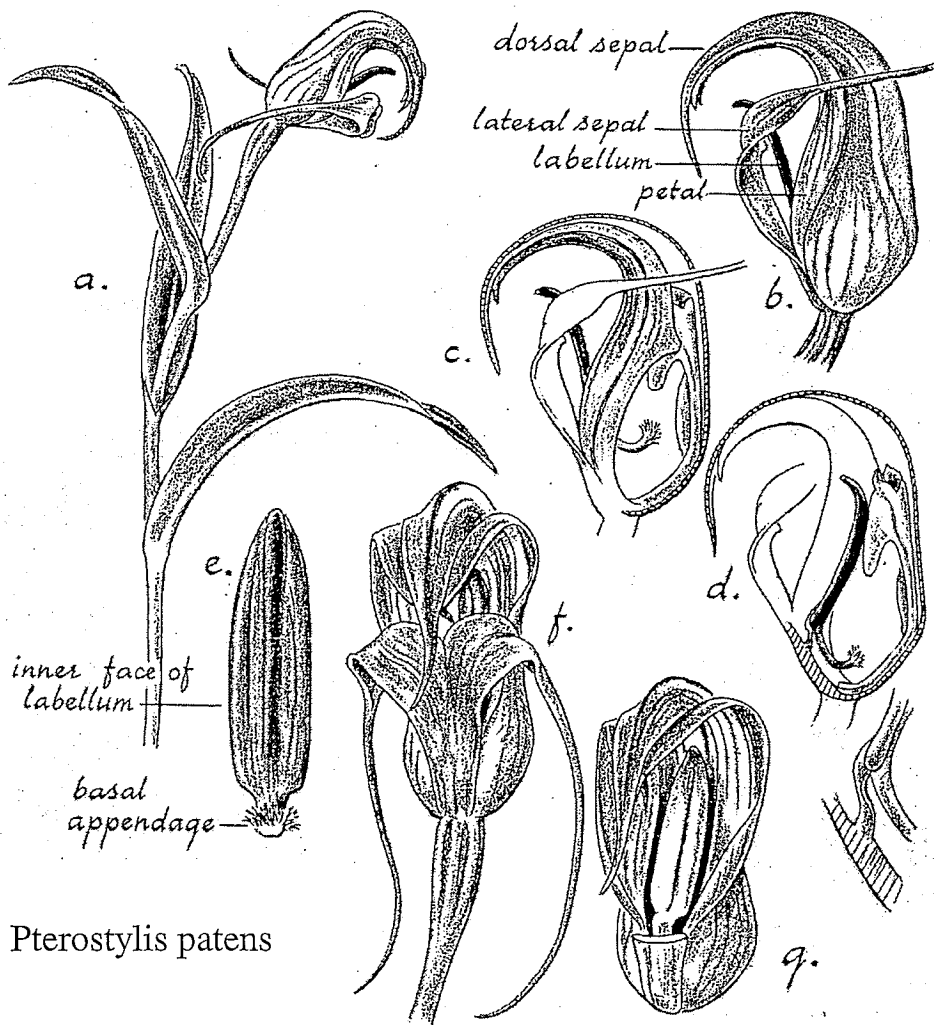
Admire them, smell them, photograph them or draw them; but please do not take them. We hope this guide will help you identify them in the field; that way you will not have to take one home for identification.

Ian St George, Bruce Irwin, Dan Hatch, Eric Scanlen

Orchid structures: Caladenia



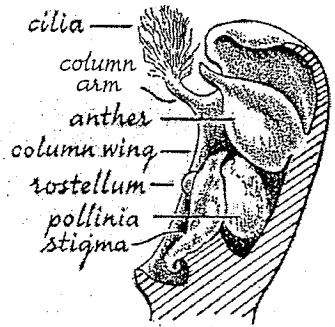
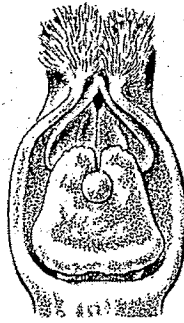
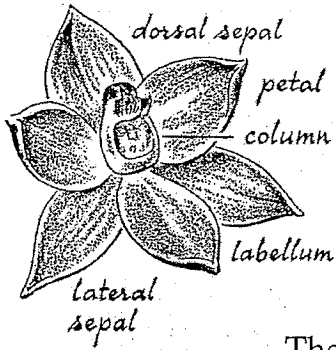
J.B.I.



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*

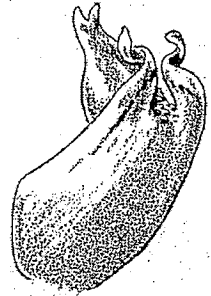
Other
Thelymitra
columns



T. hatchii

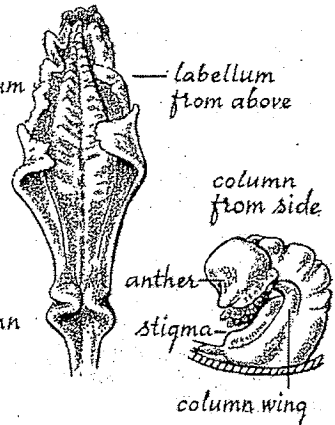
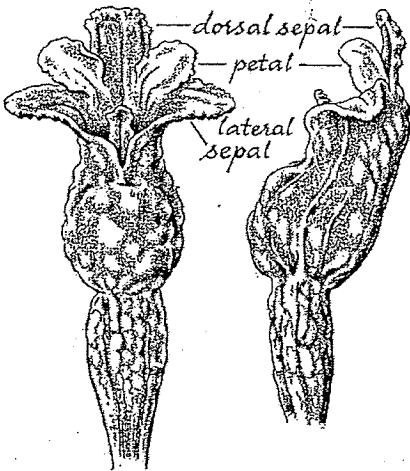


T. carnea

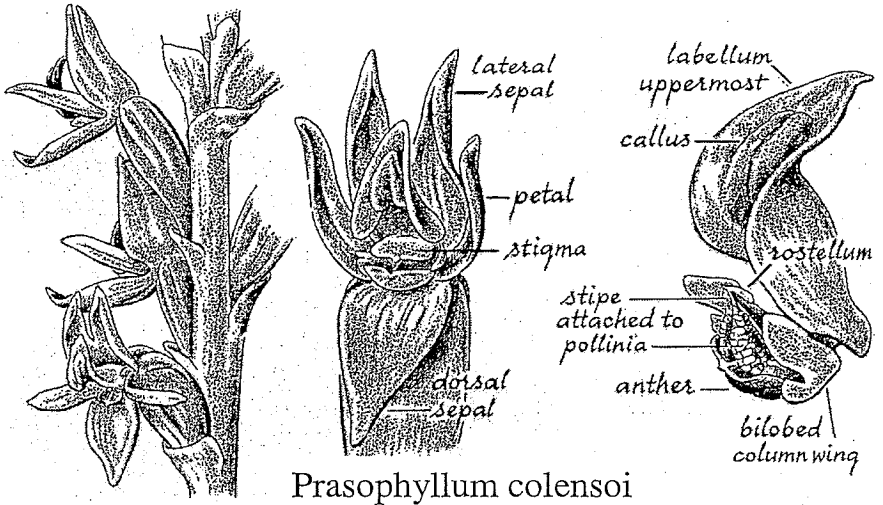
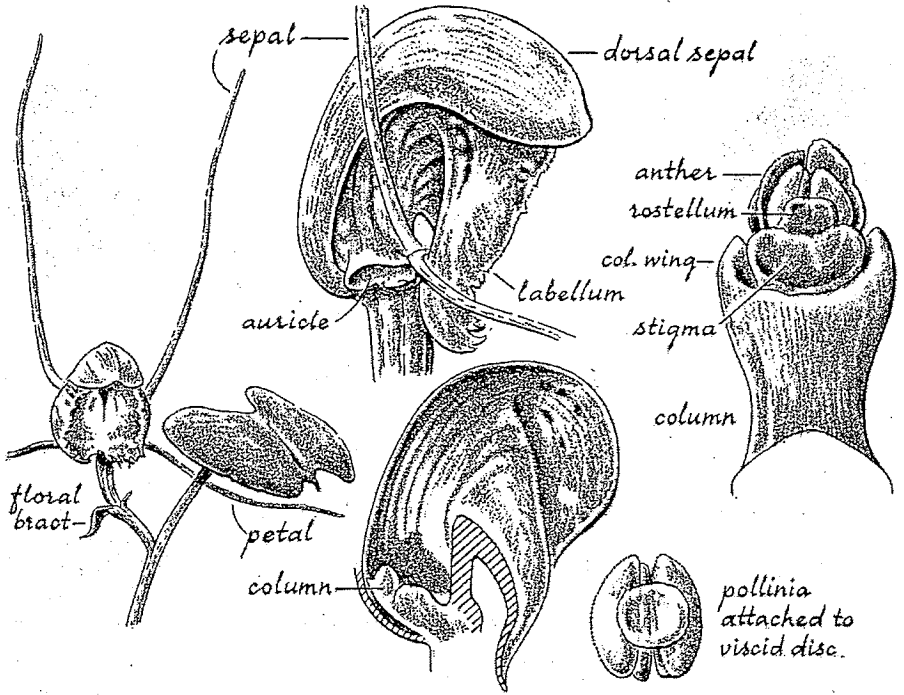


T. cyanea

Gastrodia cunninghamii



Corybas trilobus agg.



Prasophyllum colensoi

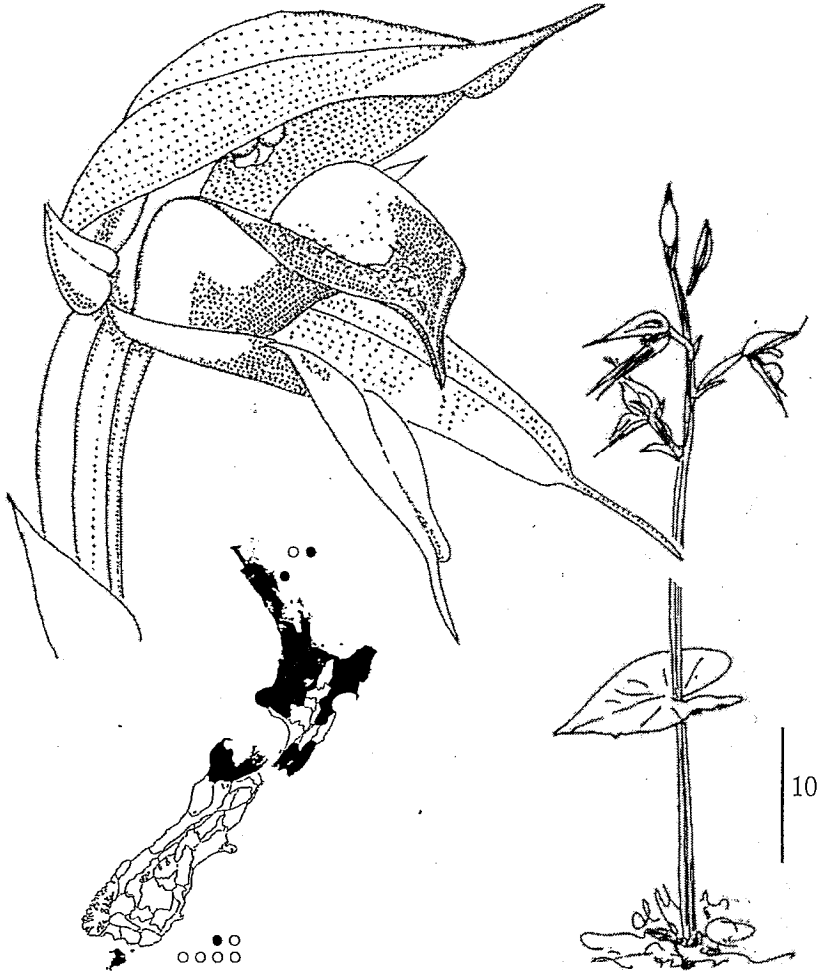
Acianthus sinclairii Hook.f. *Flora NZ* 1:245 (1853)

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 labellum. Dorsal sepal cupped over the column, lateral sepals with pointed “tails”, petals shorter, labellum broad, cupped and pointed.

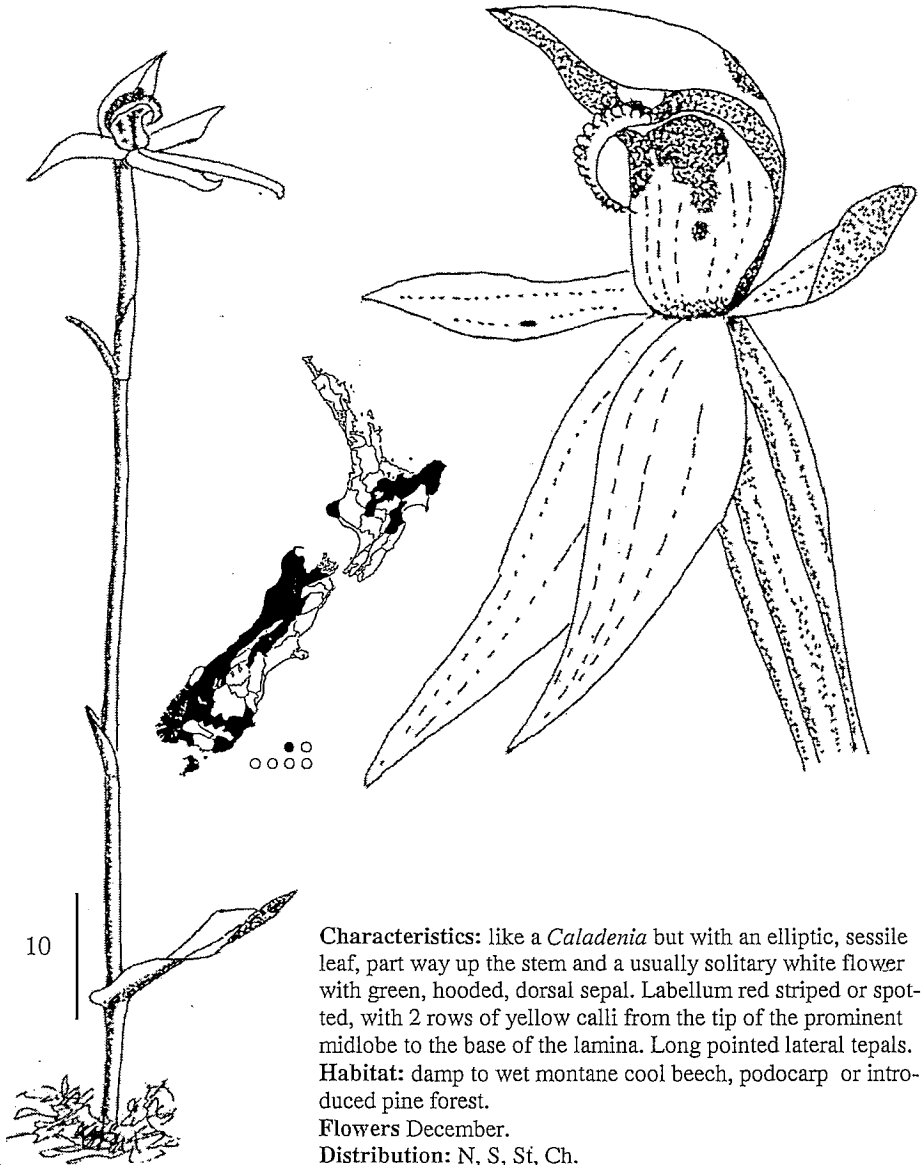
Habitat: colonies of many plants in lowland forest and tracksides.

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

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



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



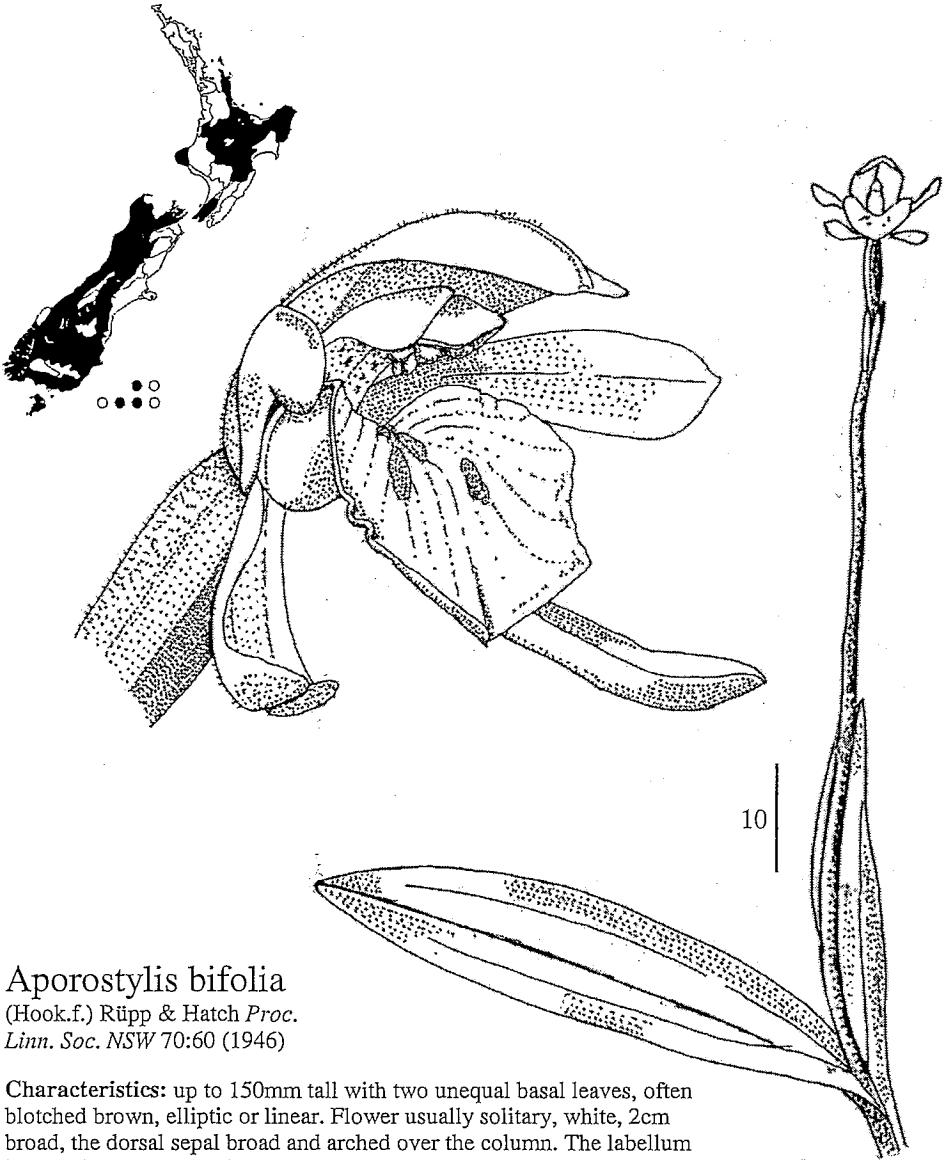
Characteristics: like a *Caladenia* but with an elliptic, sessile leaf, part way up the stem and a usually solitary white flower with green, hooded, dorsal sepal. Labellum red striped or spotted, with 2 rows of yellow calli from the tip of the prominent midlobe to the base of the lamina. Long pointed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

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

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: up to 150mm tall with two unequal basal leaves, often blotched brown, elliptic or linear. Flower usually solitary, white, 2cm broad, the dorsal sepal broad and arched over the column. The labellum broad with yellow and brown markings. Sepals and petals narrower.

Habitat: montane scrub.

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

Conservation status: not threatened.

Notes: there may be two taxa here.

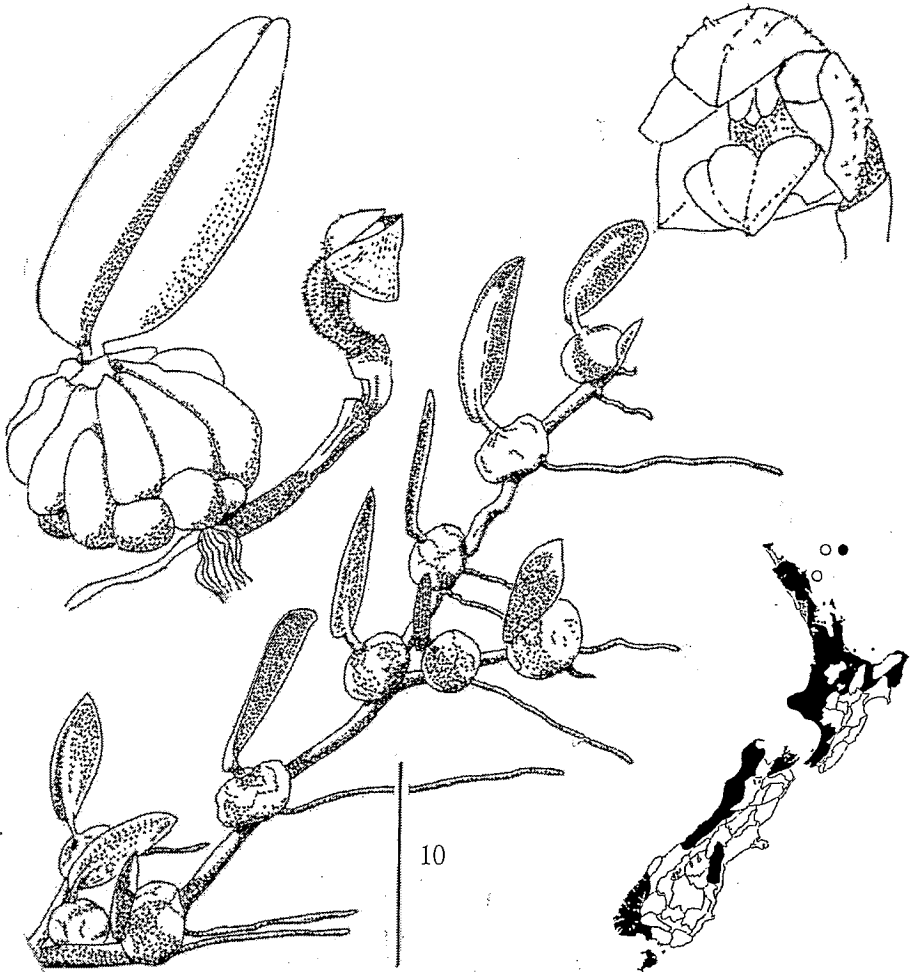
Bulbophyllum pygmaeum (Sm.) Lindl. *Genera & Spec. Orch. Plants.* 58 (1830)

Characteristics: match head sized green pseudobulbs each topped by a single, oval leaf \pm 10mm long. Flower solitary, creamy green, 3mm across, opens briefly but remains attached to capsule. The capsule is unusual in that the two upper valves remain together when it opens, giving a bi-valved appearance.

Habitat: matted on tree trunks and branches, sometimes on rocks.

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

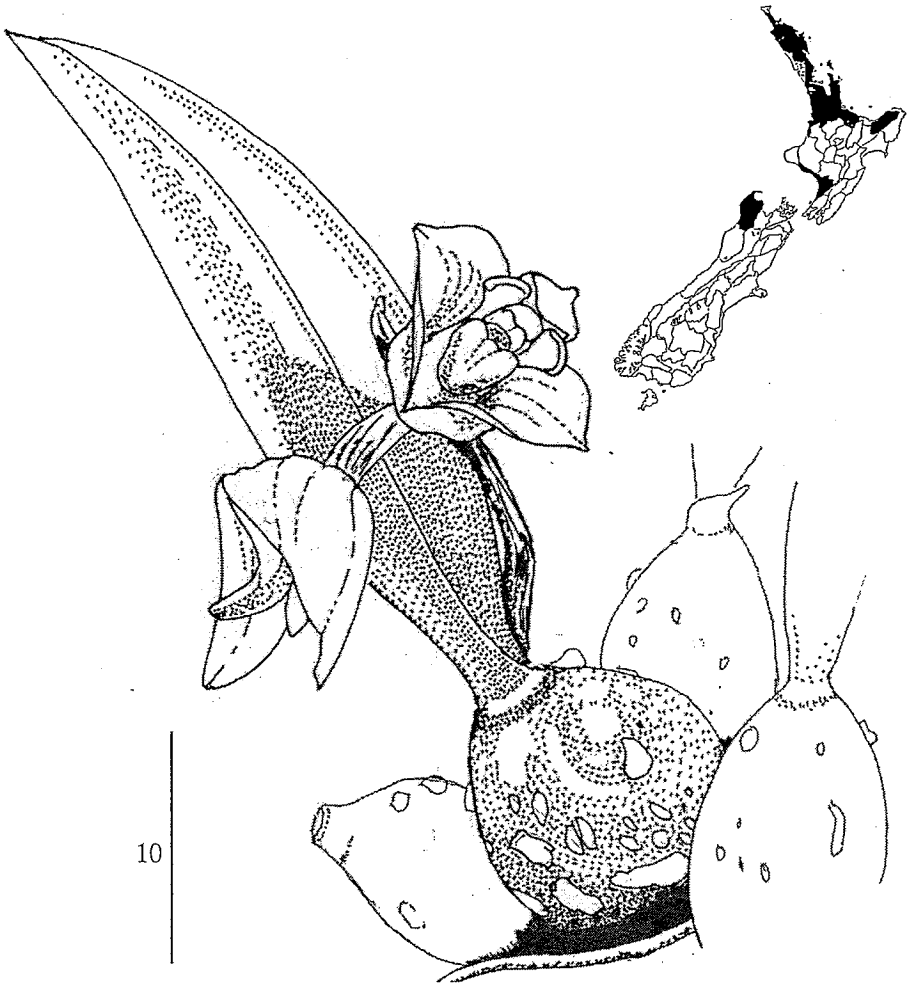
Conservation status: not threatened



Bulbophyllum tuberculatum Colenso *TNZI* 16:336 (1884)

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*. Although a nationally uncommon species, it occurs sparsely in lowland forest canopies. **Flowers** April to May. **Distribution:** N, S. **Conservation status:** not threatened.



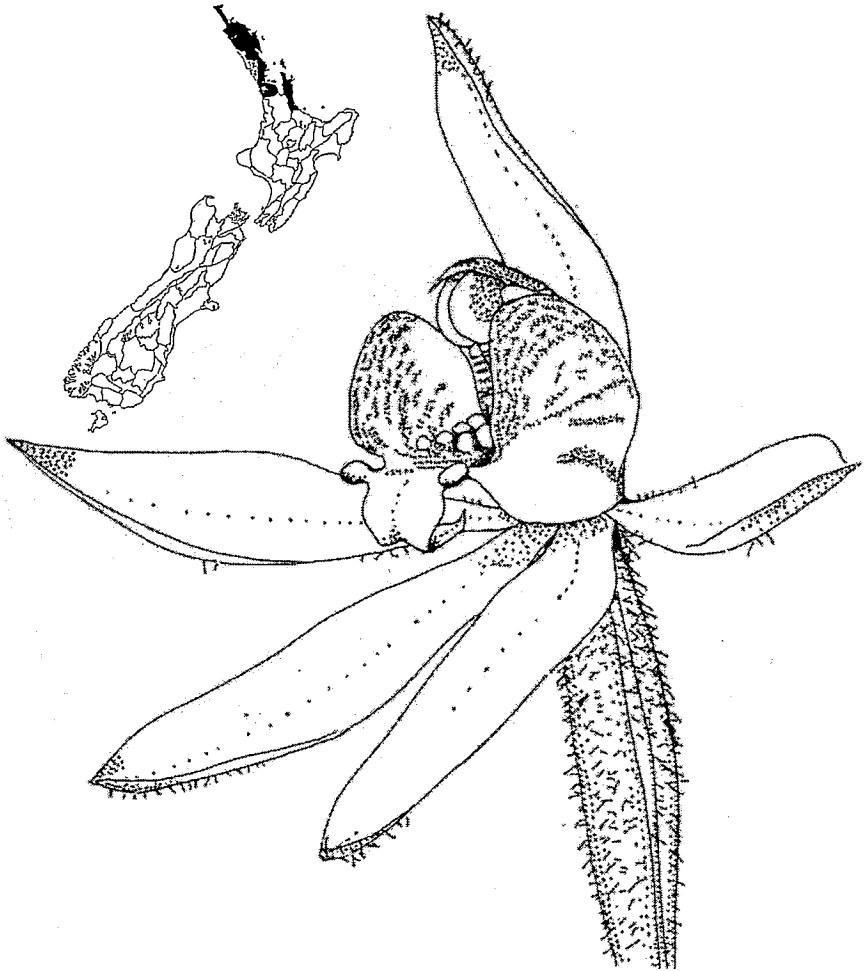
Caladenia alata R.Br. *Prodr.* 1:324 (1810)

Characteristics: plants hairy, to 120mm tall, . Flowers usually solitary, tepals mostly white, sometimes pale pink or pale mauve, rarely red, acute. Labellum lamina, sidelobes and inner column with cerise bars. Two rows of yellow topped calli down the lamina. 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.

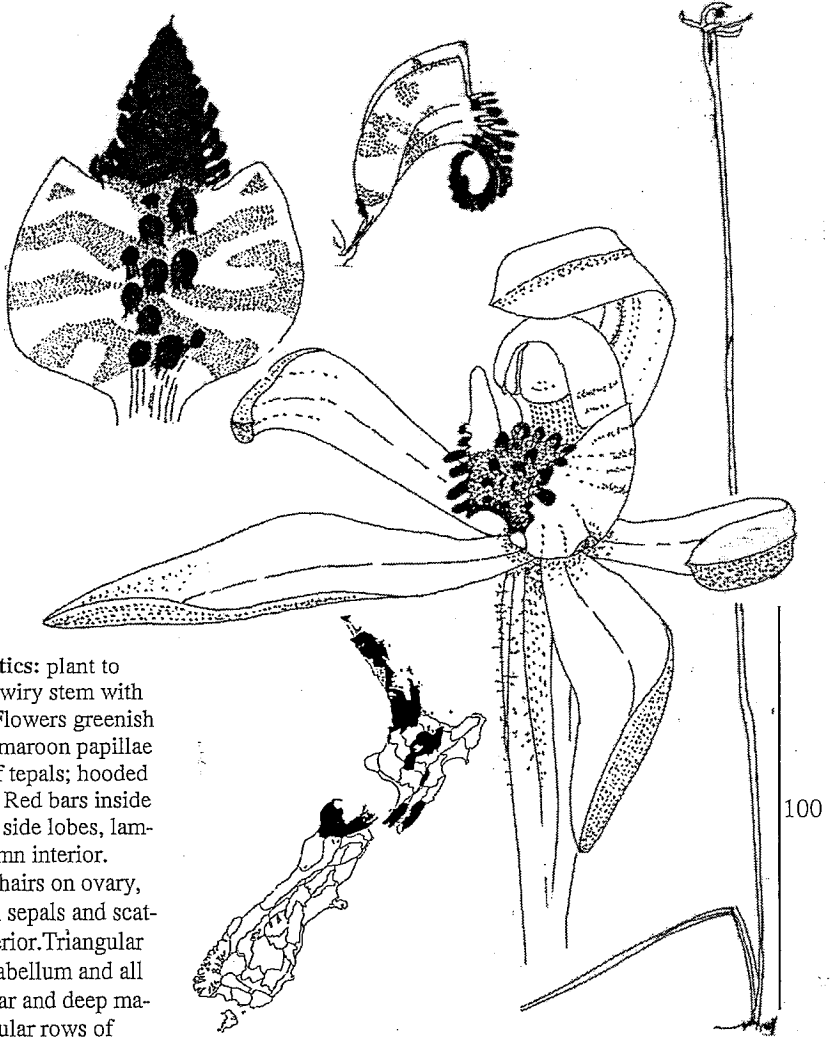
Flowers August to October. **Distribution:** N.

Conservation status: not threatened.



Caladenia atradenia

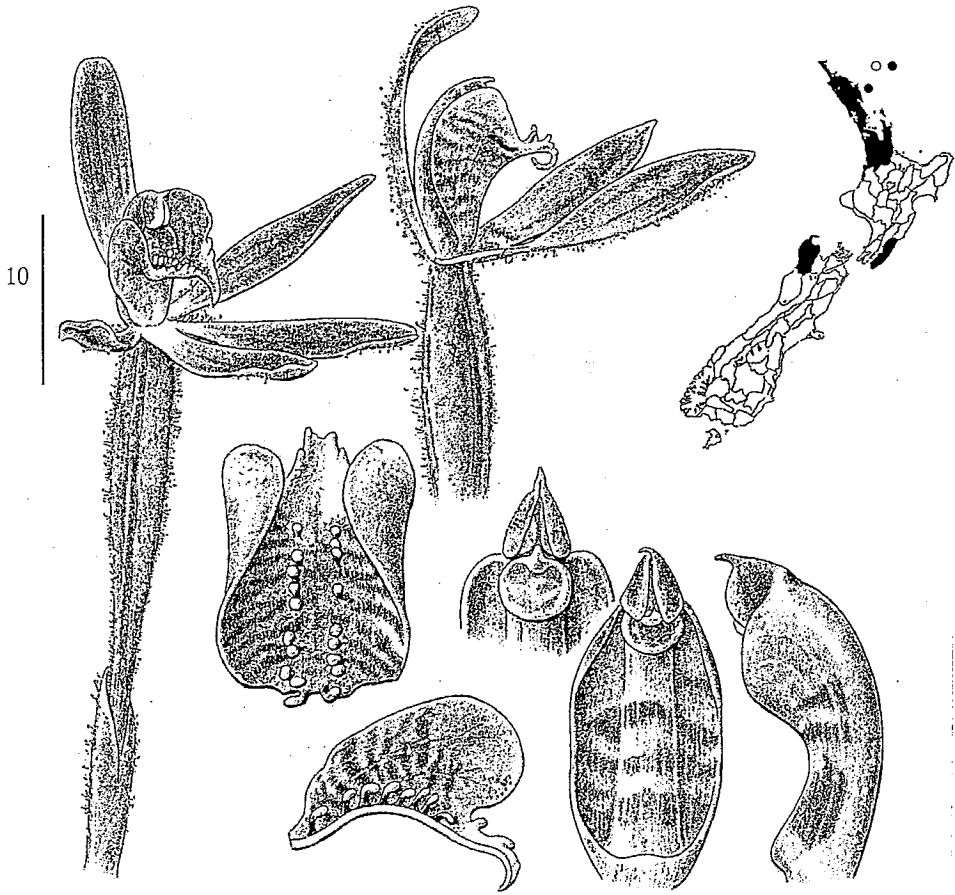
D.L.Jones, Molloy & M.A.Clem. *Orchadian* 12(5):221 (1997)



Characteristics: plant to 300mm tall, wiry stem with short hairs. Flowers greenish yellow with maroon papillae on outside of tepals; hooded dorsal sepal. Red bars inside the labellum side lobes, lamina 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 irregular rows of

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:** naturally uncommon: sparse.



Caladenia bartlettii

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

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 laminar calli and the midlobe are contrastingly, bright yellow. Sepals rounded; labellum red-barred white; sinuate midlobe with few marginal calli.

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

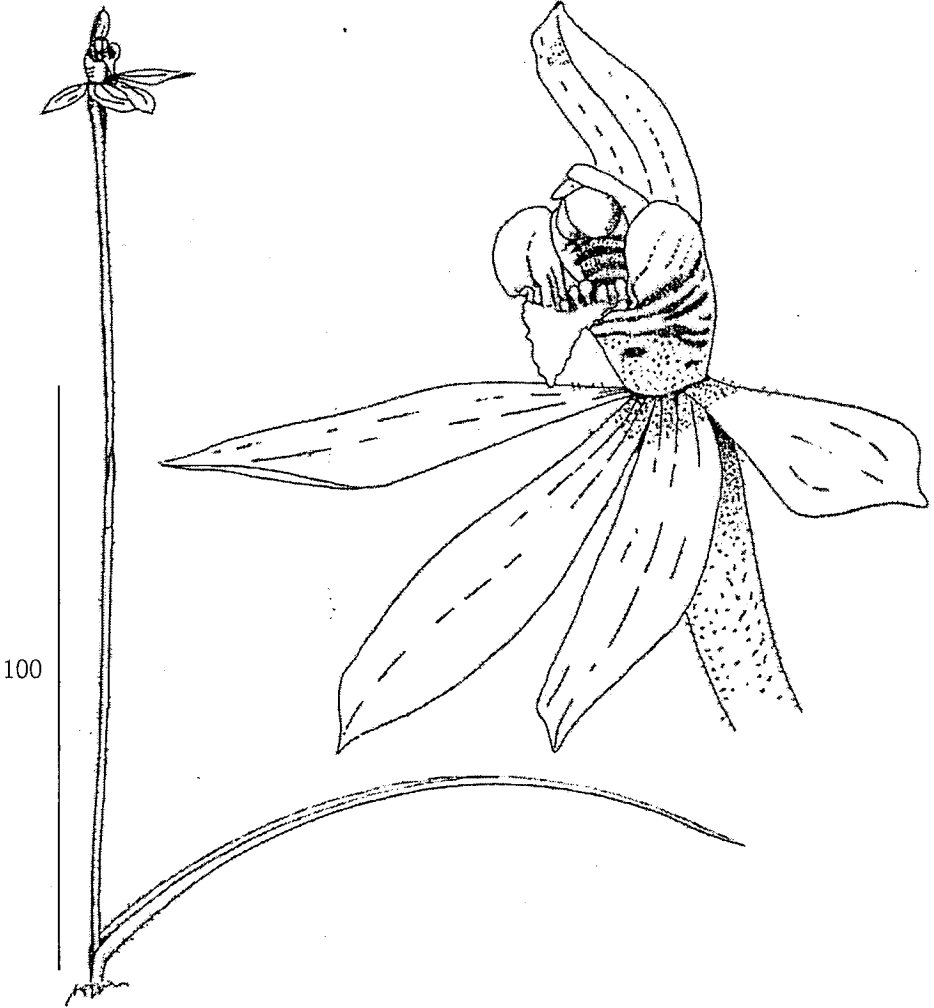
Flowers October to November.

Distribution: 3K, PK, N, S.

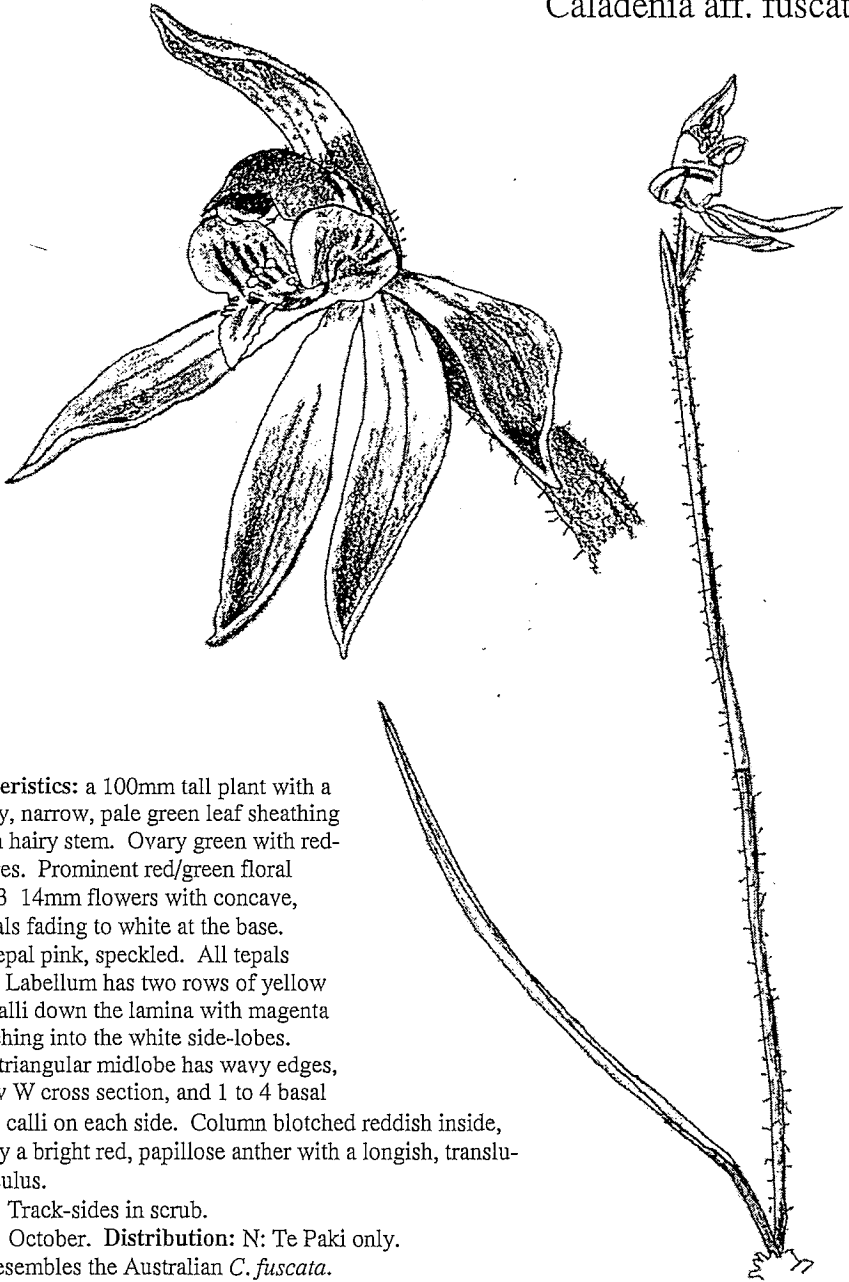
Conservation status: not threatened. **Notes:** very similar to the Australian *C. pusilla*; *C. bartlettii* is said to be a kauri-zone plant, but indistinguishable plants have been found in central NZ.

Caladenia aff carnea

There remains at least one undescribed pink caladenia which resembles most closely *C. variegata*, and may well be a simple variant of that species. This often has an apple green column, 2 rows of yellow topped calli on the red striped lamina, yellow or white triangular midlobe to the labellum with variable marginal calli. Lateral petals pointed, sepals obtuse to pointed. Flowers October to December.



Caladenia aff. fuscata



Characteristics: a 100mm tall plant with a non-hairy, narrow, pale green leaf sheathing a reddish hairy stem. Ovary green with reddish ridges. Prominent red/green floral bract; 1-3 14mm flowers with concave, pink tepals fading to white at the base. Dorsal sepal pink, speckled. All tepals pointed. Labellum has two rows of yellow topped calli down the lamina with magenta bars reaching into the white side-lobes. Yellow, triangular midlobe has wavy edges, a shallow W cross section, and 1 to 4 basal marginal calli on each side. Column blotched reddish inside, topped by a bright red, papillose anther with a longish, translucent apiculus.

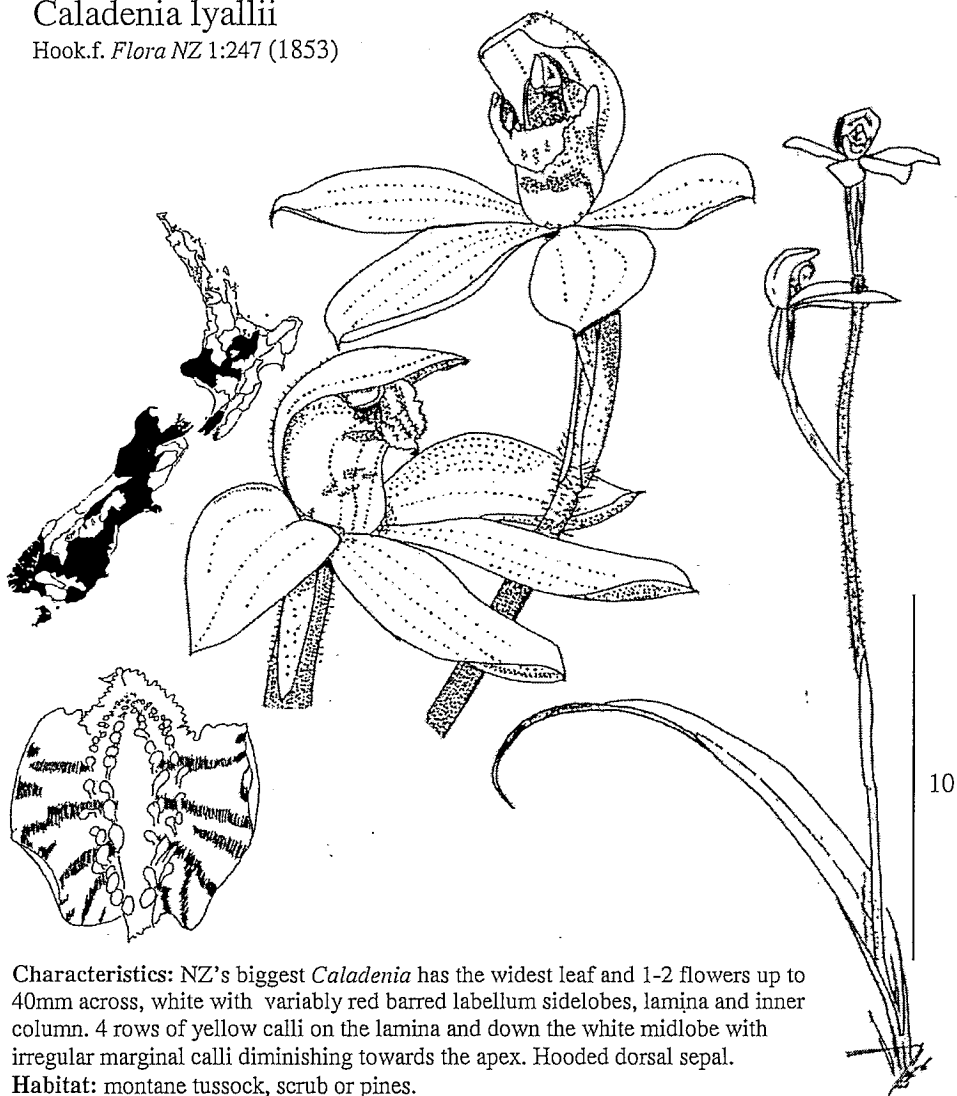
Habitat: Track-sides in scrub.

Flowers October. **Distribution:** N: Te Pahi only.

Notes: resembles the Australian *C. fuscata*.

Caladenia lyallii

Hook.f. *Flora NZ* 1:247 (1853)



Characteristics: NZ's biggest *Caladenia* has the widest 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.

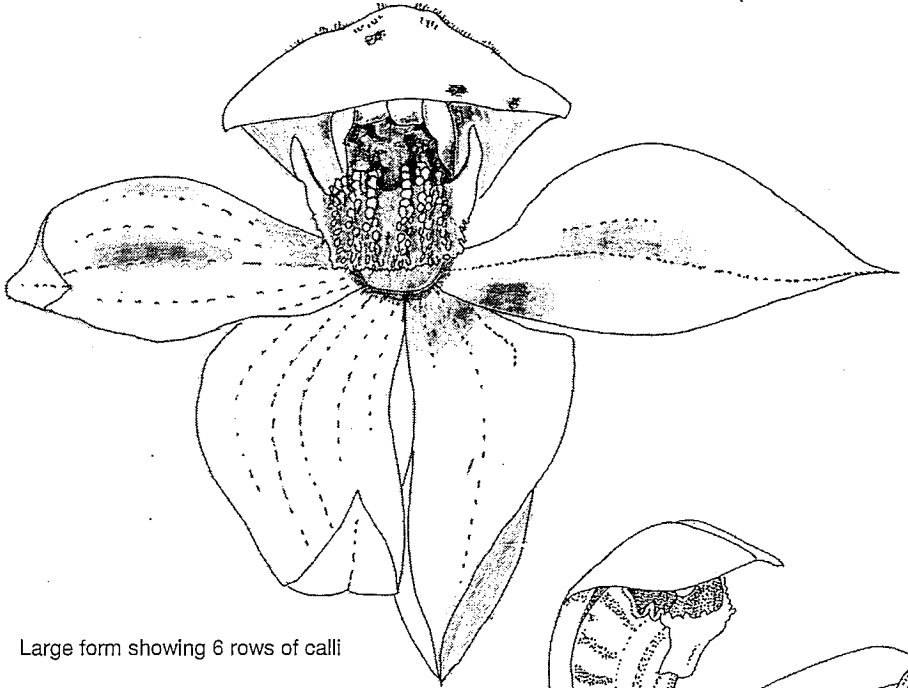
Distribution: N, S, St.

Conservation status: not threatened.

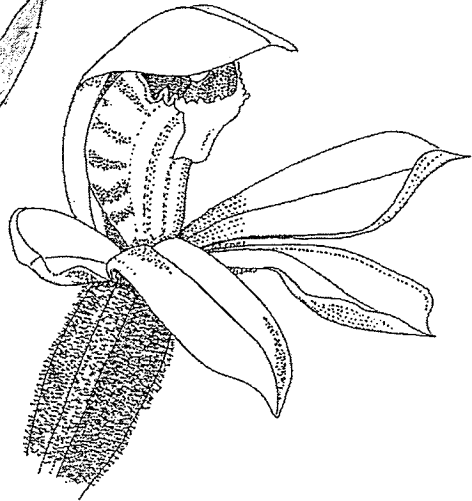
Notes: large specimens with 6 rows of calli and toothed anterior margins of the lateral lobes resemble the Australian *C. alpina*; small central N.Is plants may be an undescribed taxon (see *C. aff. lyallii* on next page).

Caladenia aff. *lyallii*

Two rather curious variations on the usual form of *C. lyallii* deserve mention. One is a robust form with six rows of calli on the lamina and fingerlike projections on the anterior edges of the lateral lobes: it resembles the Australian *C. alpina*. The other is a more delicate plant, nearer in size to *C. minor* than to *C. lyallii*; it is white (with a pointed labellar midlobe), or has red stripes on the labelum, and grows under pines at Iwitahi, is structurally similar to *C. lyallii*, and may simply reflect habitat effect.



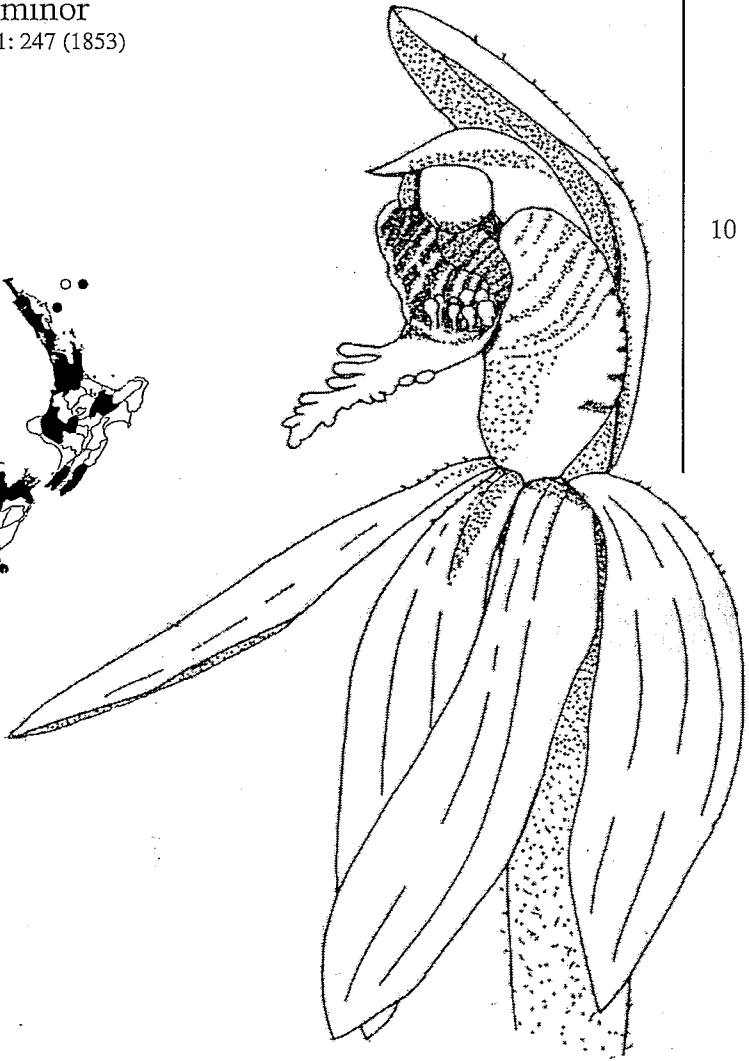
Large form showing 6 rows of calli



Small Iwitahi form

Caladenia minor

Hook.f. *Fl.N.Z.* 1: 247 (1853)



Characteristics: plant green hairy. 1 or 2, rarely more flowers of white to very pale green except for the variable red barred labellum sidelobes, lamina 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. **Notes:** *C. chlorostyla* appears to be a synonym.

Caladenia nothofageti

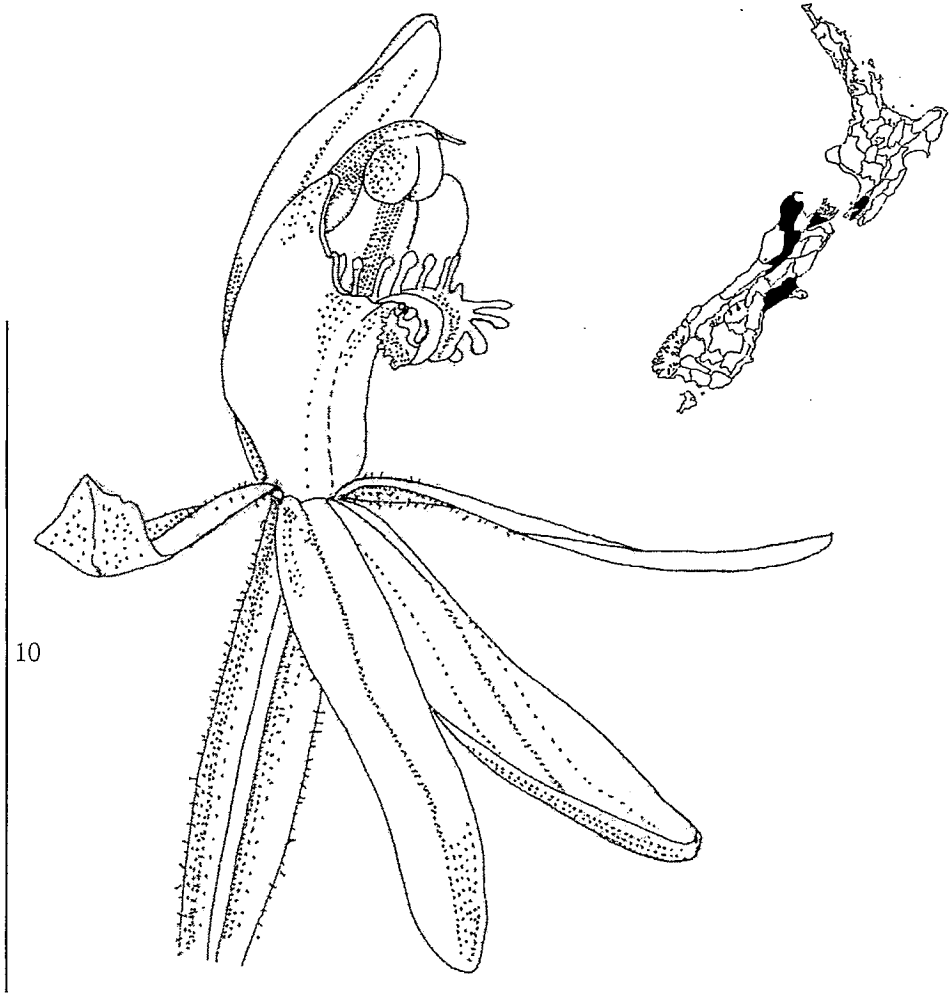
D.L.Jones Molloy & M.A.Clem. *Orchadian* 12(5):226 (1997)

Characteristics: plant 100mm tall, less hairy than most *Caladenia*. Pale green bud opens to a white flower except for pale green top to the column and creamy, clubbed calli in 2 rows down the lamina and flat marginal calli tooting the long, curled-under midlobe. Sepals obtuse.

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.

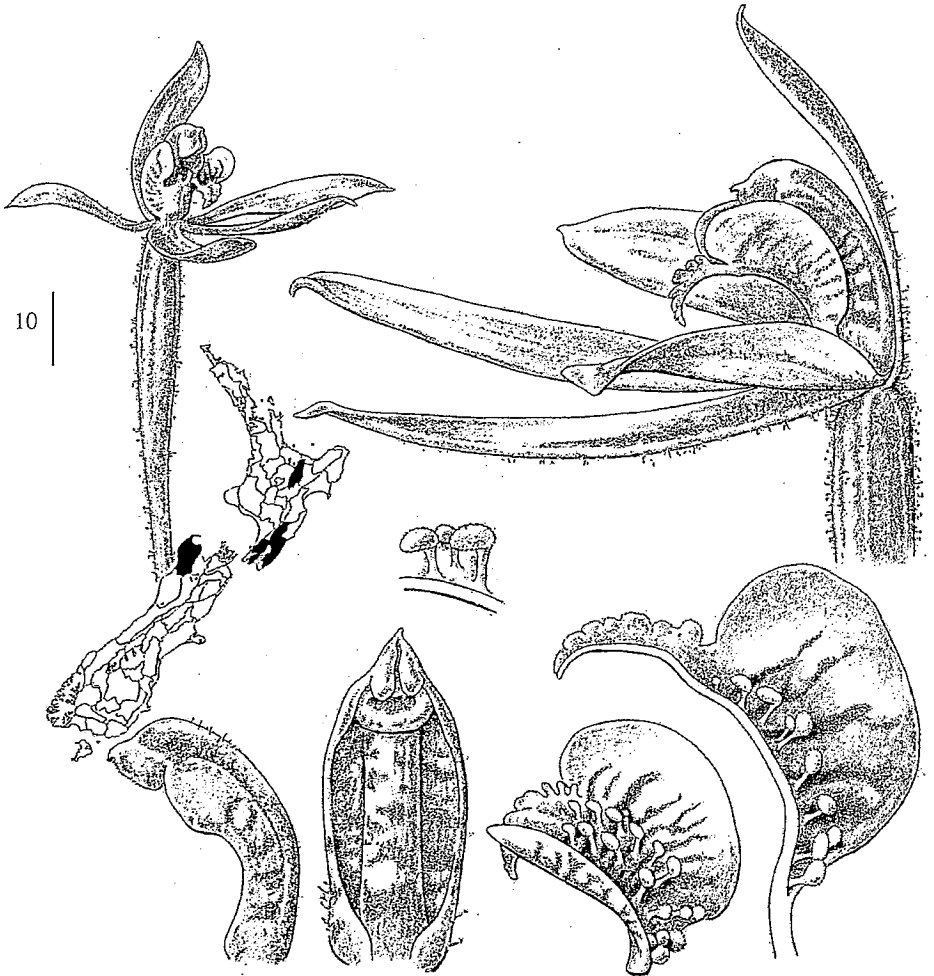


Caladenia variegata Colenso *TNZI* 17:248 (1885)

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 lamina and sidelobes striped with red. 2 rows of yellow 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. **Conservation status:** not threatened.





Caleana minor

R.Br. *Prodr.* 1:329 (1810)

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

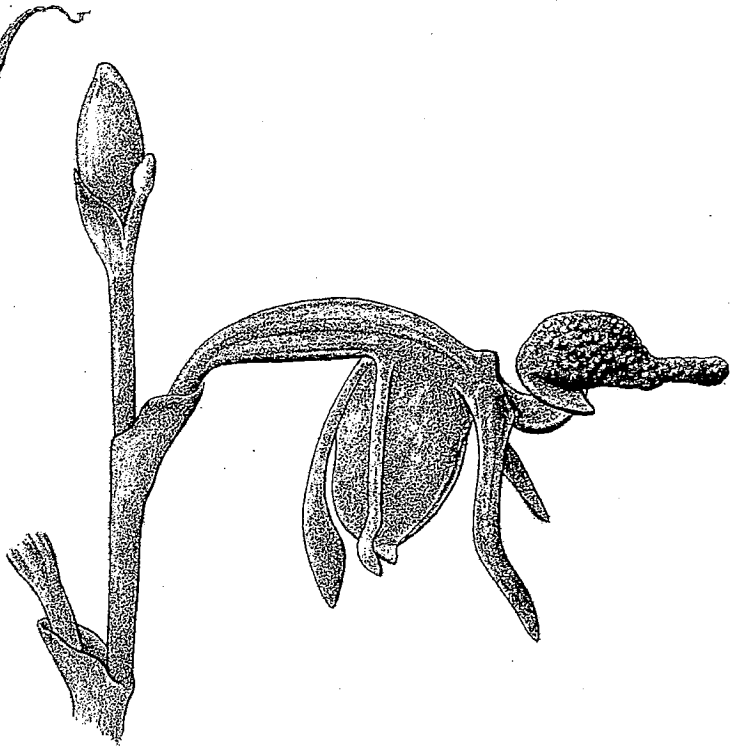
Habitat: sandy loams in dry sites.

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.



Calochilus aff. herbaceus

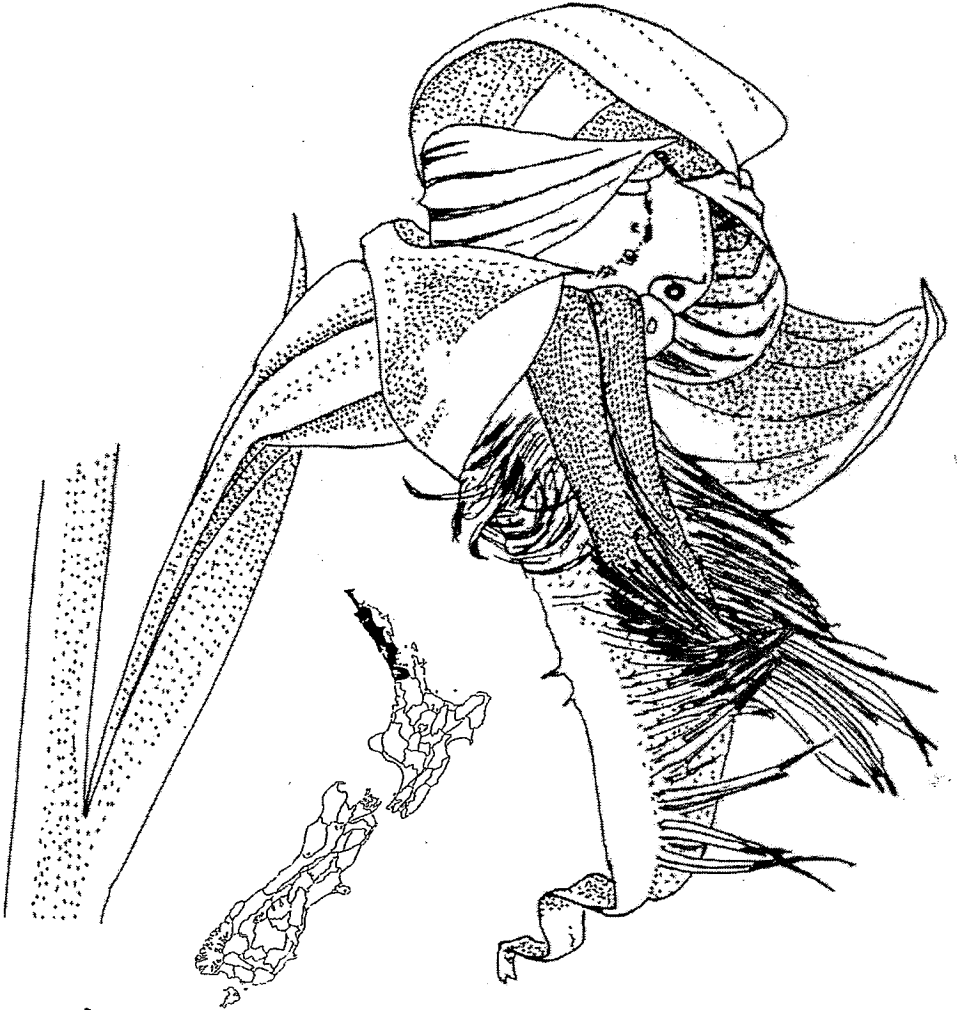
Characteristics: 300–600mm tall, up to 5 greenish yellow flowers with red stripes on lateral petals. Labellum has red whiskers around a violet lamina, a stepped green tip and widely spaced “eyes” (dark tubercles on the column wings).

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

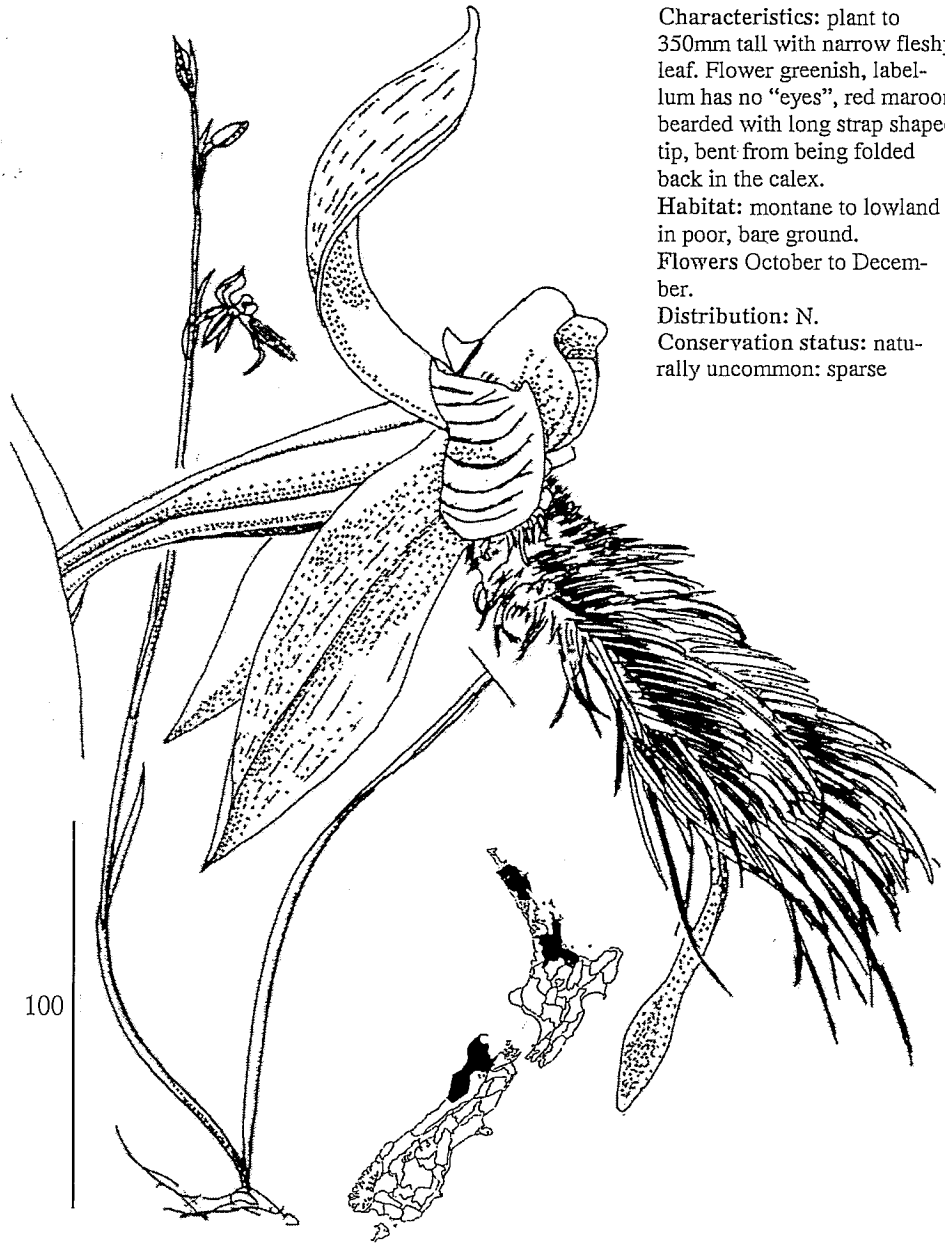
Flowers October to December. **Distribution:** N.

Conservation status: taxonomically indeterminate: critically endangered.

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, label-lum has no "eyes", red maroon bearded with long strap shaped tip, bent from being folded back in the calyx.

Habitat: montane to lowland in poor, bare ground.

Flowers October to December.

Distribution: N.

Conservation status: naturally uncommon: sparse

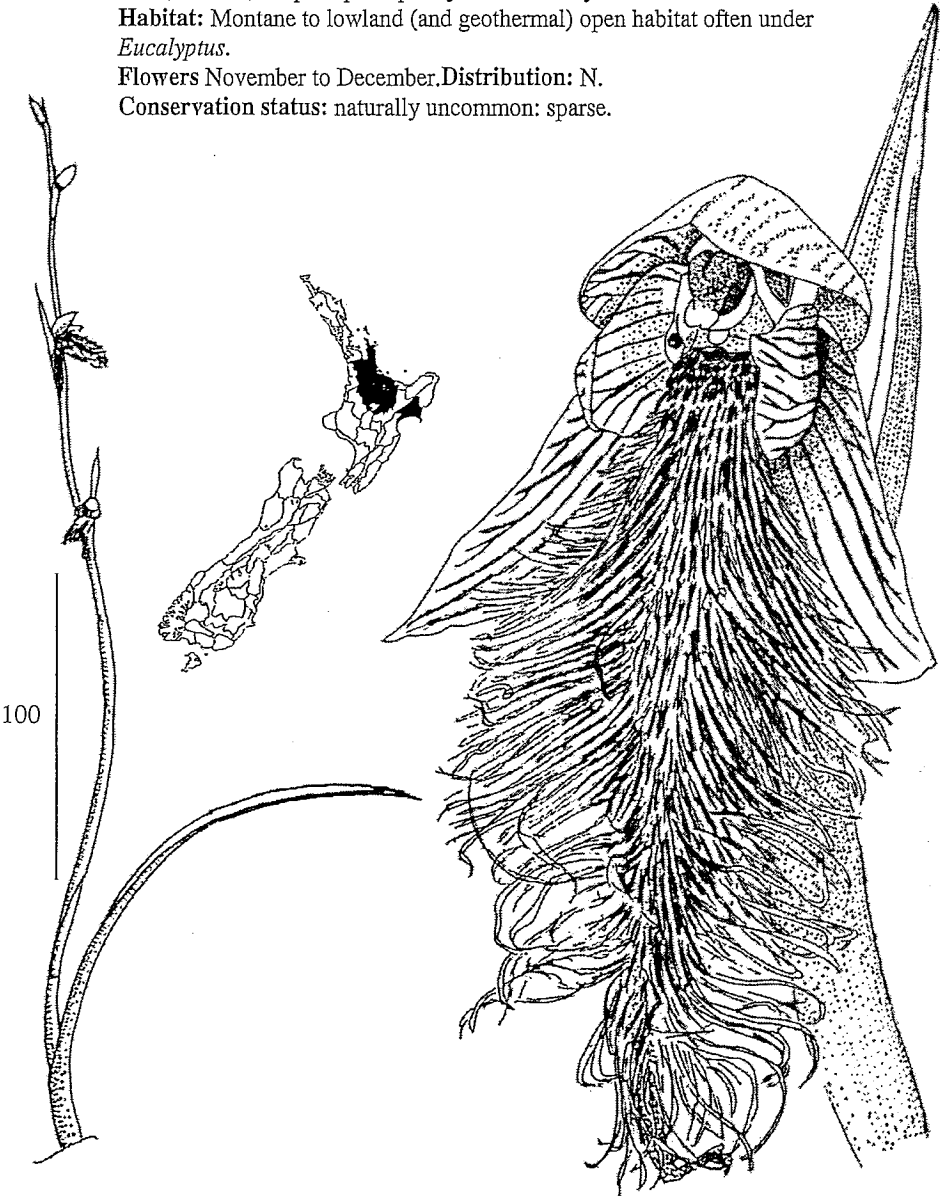
Calochilus robertsonii Benth. *Flora Austr.* 6:315 (1873)

Characteristics: wider leaf than *C. paludosus*, red bearded labellum with short, twisted, strap shaped tip. "Eyes" set closely.

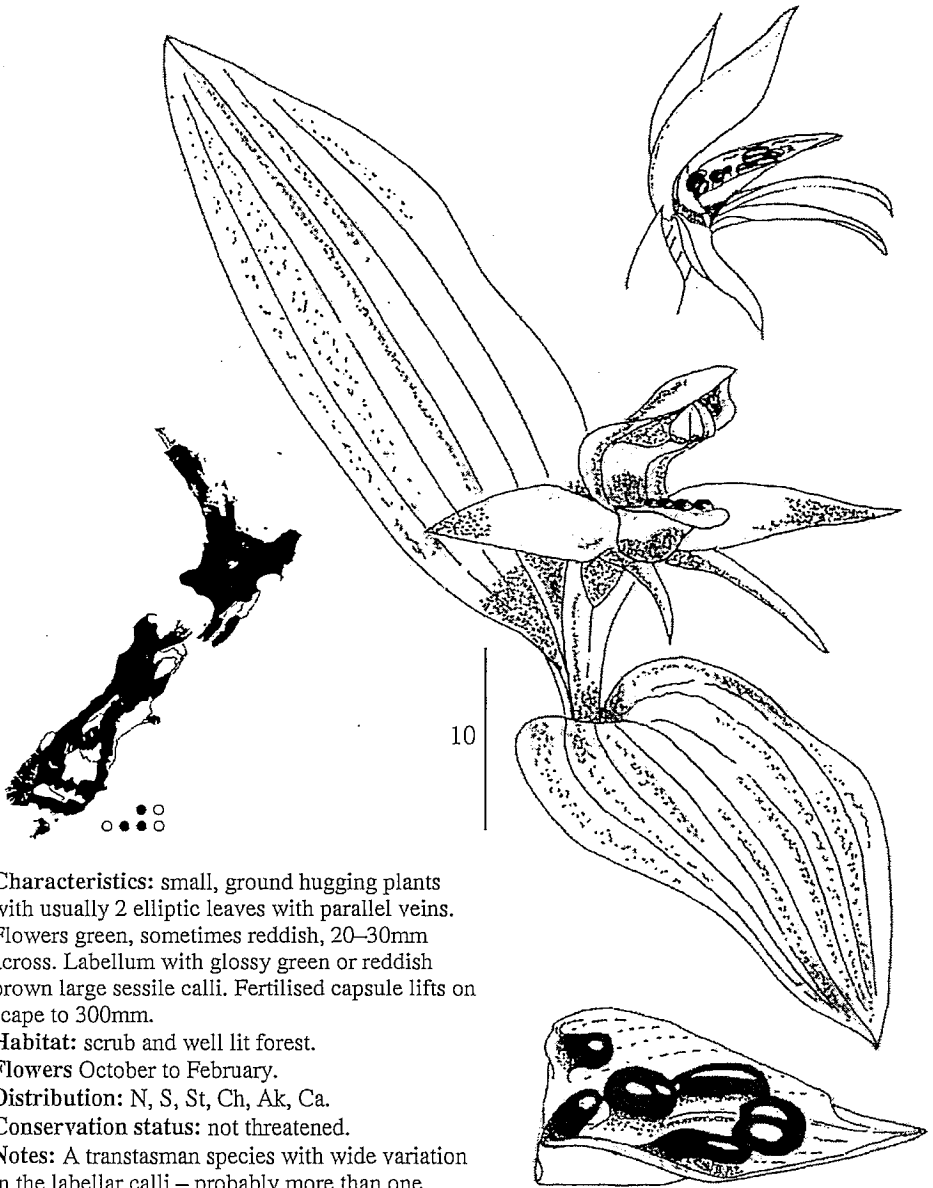
Habitat: Montane to lowland (and geothermal) open habitat often under *Eucalyptus*.

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

Conservation status: naturally uncommon: 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, sometimes 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, Ca.

Conservation status: not threatened.

Notes: A trans-tasman species with wide variation in the labellar calli – probably more than one taxon included – currently under study.

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

Characteristics: Reddish or green flower and peduncle; to 80mm tall with leaf margins distinctly wavy. Pale column and dark, tuberculate labellum mimicking a female wasp.

Flowers September. Distribution: N: only one record in NZ – Kaitaia, 1900–1915.

Conservation status: naturally uncommon, vagrant (extinct in NZ).

Notes: NZ herbarium specimens have many of the characteristics of *C. trapeziformis*.



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

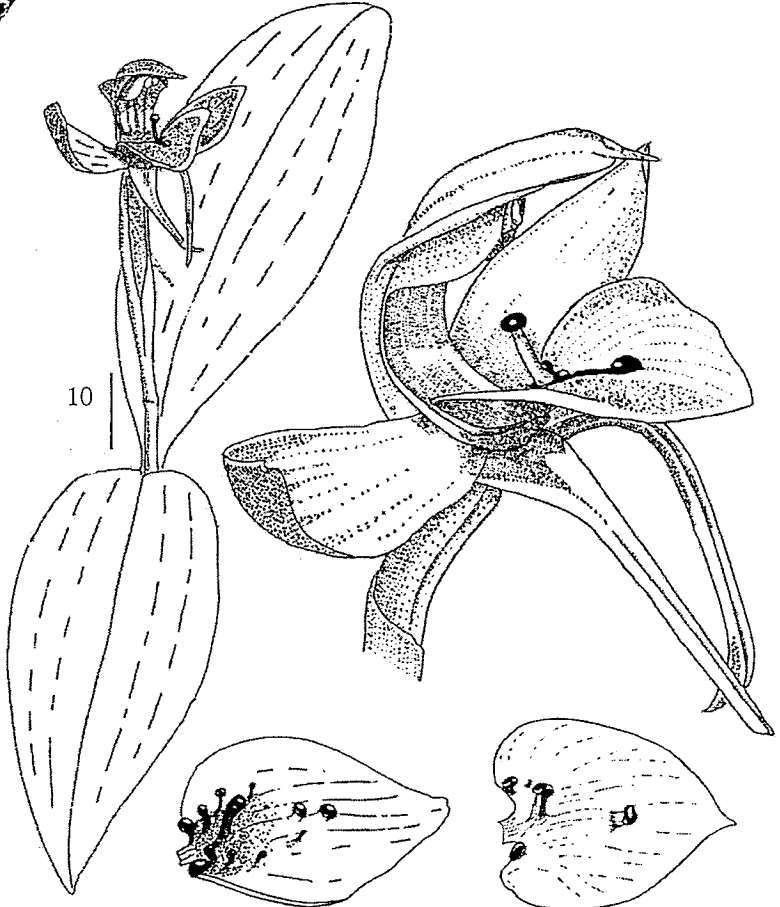
Characteristics: plant larger than *C. cornuta*, leaves wider and longer. Greenish flowers darken to purple/brown. Jiggling flips the labellum to its low position to reveal one stalked, black topped callus with one to several sessile calli (sometimes on short stalks) either side and in front.

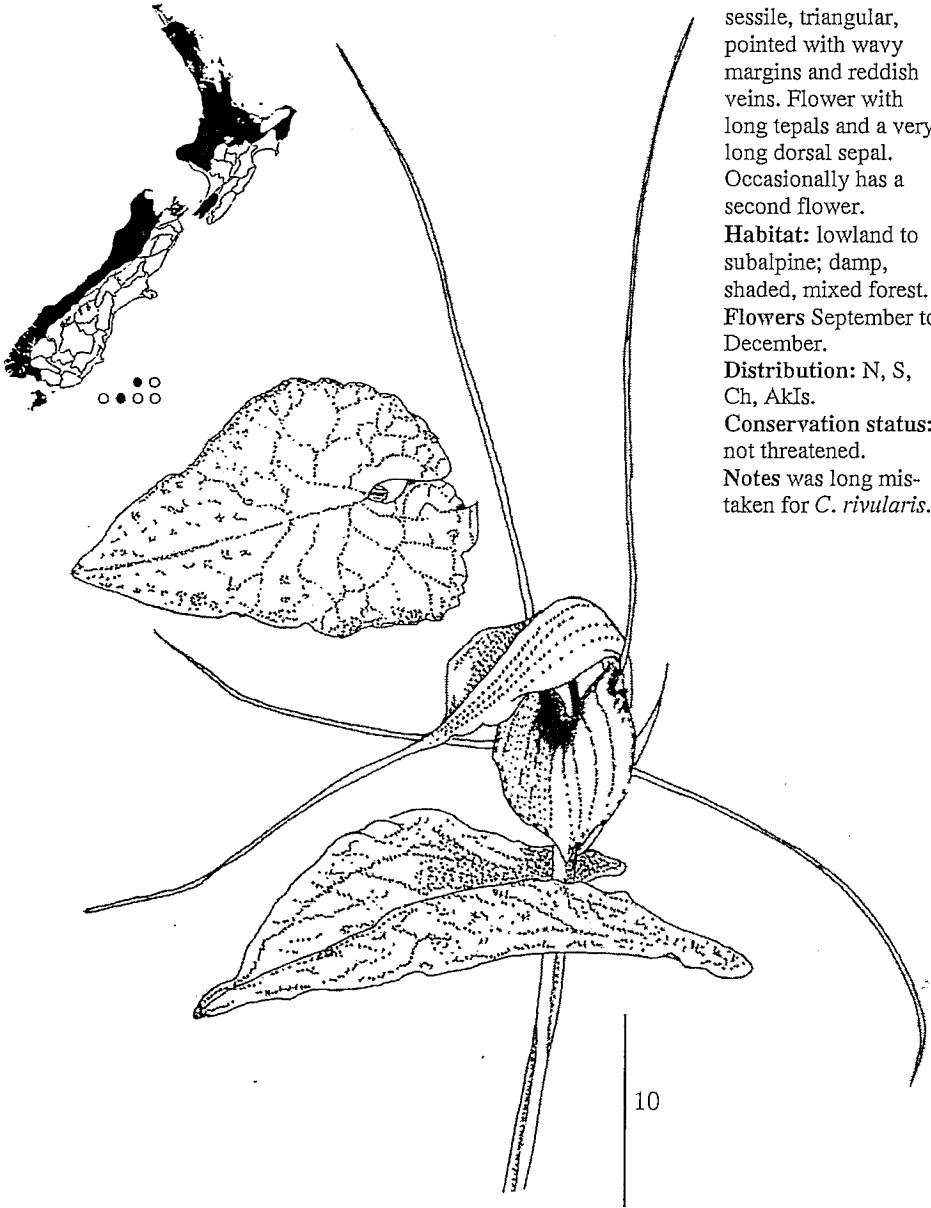
Habitat: in pine needle debris at Iwitahi and Hanmer; under beech near Nelson .

Flowers October to December. Distribution: N, S.

Conservation status: naturally uncommon, vagrant.

Notes: will not set seed in NZ (no natural pollinator), spreads vegetatively. Pattern of labellar calli may depend on clone.





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.

Distribution: N, S, Ch, AkIs.

Conservation status: not threatened.

Notes was long mistaken for *C. rivularis*.

Corybas carsei (Cheeseman) Hatch *TRSNZ* 75:367 (1945)

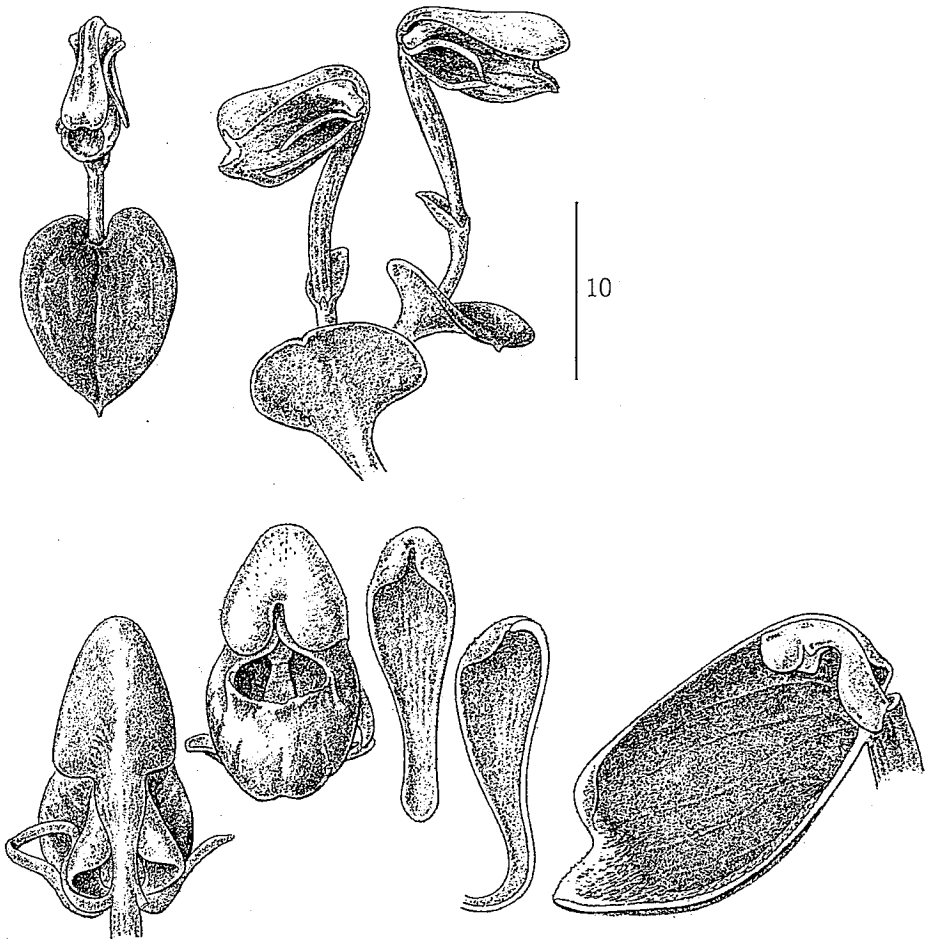
Characteristics: lateral sepals and petals shorter than labellum, tip of dorsal sepal deeply cleft, as long as labellum; labellar calli confined to swollen tissue close to apex and along raised midline.

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

Flowers August to November.

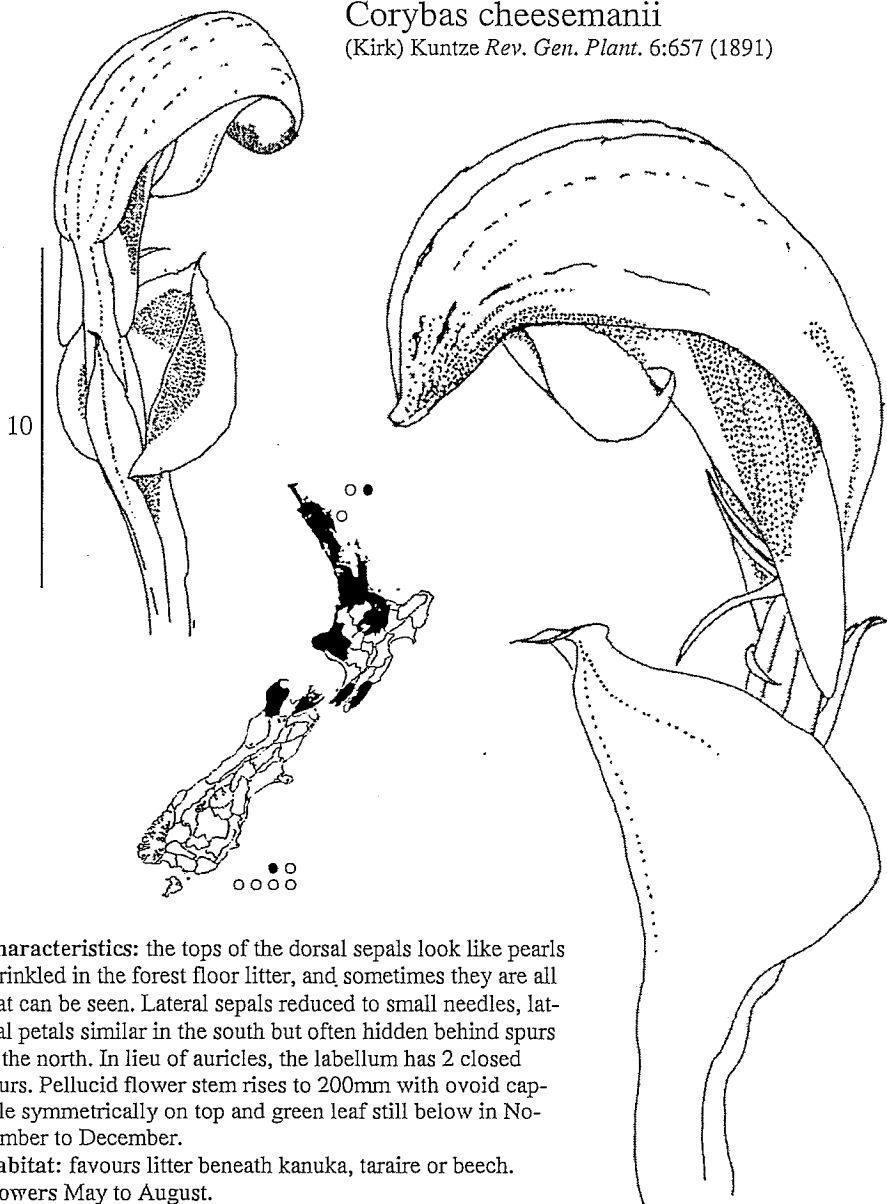
Distribution: N.

Conservation status: threatened, critically endangered. Its continued existence probably depends on occasional fires.



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. Lateral sepals reduced to small needles, lateral petals similar in the south but often hidden behind spurs in the north. In lieu of auricles, the labellum has 2 closed spurs. 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.

Flowers May to August.

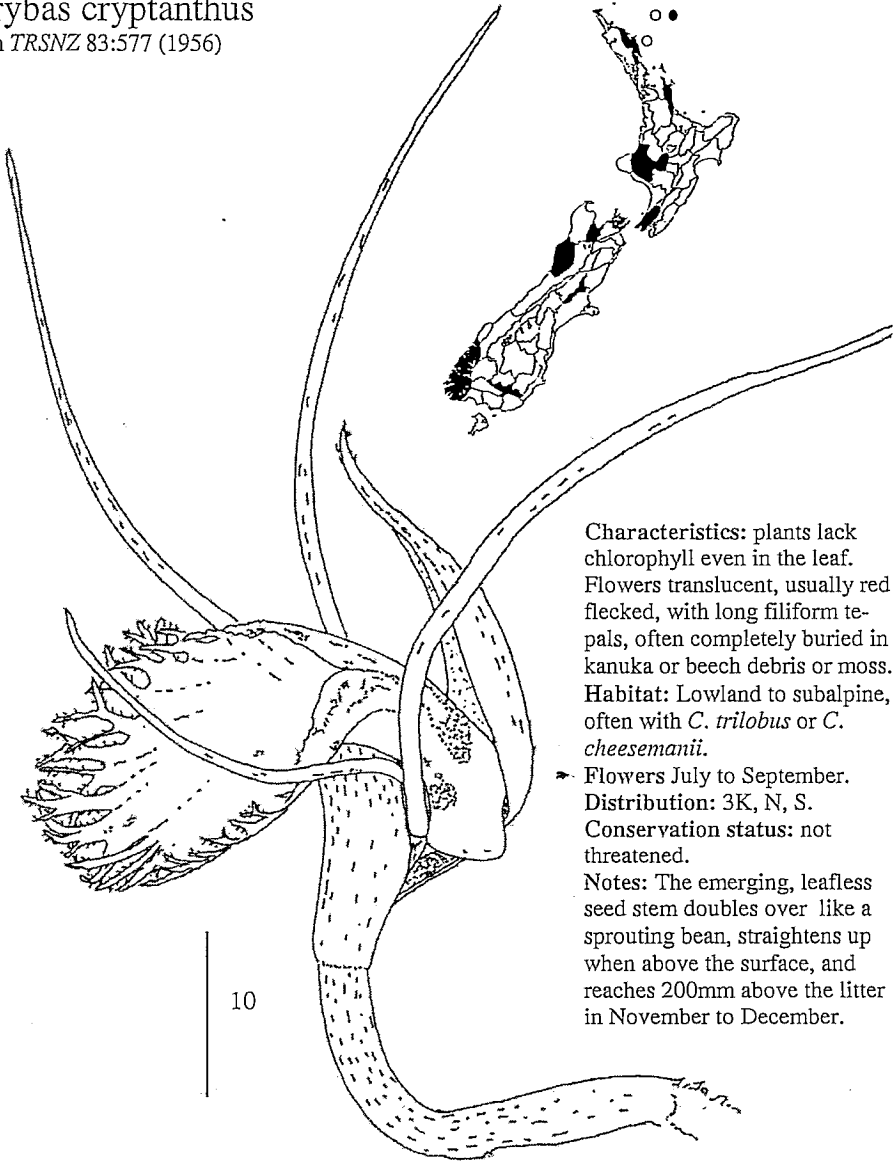
Distribution: 3K, N, S, Ch.

Conservation status: not threatened.

Note: largely fungus-dependent.

Corybas cryptanthus

Hatch TRSNZ 83:577 (1956)



Characteristics: plants lack chlorophyll even in the 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*.

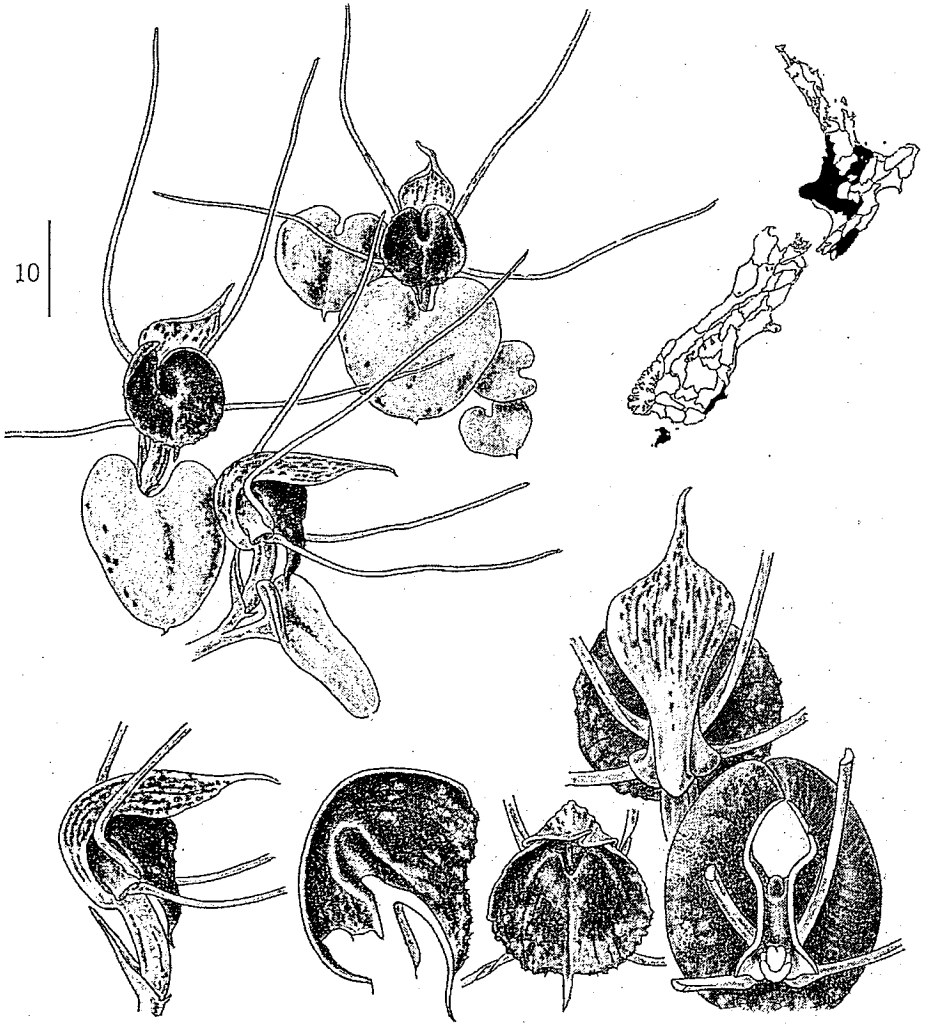
► **Flowers** July to September.

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.

Corybas iridescens Irwin & Molloy NZJB 34(1):1 (1996)



Characteristics: stalked round leaf, usually spotted with dull purple. Widely flaring labellum of darkest red, sharply deflexed as shown with a small gland visible in the "throat".

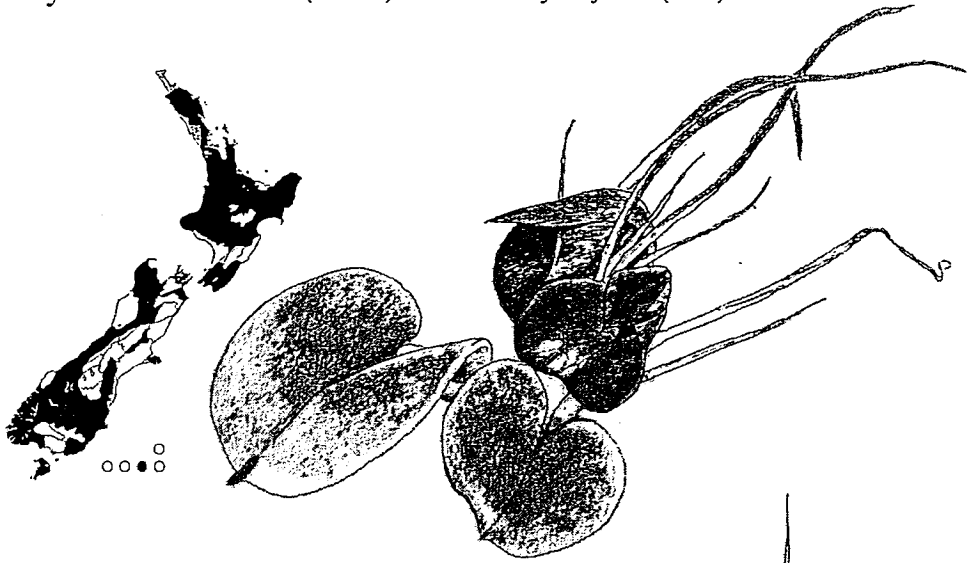
Habitat: This species is common in calcareous siltstone, mudstone and limestone country from Port Waikato to south Taranaki and the Ruahines; now extended to damp roadside seepages in calcareous mudstone (called "papa" by Maori).

Flowers August to October.

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

Notes: the plant from Otago is similar but may be distinct.

Corybas macranthus (Hook.f.) Rchb.f. *Beitr Syst. Pflk.* 67 (1871)



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.

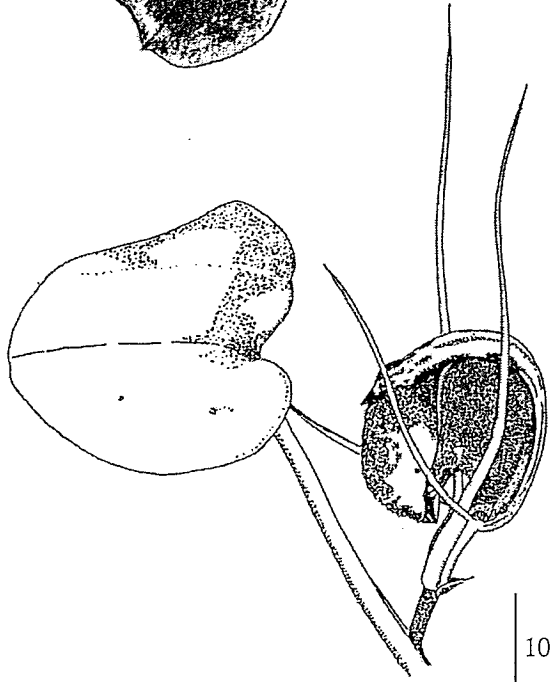
Habitat: Lowland to montane.

Flowers October to January.

Distribution: N, S, St, Ca.

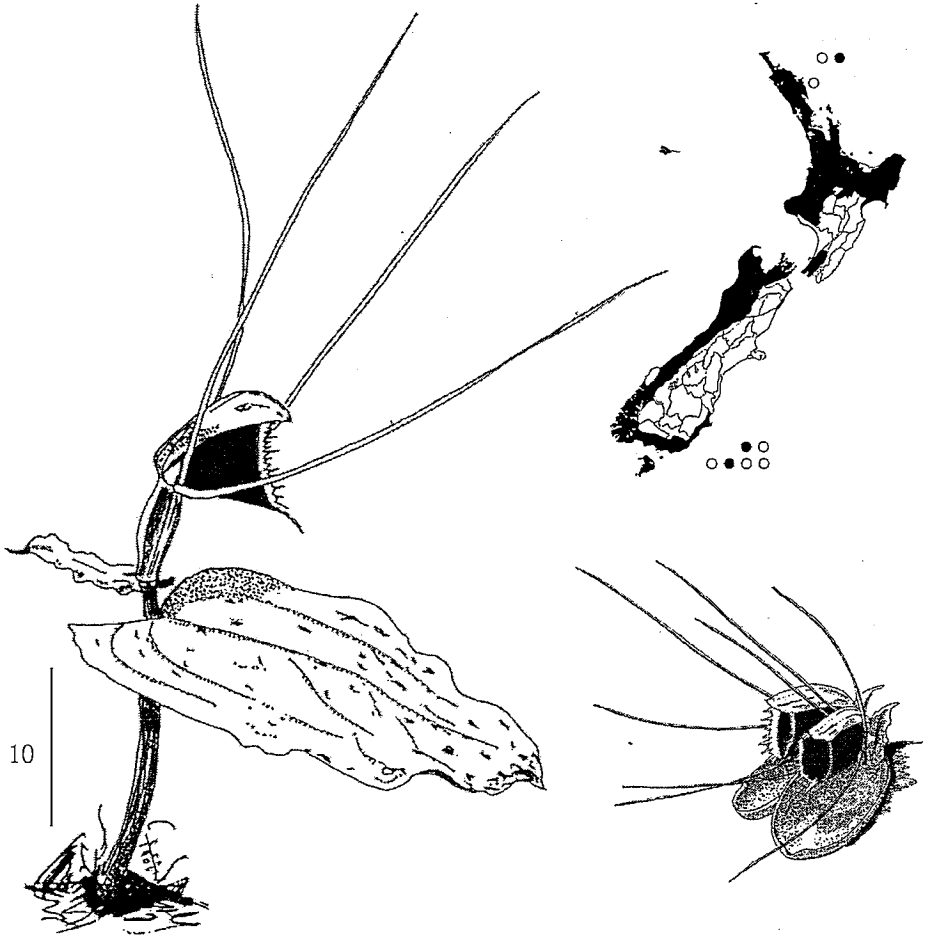
Conservation status: not threatened.

Notes: a species with different colour forms. There appear to be hybrids with members of the *C. trilobus* agg.



10

Corybas oblongus (Hook.f.) Rchb.f. *Beitr. Syst. Pflk.* 67 (1871)



Characteristics: easily distinguished by the pale, fimbriate edge to the dark crimson labellum and the thin, undulate to smooth edged leaf, varying from green to redveined to red. Big specimens may have a second or third flower.

Habitat: favours clay banks and sandstone or limestone bluffs usually in moderate shade.

Flowers September to November.

Distribution: 3K, N, S, St, Ch, Ant.

Conservation status: not threatened.

Notes: two forms may exist but their status is far from clear.

Corybas orbiculatus (Colenso) L.B.Moore *Flora NZ* II:118 (1970)

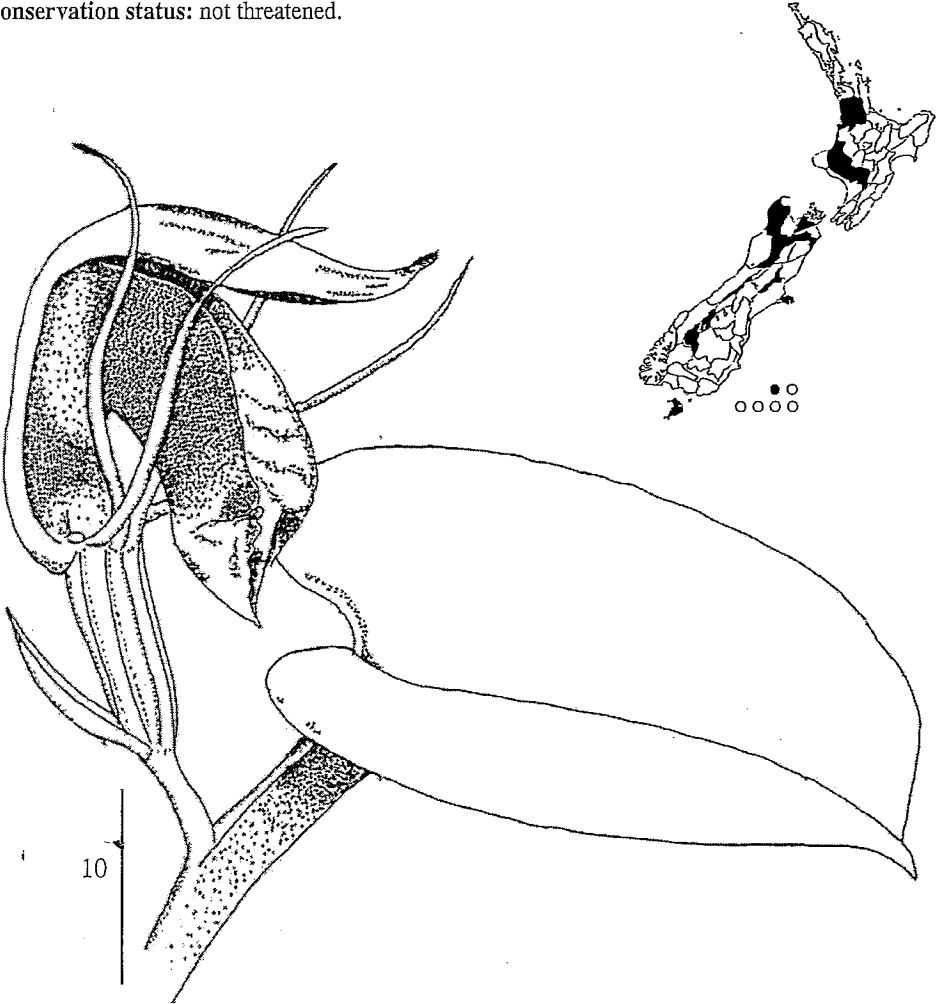
Characteristics: similar to *C. rivularis*, but edges of the dark crimson labellum inrolled to give a sharp, pendant troughlike appearance, sepals and petals very short – about as long as the dorsal.

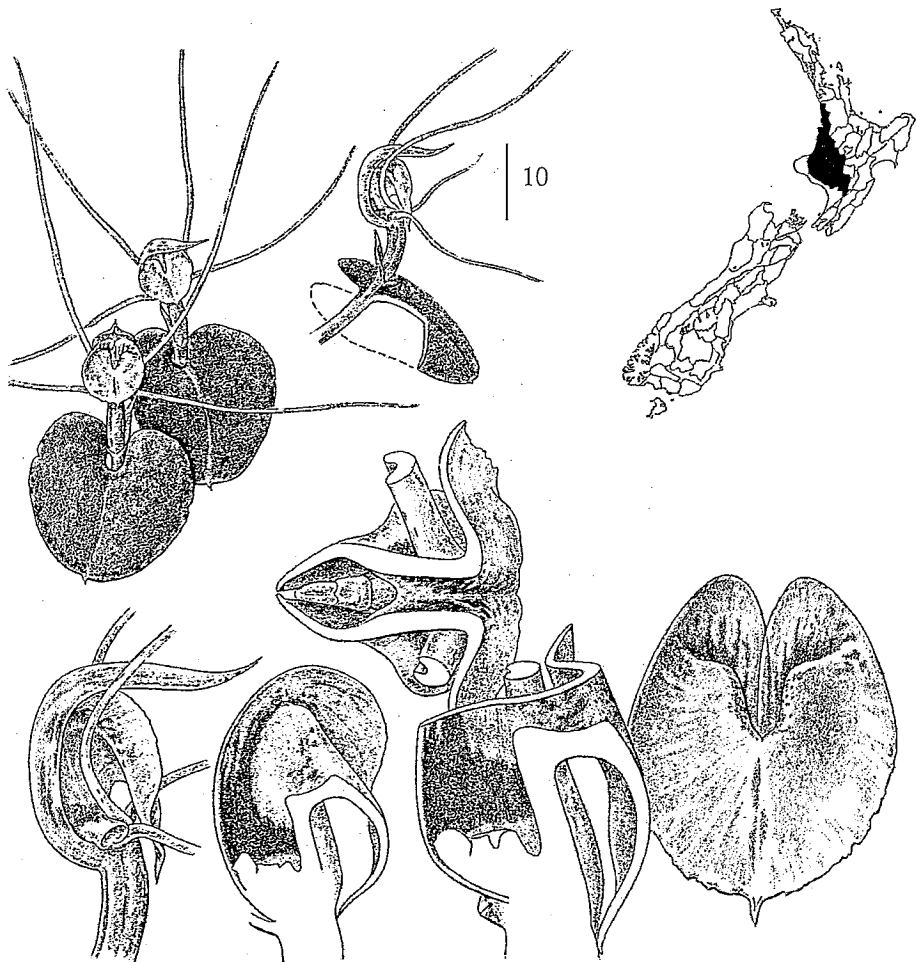
Habitat: permanently wet, mossy road banks; common in calcareous siltstone, mudstone and limestone country from Port Waikato to south Taranaki and the Ruahines.

Flowers August–October.

Distribution: N, S, St, Ch.

Conservation status: not threatened.



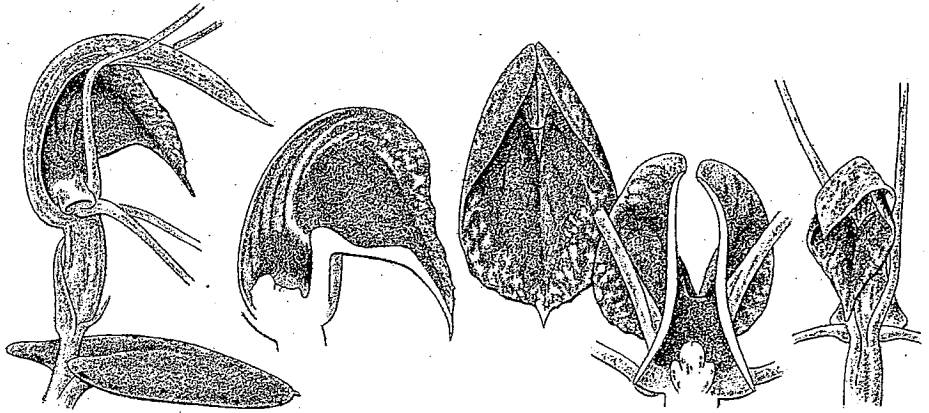
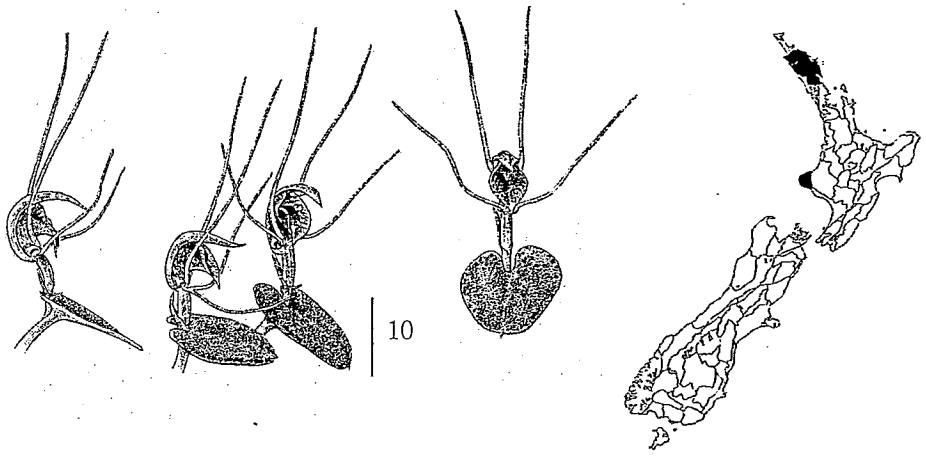


Corybas papa Molloy & Irwin *NZJB* 34(1):5 (1996)

Characteristics: leaf strictly sessile, flower green with blackish crimson at back of labellum. Flower compressed fore and aft compared with *C.* “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.

Flowers August to September. Distribution: N. Conservation status: not threatened.



Corybas rivularis (A.Cunn.) Rchb.f. *Beitr Syst. Pflk.* 67 (1871)

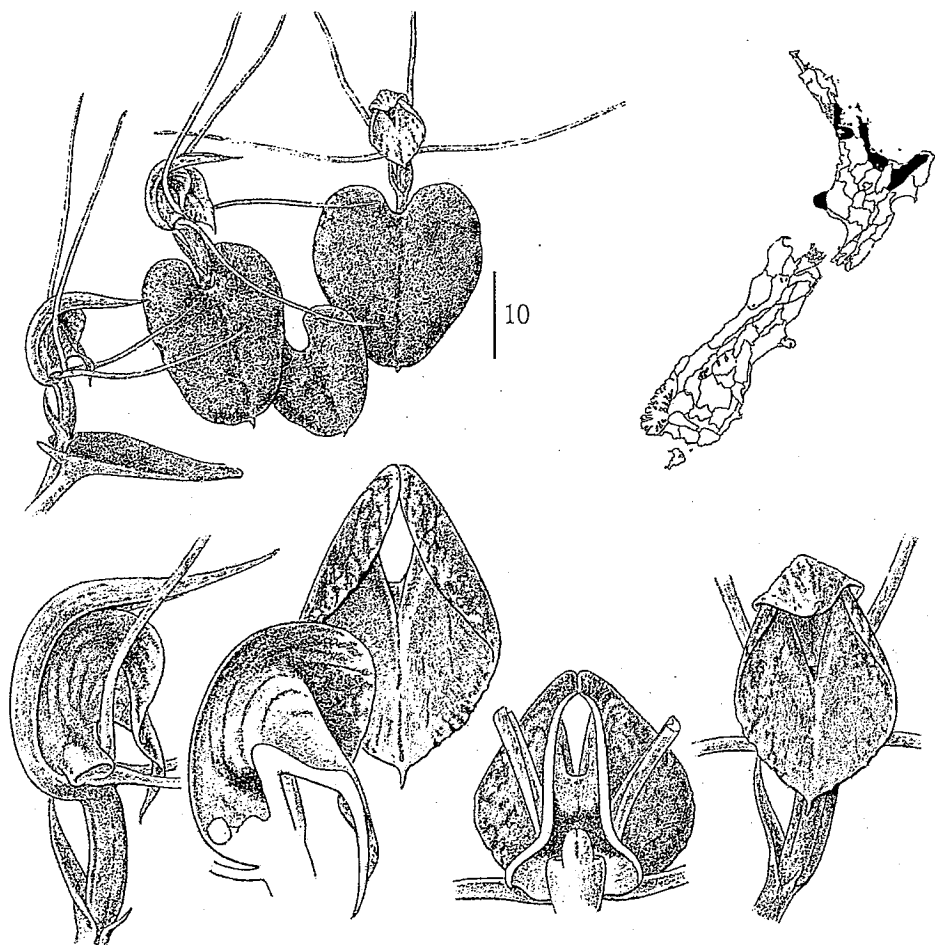
Characteristics: blackish crimson labellum and flecks on greenish dorsal sepal. In the labellum keel the outer flexure is almost straight on young flowers but drops down a little in maturity, holding the apiculus well clear of the ovary.

Habitat: wet, mossy, shady stream banks.

Flowers October to November.

Distribution: N.

Conservation status: naturally uncommon, sparse.



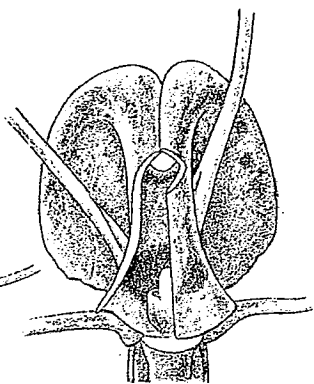
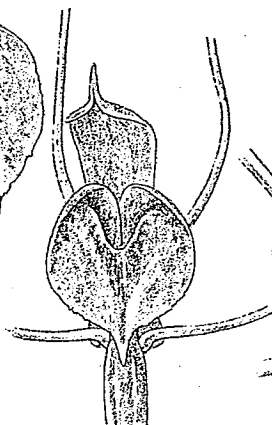
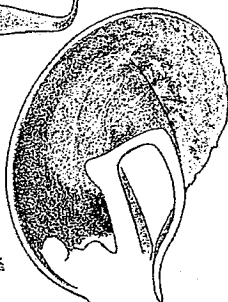
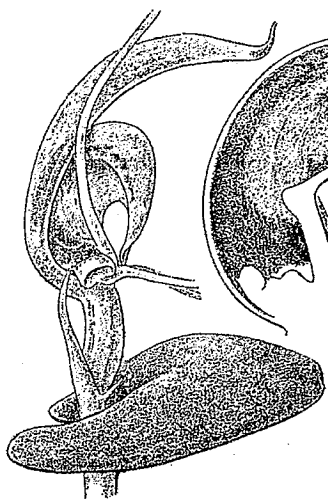
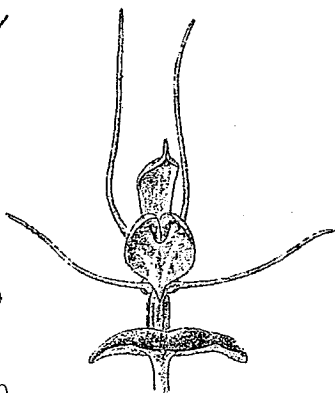
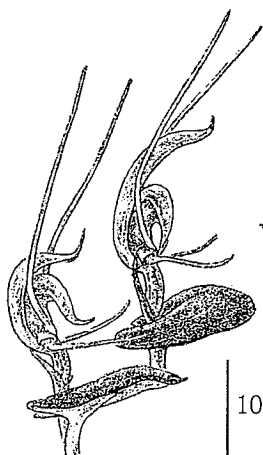
Corybas "Kaimai"
 (*Corybas rivularis* agg.)

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.

Flowers September to October.

Distribution: N.



Corybas "rest area"
(*Corybas rivularis* agg.)

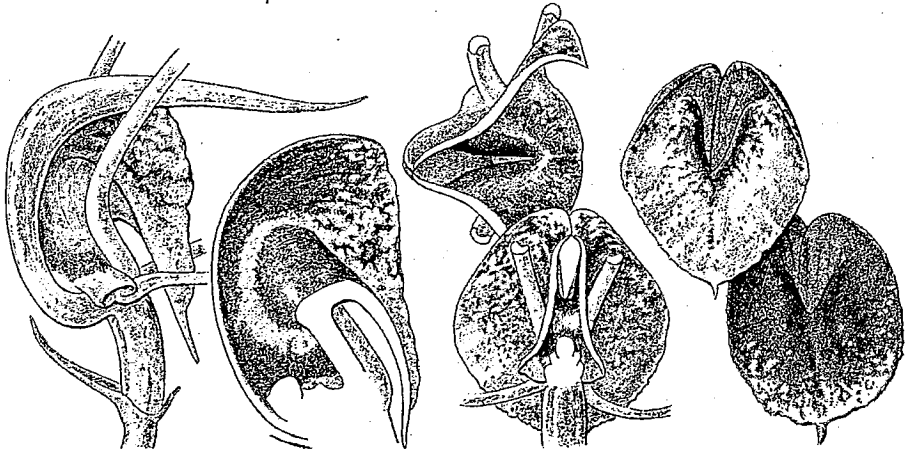
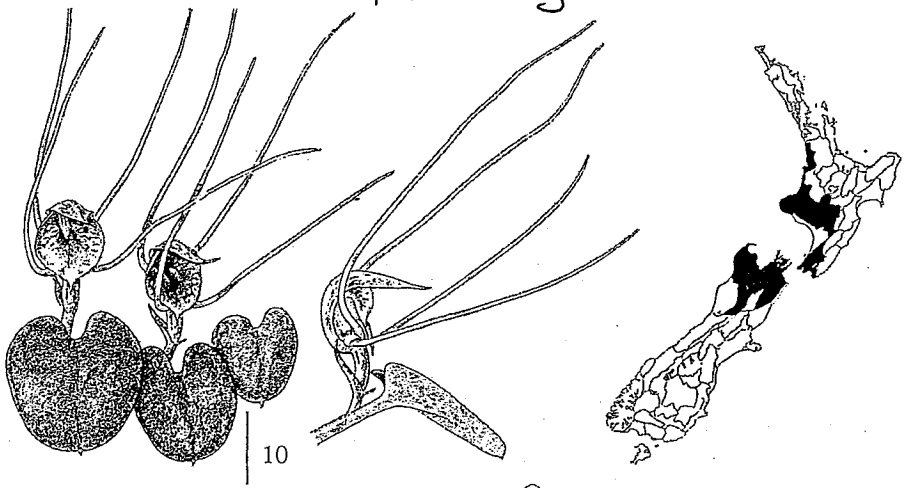
Characteristics: similar to *C. papa* but the leaf is shortly but obscurely petiolate, the labellum has a tapered apex which barely reaches down to the auricle level, and the dorsal sepal usually arches upward clear of the labellum.

Habitat: wetlands, barely above flowing water.

Flowers October to November.

Distribution: N.

New *Corybas hatchii*

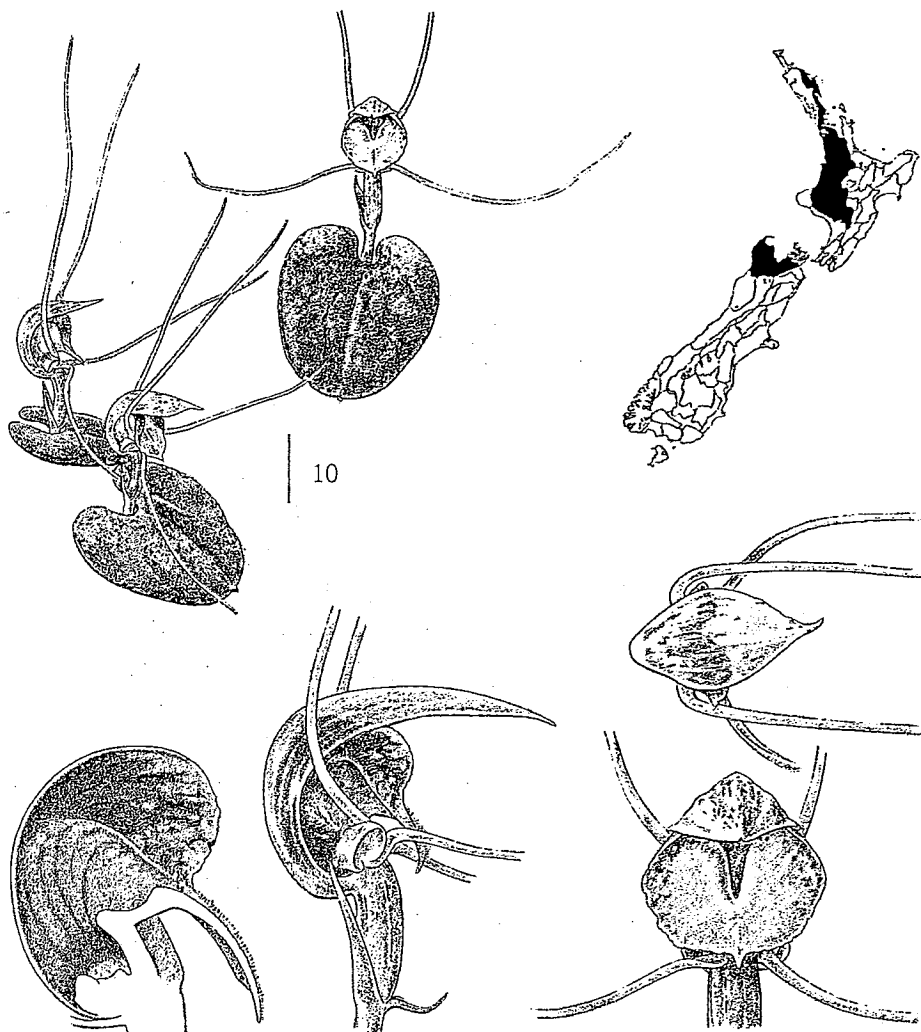


Corybas macranthus var. *longipetalus* Hatch in *TRSNZ* 76: 580 (1947)
(*Corybas rivularis* agg.) *Corybas* "Waiouru"

Characteristics: leaf shortly stalked as in *C. iridescens*. Flower green with dark crimson at the back, similar to that of *C. papa* except the filiform tepals lean forward essentially in parallel array. Some plants remote from Waiouru display more crimson on the "bib" of the labellum, and the petals may turn further to each side; their status has yet to be determined.

Habitat: wet mossy rocks. Flowers July to October. **Distribution:** N.

Notes: placed by Hatch as a variety of *C. macranthus*, but since recognised as part of the *C. rivularis* agg. (and tagged *C. "Waiouru"*). Other apparently separate taxa in sites from Kaitarakih Reserve on Manukau Harbour to sphagnum in Rangataua wetlands south of Ruapehu show affinities with both *C. iridescens* and *C. "Waiouru"*, but at present their status is far from clear.



Corybas "whiskers"
(*Corybas rivularis* agg.)

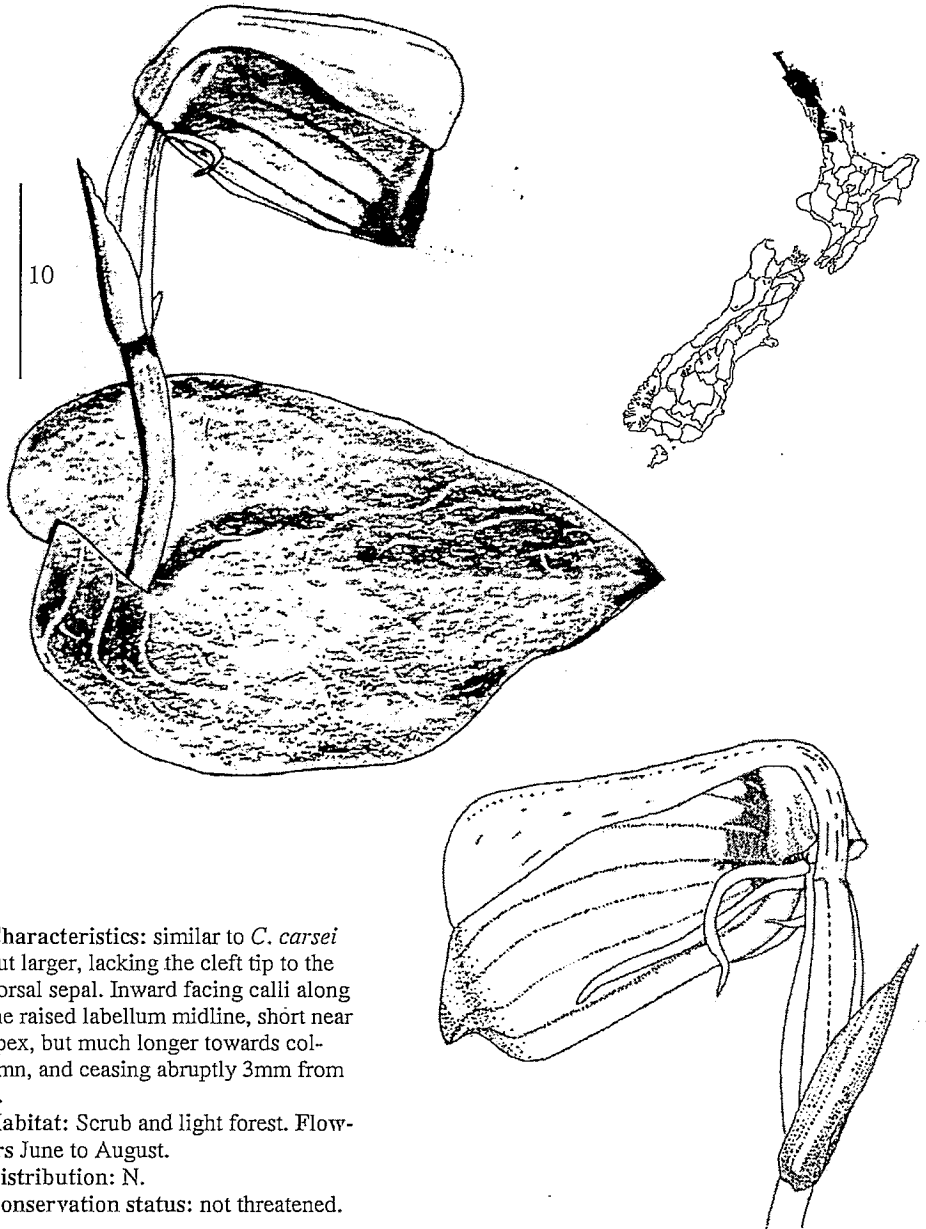
Characteristics: colours mimic *C. papa* but the perfumed flower is much deeper front to rear, and the labellum is covered with minute pale hairs obscuring the pattern of veins.

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

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

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 rotundifolius (Hook.f.) Rehb.f. *Beitr. Syst. Pflk.* 67 (1871)



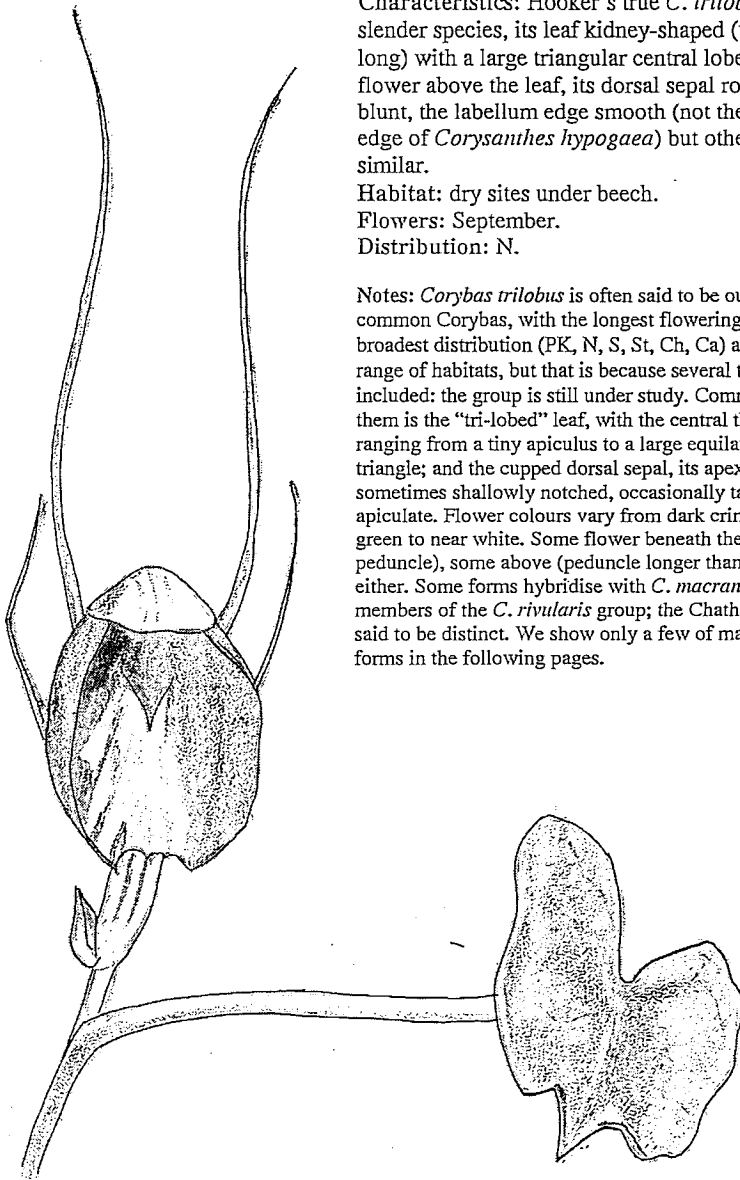
Characteristics: similar to *C. carsei* but larger, lacking the cleft tip to the dorsal sepal. Inward facing calli along the raised labellum midline, short near apex, but much longer towards column, and ceasing abruptly 3mm from it.

Habitat: Scrub and light forest. Flowers June to August.

Distribution: N.

Conservation status: not threatened.

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



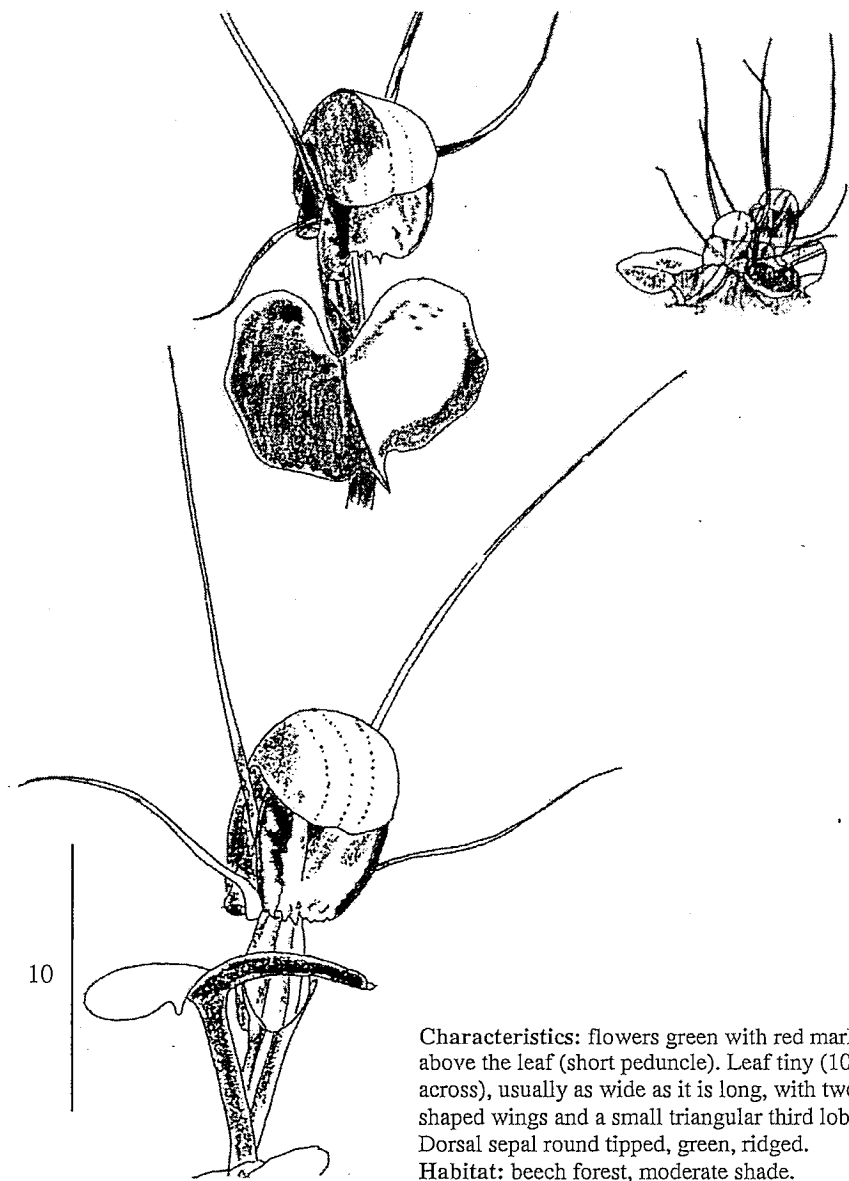
Characteristics: Hooker's true *C. trilobus* is a slender species, its leaf kidney-shaped (wider than long) with a large triangular central lobe, the flower above the leaf, its dorsal sepal rounded, blunt, the labellum edge smooth (not the jagged edge of *Corysanthes hypogaea*) but otherwise similar.

Habitat: dry sites under beech.

Flowers: September.

Distribution: N.

Notes: *Corybas trilobus* is often said to be our most common *Corybas*, with the longest flowering season, broadest distribution (PK, N, S, St, Ch, Ca) and widest range of habitats, but that is because several taxa are included: the group is still under study. Common to all 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 flower beneath the leaf (short peduncle), some above (peduncle longer than petiole) or either. Some forms hybridise with *C. macranthus* and members of the *C. rivularis* group; the Chatham form is said to be distinct. We show only a few of many different forms in the following pages.



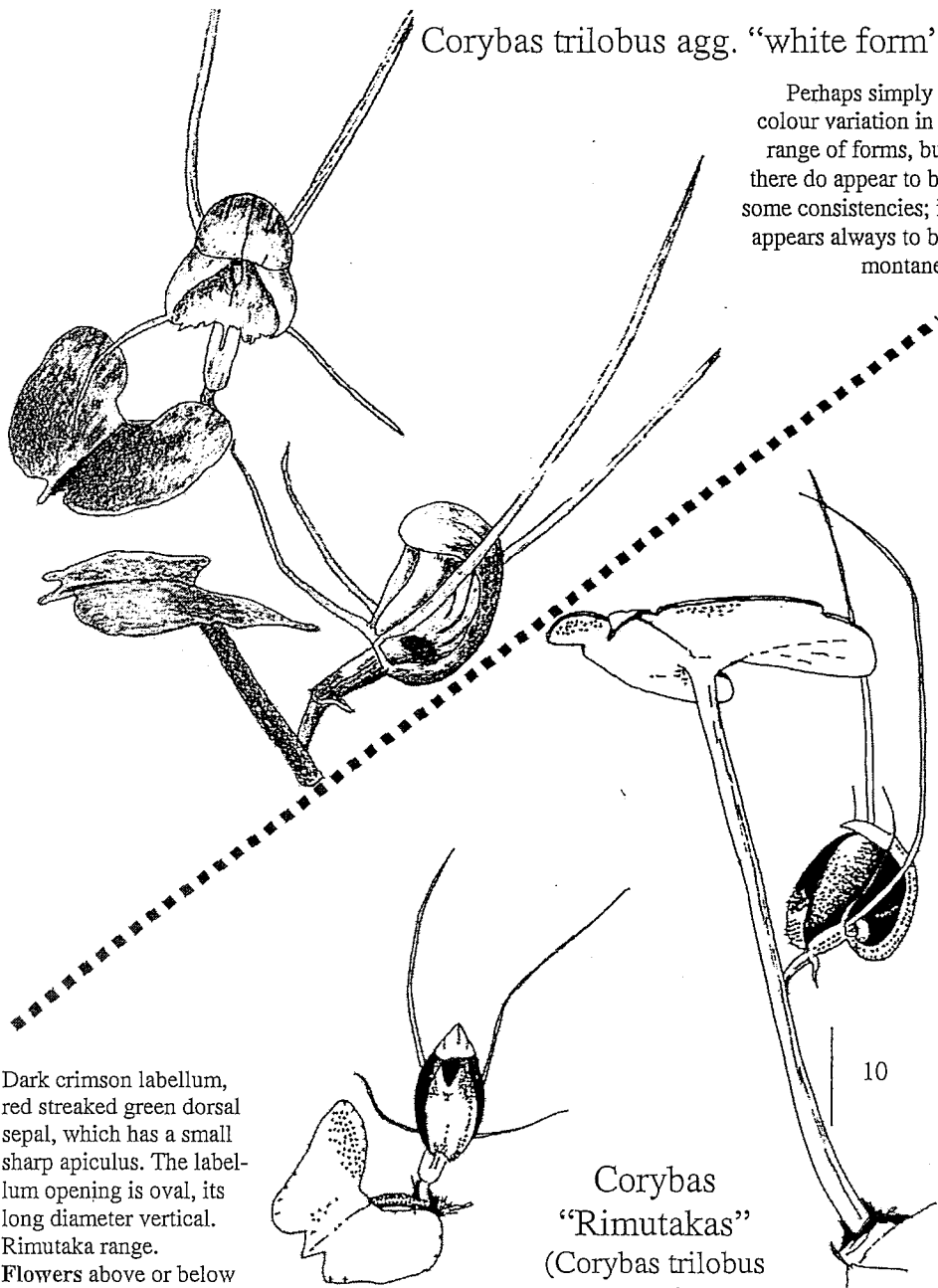
Corybas aff. *trilobus*

Characteristics: flowers green with red markings, above the leaf (short peduncle). Leaf tiny (10mm across), usually as wide as it is long, with two ear-shaped wings and a small triangular third lobe. Dorsal sepal round tipped, green, ridged. Habitat: beech forest, moderate shade. Flowers in July in Otago.

Notes: leaves of flowering plants appear in July, and are followed, after flowering, by many more sterile leaves, suggesting vegetative spread.

Corybas trilobus agg. "white form"

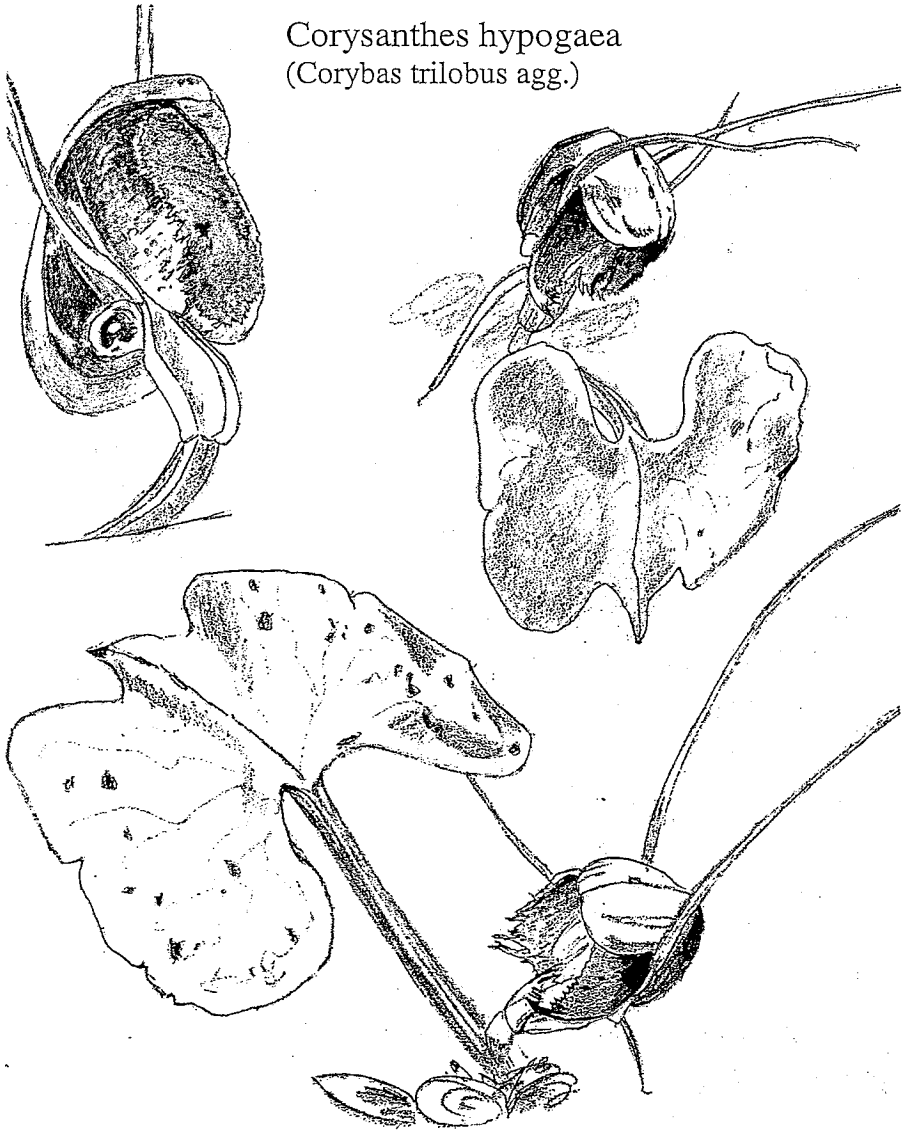
Perhaps simply a colour variation in a range of forms, but there do appear to be some consistencies; it appears always to be montane.



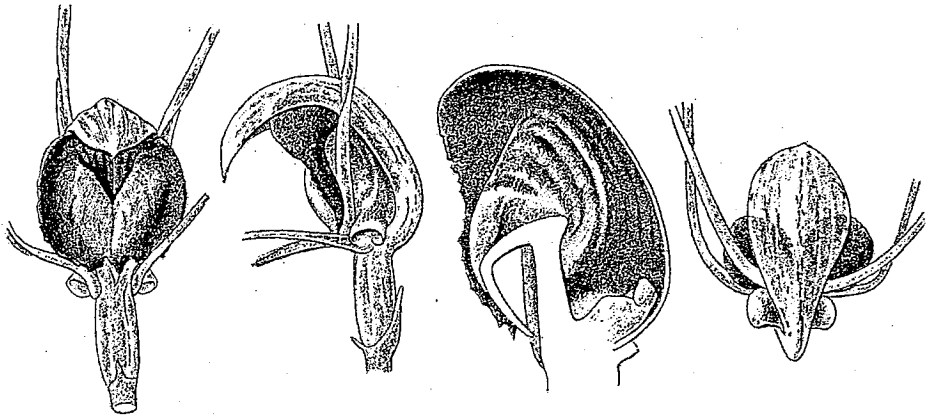
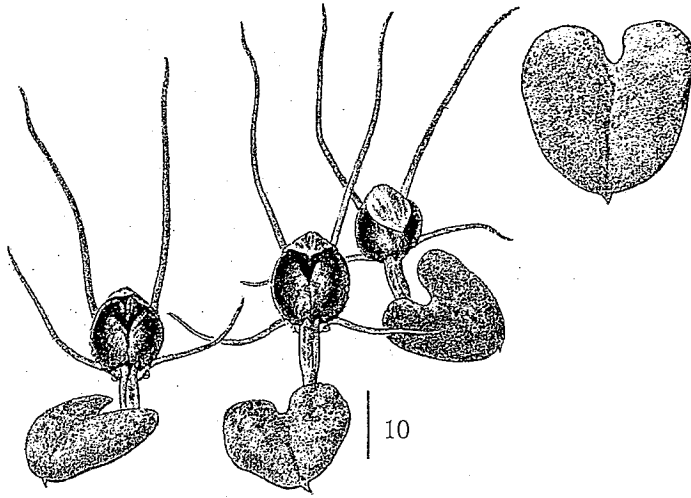
Dark crimson labellum, red streaked green dorsal sepal, which has a small sharp apiculus. The labellum opening is oval, its long diameter vertical. Rimutaka range. Flowers above or below leaf, in October.

Corybas
"Rimutakas"
(*Corybas trilobus* agg.)

Corysanthes hypogaea
(*Corybas trilobus* agg.)



Characteristics: leaves kidney shaped, much wider than long, purple-tinged silver beneath. Flowers tiny, on short, threadlike stems, often hidden in the moss or below the beech leaf litter, with jagged and incurved edges to the labella. **Habitat:** around the bases of beech trees. **Flowers** August and September. **Distribution:** N (Waikato, Wairarapa). **Notes:** very similar to *C. trilobus* s.s. but the ragged edge of the labellum seems to distinguish it.



Corybas "round leaf"
 (Corybas trilobus agg.)

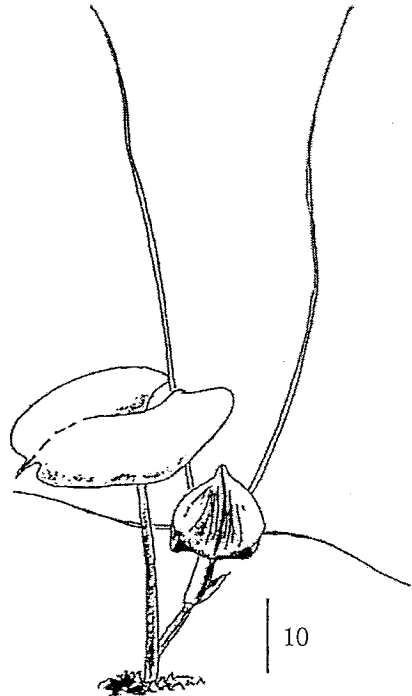
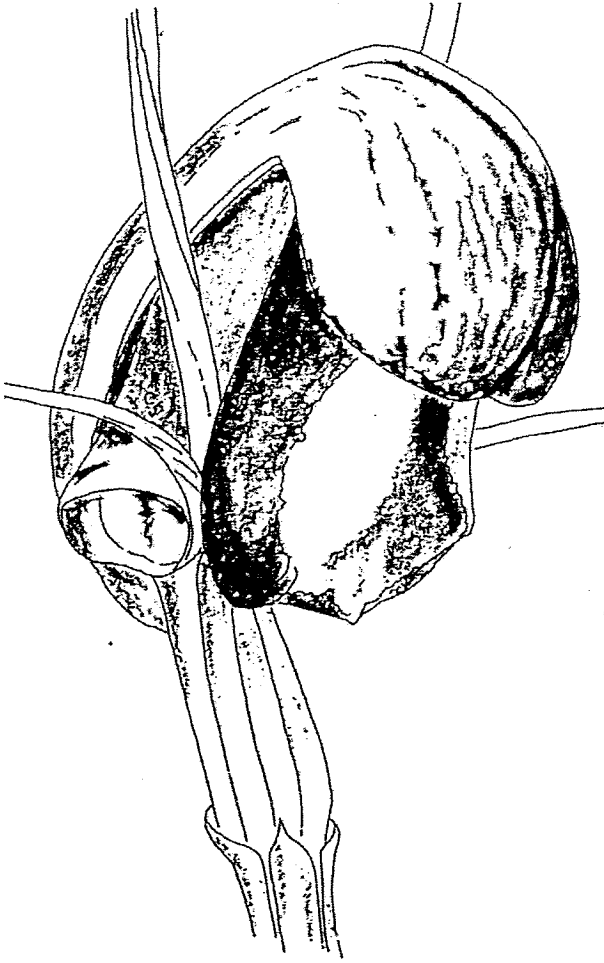
Characteristics: flowers above the shortly petiolate round leaf which resembles that of *C. macranthus*. The dark crimson labellum has the trilobus fringed notch but the more pointed dorsal sepal projects beyond the labellum. Flowers do vary from colony to colony however.

Habitat: deep mossy overhangs near Kawhia; and on Ruapehu, under scrub cover, beside permanent cataracts giving protection against frost.

Flowers October to November.

Distribution: N.

Corybas "Trotters"
(*Corybas trilobus* agg.)



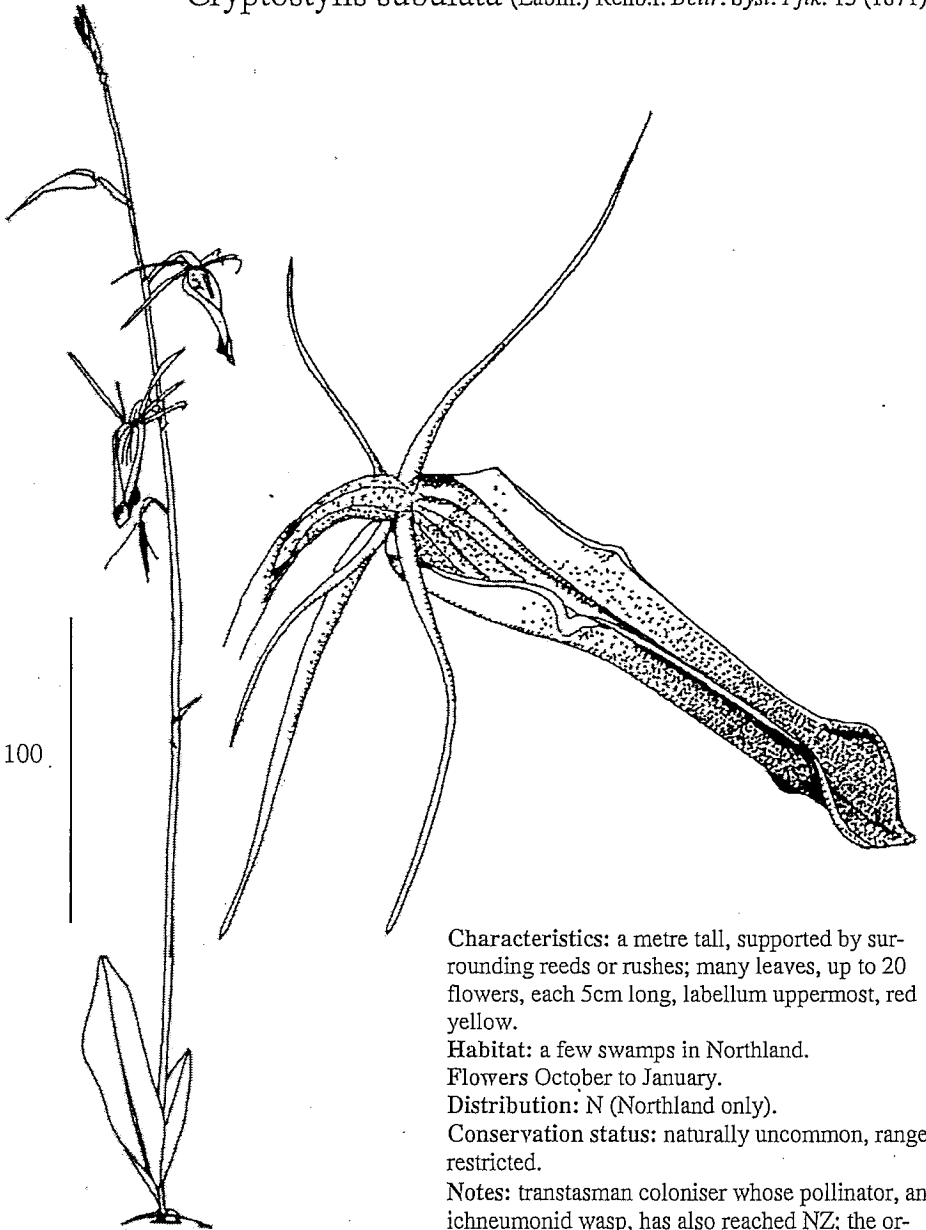
Characteristics: this is a dark, late flowering form. The flower may be almost black, large (up to 15mm across), always below the leaf, its vertical lateral sepals very much longer than the horizontal to drooping petals, showing well above the leaf layer. Leaves may be large and veined (up to 45mm across), as long as they are wide.

Habitat: streamsides, in damp ground and moderate shade.

Flowers October to November.

Distribution: N, S.

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



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

Habitat: a few swamps in Northland.

Flowers October to January.

Distribution: N (Northland only).

Conservation status: naturally uncommon, range restricted.

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

Characteristics: these two species are structurally similar except for the shape of the leaves, oblong at left below or (more or less) kidney-shaped at right below. Leaf sessile, low on the stem, flower colourless to dull pink to maroon with flat, oblong, glistening conspicuous labelum bearing nectar droplets and two conspicuous basal calli.

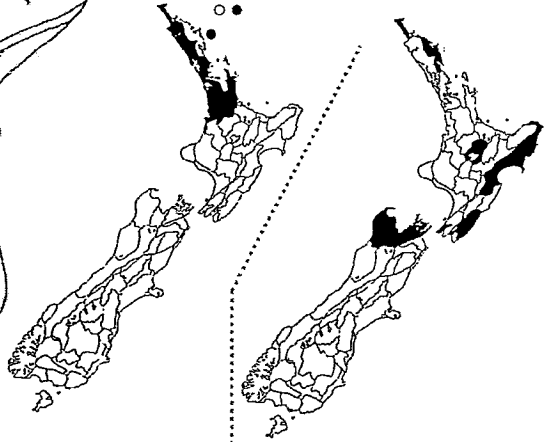
Habitat: scrub and light forest, or in the open. Flowers September to October.

Distribution: *C. reniformis* N, S; *C. oblongus* 3K, PK, N.

Conservation status: neither is threatened.



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



Cyrtostylis reniformis

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



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

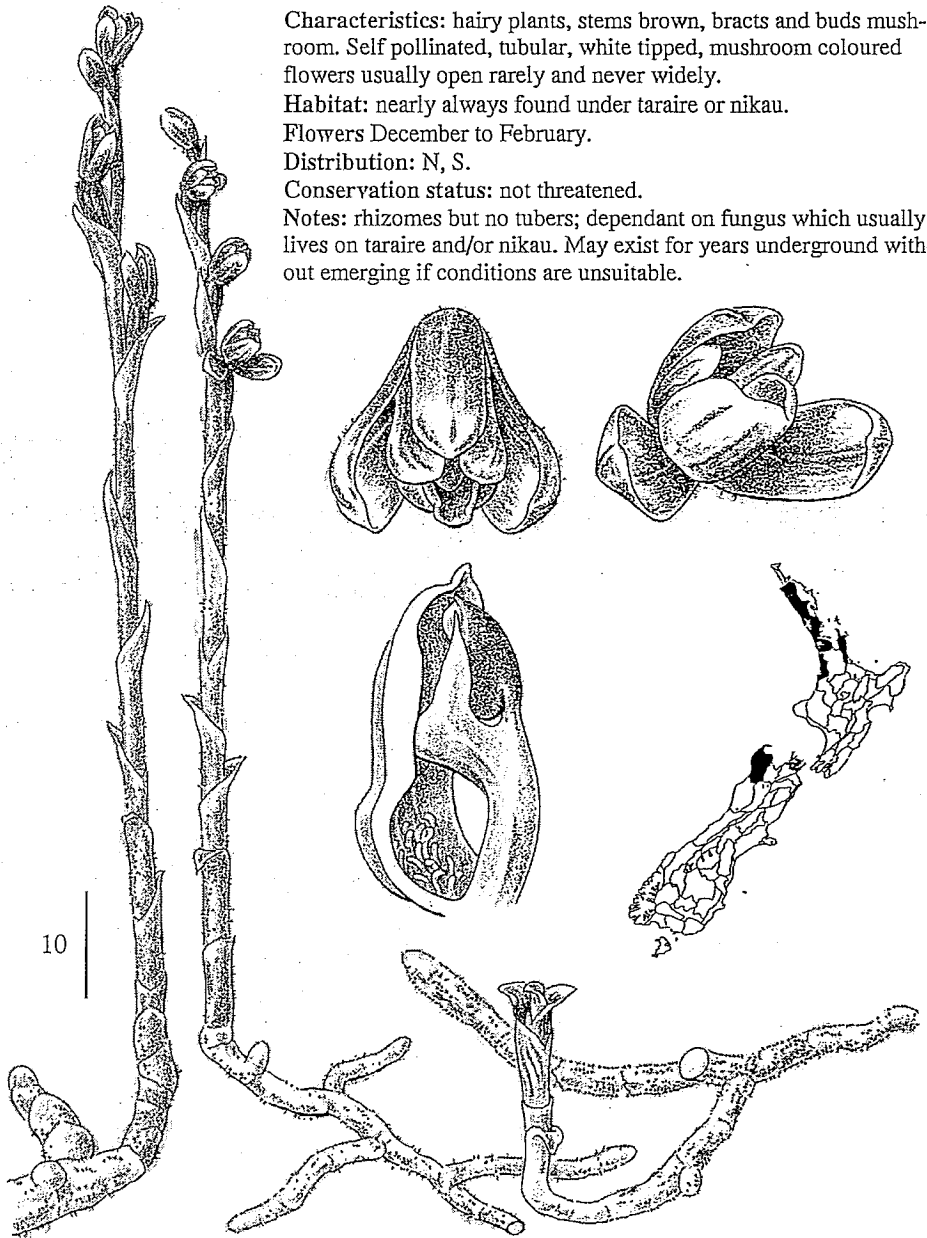
Habitat: nearly always found under taraire or nikau.

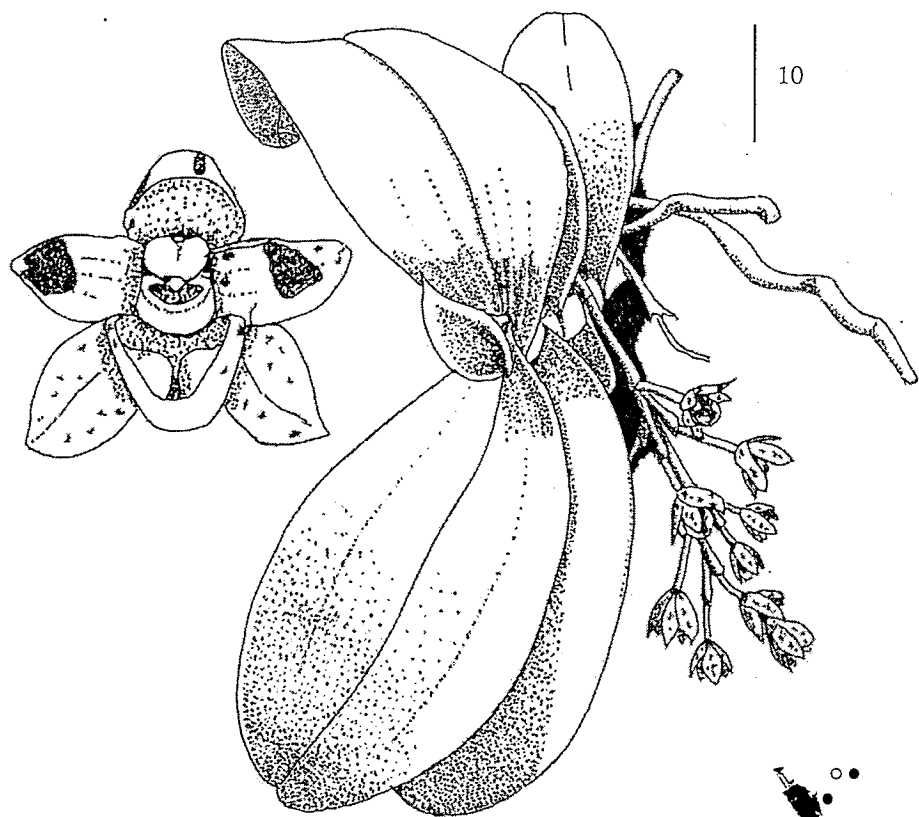
Flowers December to February.

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 as shown.

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 *NZJB* 32:416 fl (1994)

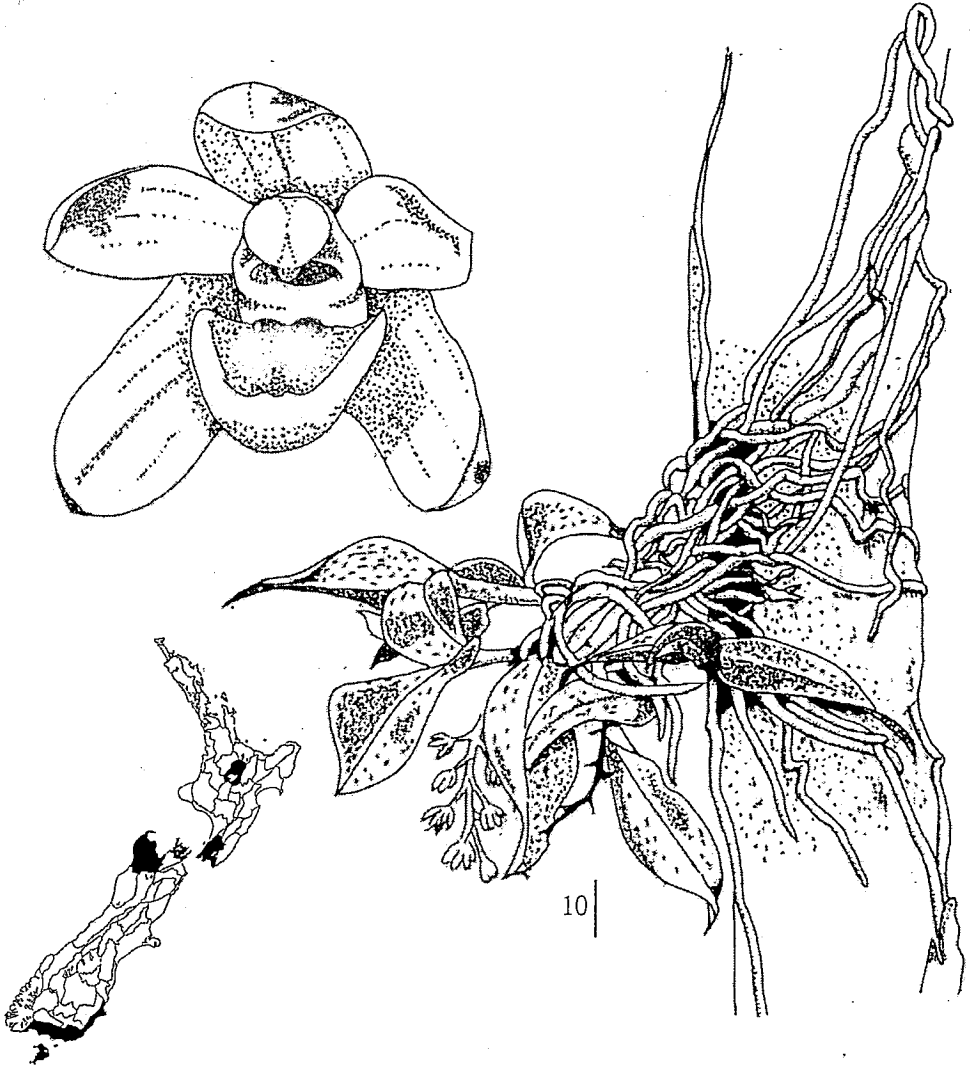
Characteristics: spotted dull leathery leaves, yellow green flowers, the labellum lacking the upright flattened calli (of *D. adversus*) within.

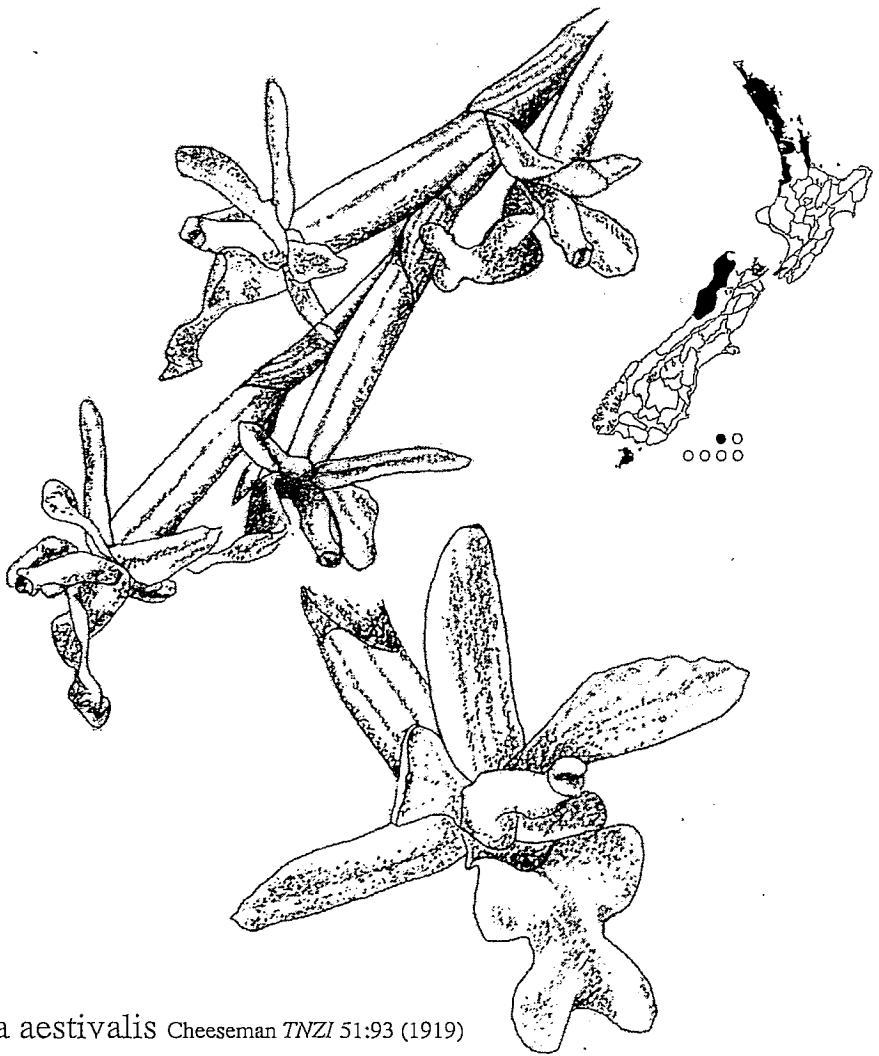
Habitat: on a range of host trees, notably totara, often near the coast.

Flowers October to December.

Distribution: N, S, St.

Conservation status: naturally uncommon, sparse.





Earina aestivalis Cheeseman TNZI 51:93 (1919)

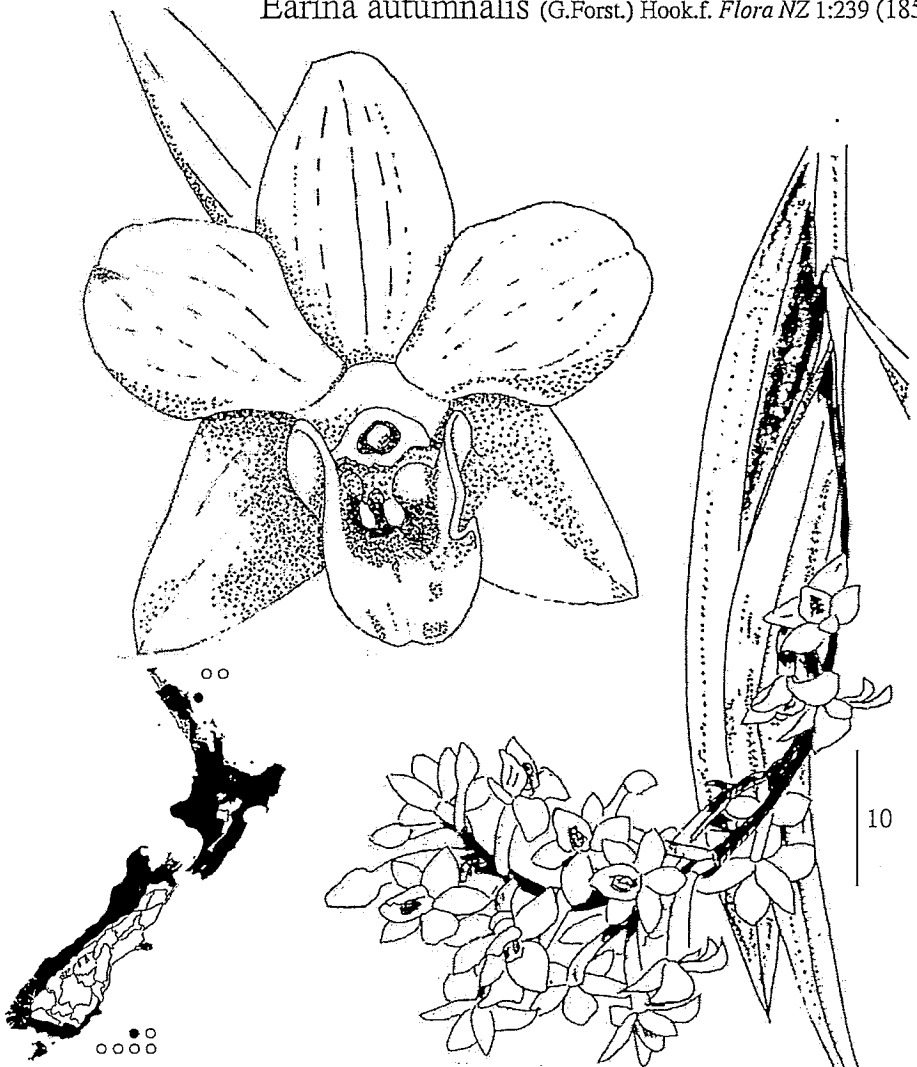
Characteristics: compared to *E. mucronata*, *E. aestivalis* has a more open growth habit (sparse pieces on the host tree, rather than the dense clumps of *E. mucronata*), the leaves are much broader, deeply channelled, with prominent midribs and lateral veins. The flowers are up to 9mm across, often larger but much the same colours as *E. mucronata*. Column may be longer, but this is not consistent. Flat opening lateral petals, sepals deflected back. Lemon leaf perfume.

Habitat: mainly coastal, preferring trees exposed to salt winds.

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

Conservation status: not threatened.

Earina autumnalis (G.Forst.) Hook.f. *Flora NZ* 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 white, 5mm flowers with broad oval petals and sepals, and a broad yellow-based labellum. Flowers on last year's spike.

Habitat: thrives in deep shade, sometimes on rocks or hard clay banks.

Flowers February to July. **Distribution:** PK, N, S, St, Ch.

Conservation status: not threatened.

Earina mucronata Lindl. *Bot. Reg.* sub t1699 (1834)



Characteristics: grassy narrow leaves, lacking a midrib cleft, veins inconspicuous (compared with *E. aestivalis*) on long drooping stems, forming dense clumps on well lit branches and trunks. Clusters of creamy (sometimes white) 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.

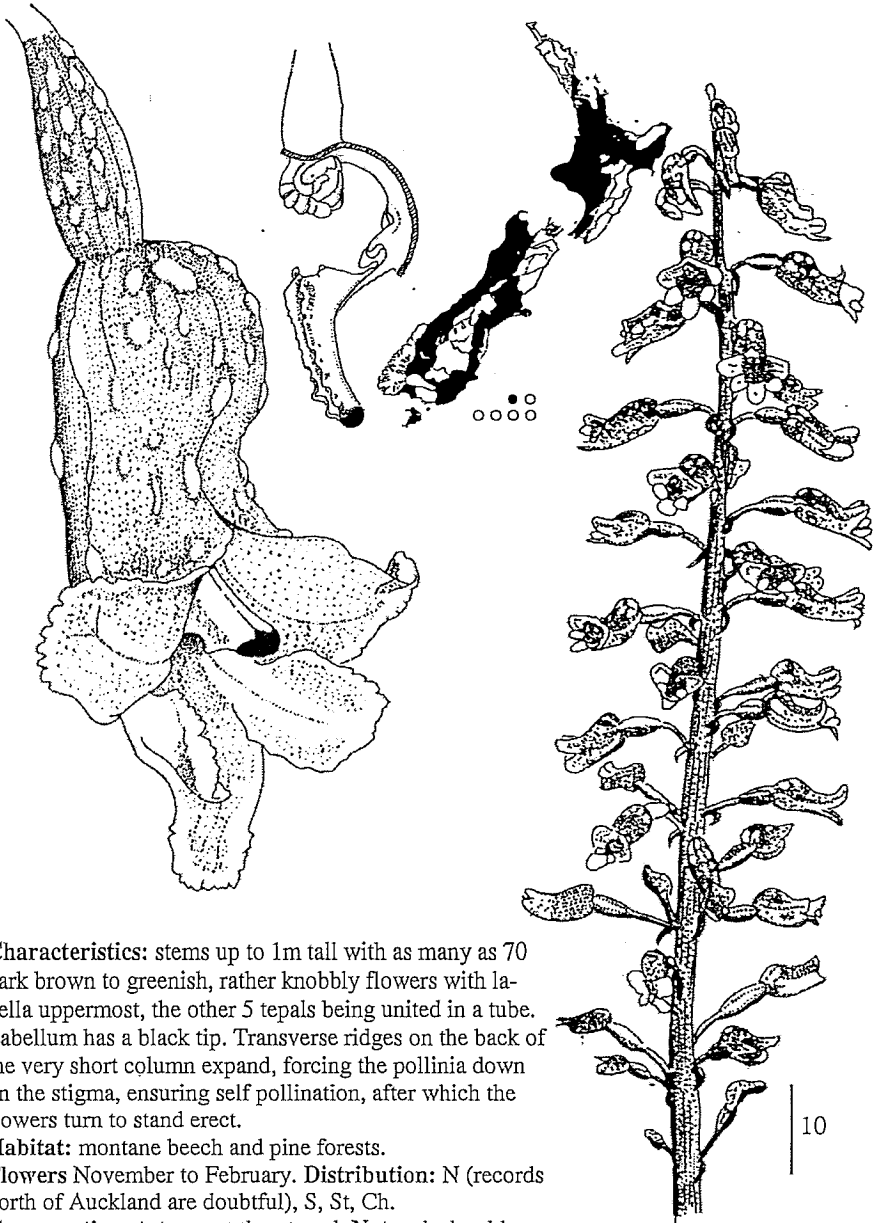
Habitat: matted roots on trees, tree ferns and rock walls.

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

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

Conservation status: not threatened.

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



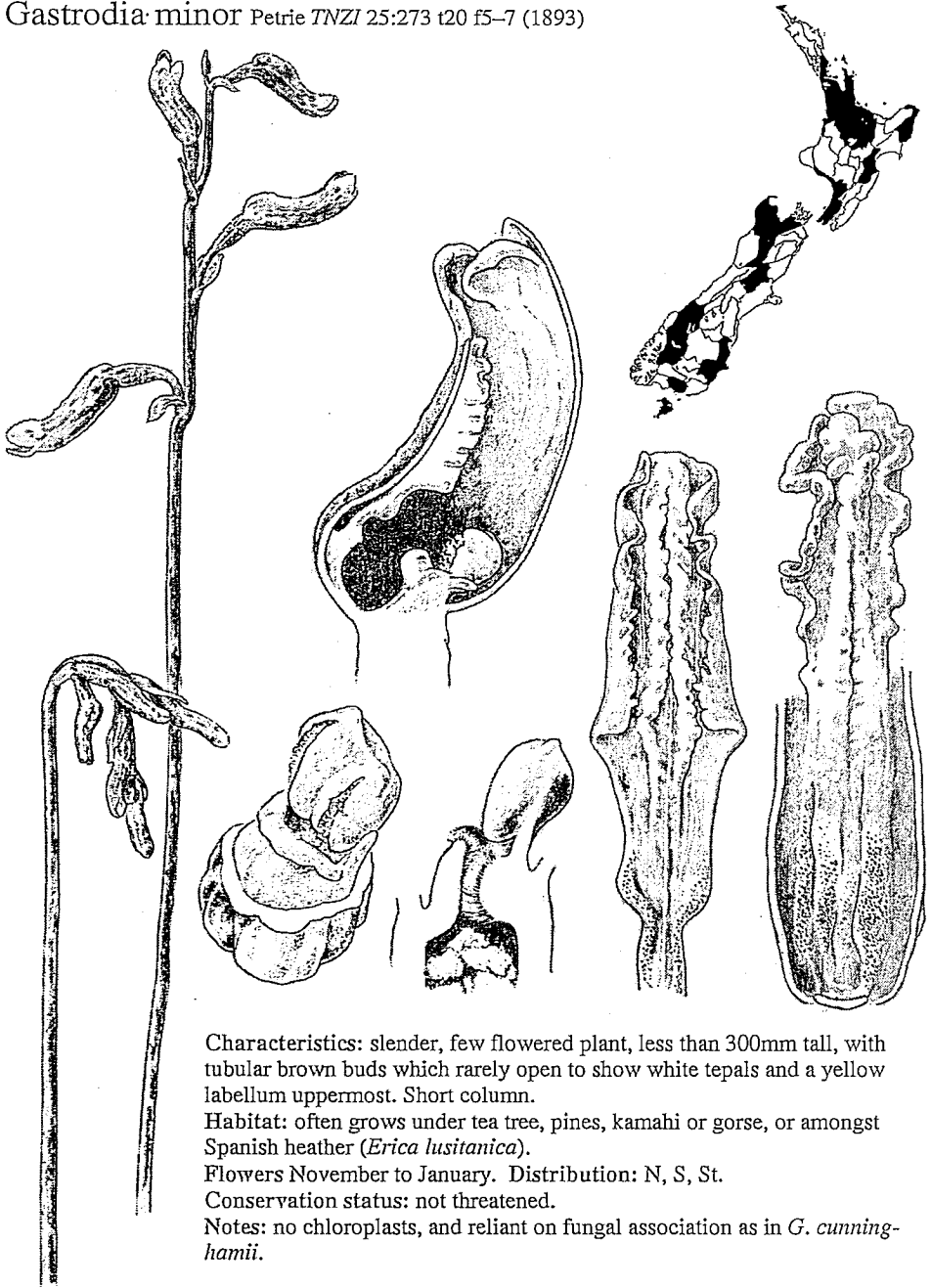
Characteristics: stems up to 1m tall with as many as 70 dark brown to greenish, rather knobby flowers with labella uppermost, the other 5 tepals being united in a tube. Labellum has a black tip. Transverse ridges on the back of the very short column expand, forcing the pollinia down on the stigma, ensuring self pollination, after which the flowers turn to stand erect.

Habitat: montane beech and pine forests.

Flowers November to February. Distribution: N (records north of Auckland are doubtful), S, St, Ch.

Conservation status: not threatened. Notes: lacks chlorophyll; tubers may flower only at about 3 year intervals.

Gastrodia minor Petrie *TNZI* 25:273 t20 f5-7 (1893)



Characteristics: slender, few flowered plant, less than 300mm tall, with tubular brown buds which rarely open to show white tepals and a yellow labelum uppermost. Short column.

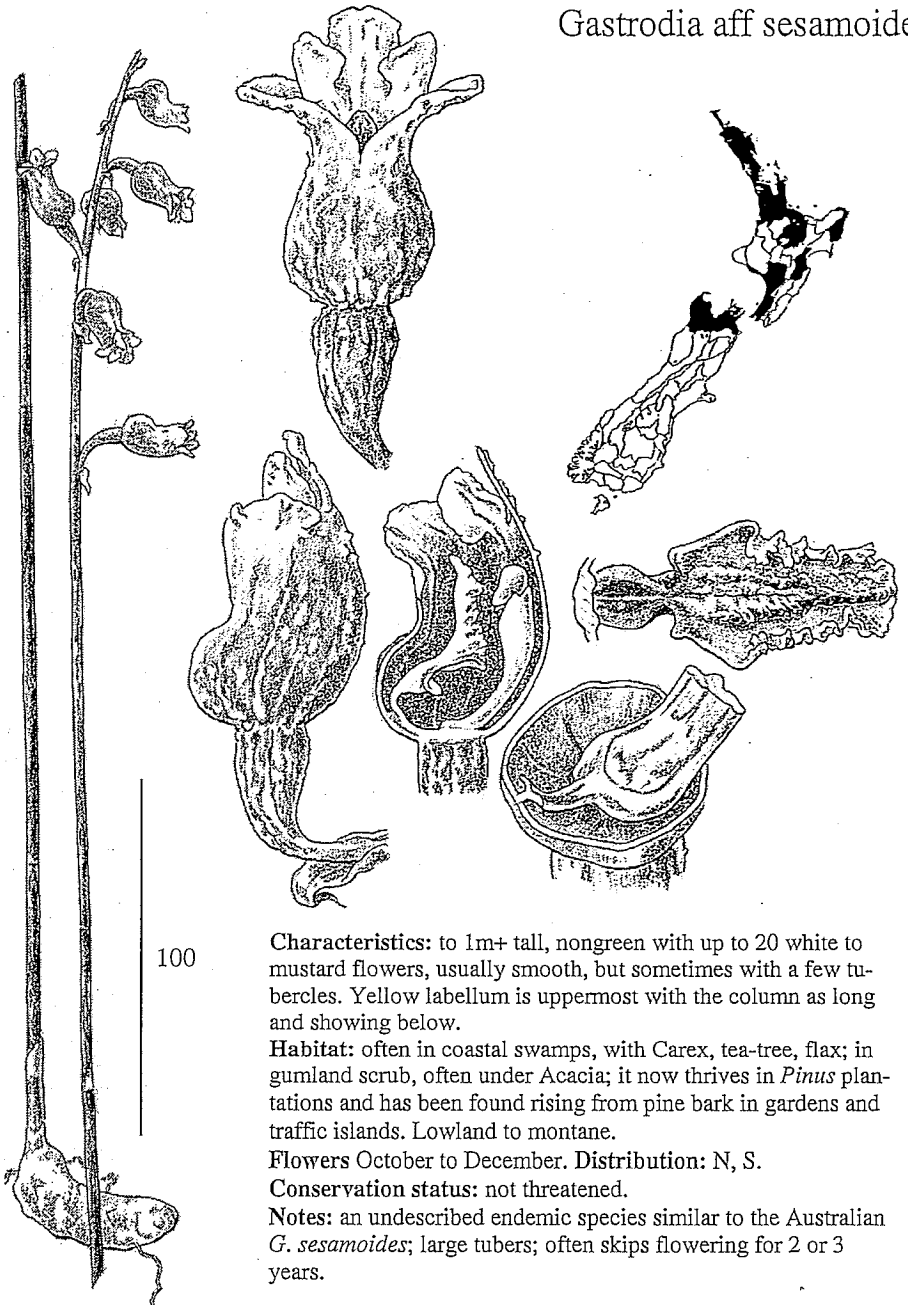
Habitat: often grows under tea tree, pines, kamahi or gorse, or amongst Spanish heather (*Erica lusitanica*).

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

Conservation status: not threatened.

Notes: no chloroplasts, and reliant on fungal association as in *G. cunninghamii*.

Gastrodia aff *sesamoides*



100

Characteristics: to 1m+ tall, nongreen with up to 20 white to mustard flowers, usually smooth, but sometimes with a few tubercles. Yellow labellum is uppermost with the column as long and showing below.

Habitat: often in coastal swamps, with *Carex*, tea-tree, flax; in gumland scrub, often under *Acacia*; it now thrives in *Pinus* plantations and has been found rising from pine bark in gardens and traffic islands. Lowland to montane.

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

Conservation status: not threatened.

Notes: an undescribed endemic species similar to the Australian *G. sesamoides*; large tubers; often skips flowering for 2 or 3 years.

Gastrodia "long column"

Characteristics: a complex of robust nongreen taxa with knobby yellow to yellow/green flowers heavily marked greenish brown to almost black. Long column shows beneath the yellow tipped labellum. Some smell of freesias.

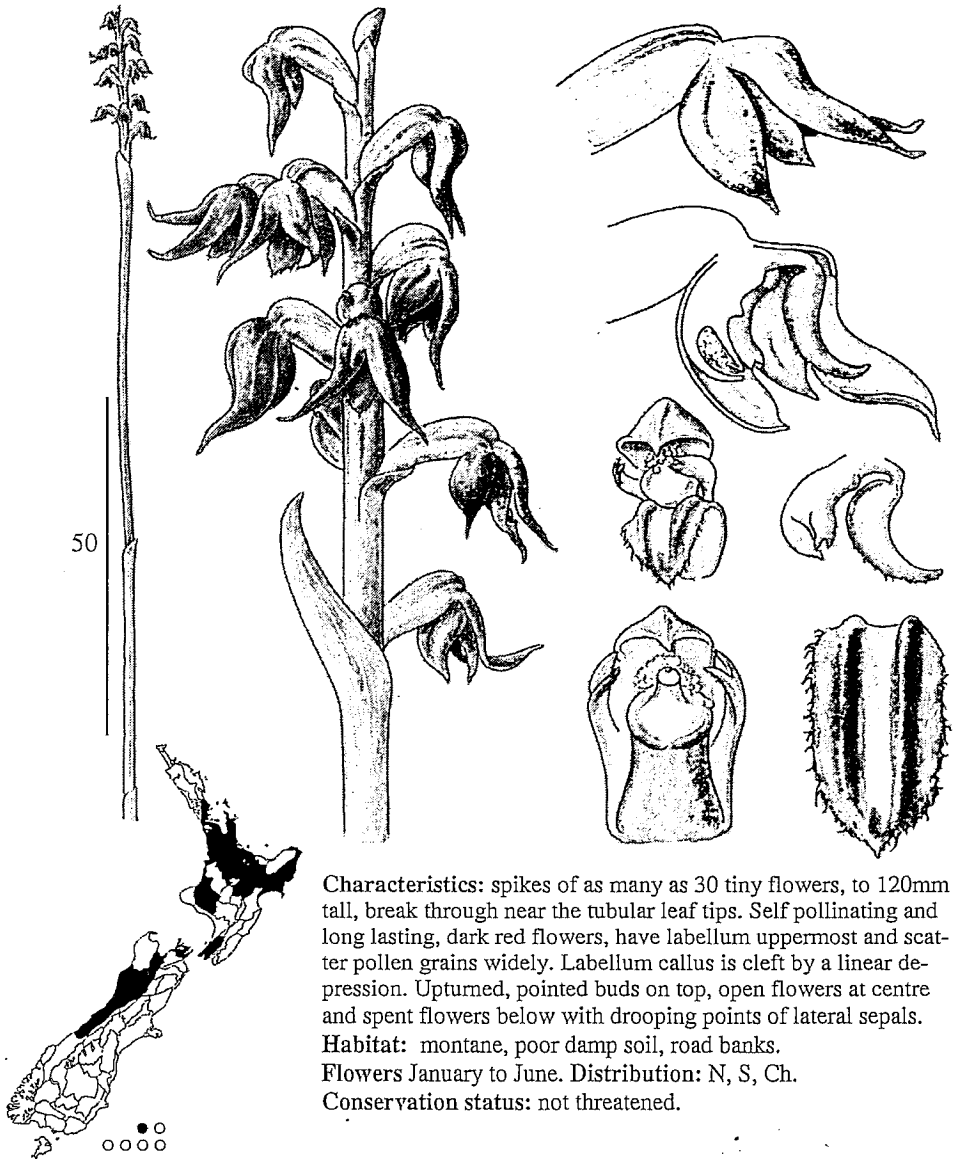
Habitat: in beech, kanuka, swampy riparian forest, estuarine bracken, under Rhododendrons etc. **Flowers** December to February. **Distribution:** N, S, St.

Notes: up to 60 flowers open at once on one fragrant taxon in the Wairarapa. Another at St. Arnaud with spikes of up to 36 flowers has different plants in bud, flower and seeding capsules in February. Owhango and Upper Hutt have a nonperfumed taxon which drops all its spent flowers.



Genoplesium nudum

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



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 linear depression. Uprturned, pointed buds on top, open flowers at centre and spent flowers below with drooping points of lateral sepals.

Habitat: montane, poor damp soil, road banks.

Flowers January to June. **Distribution:** N, S, Ch.

Conservation status: not threatened.

Genoplesium pumilum

(Hook.f.) D.L.Jones & M.A.Clem.

Lindleyana 4(3):144 (1989)

Characteristics: spikes of up to 30 cream green flowers with reddish base uppermost, erupt from the side of the tubular leaf, leaving the free tip among the flowers. Nonresupinate bell-like flowers with coherent pollinia face the ground. Generally up to 120mm tall, some 420mm tall in the Far North.

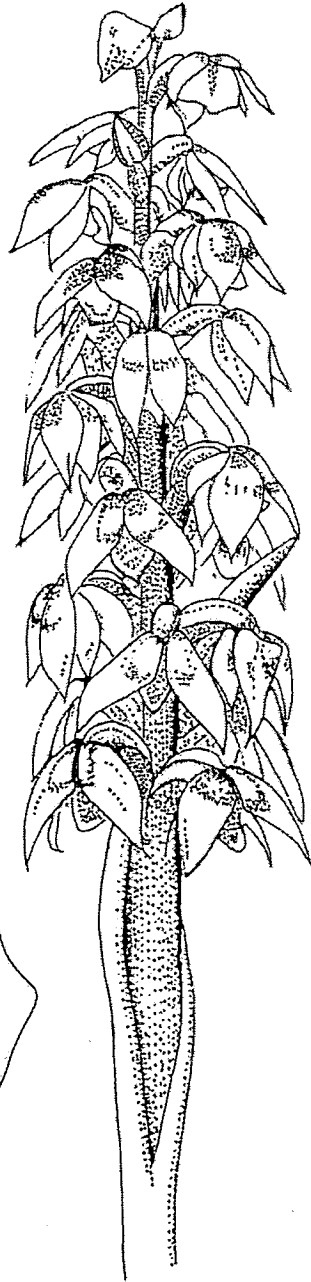
Habitat: locally common in gumland scrub & on clay banks in regenerating kauri forest, dappled shade on one mossy road batter.

Flowers March to July.

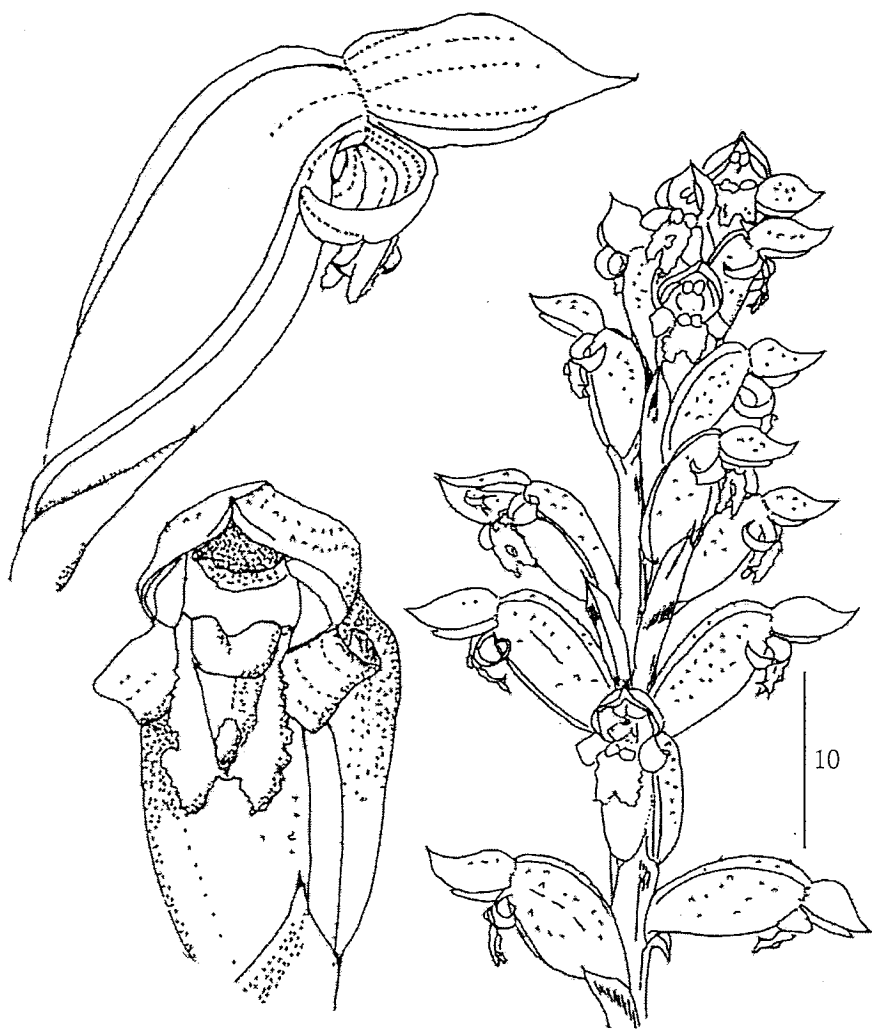
Distribution: N, S.

Conservation status: sparse.

Notes: easily overlooked as a result of its winter flowering. The longlasting flowers remain, sometimes into September.



10



Microtis arenaria Lindl. *Genera & Spec. Orch. Plants* 1306 (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.

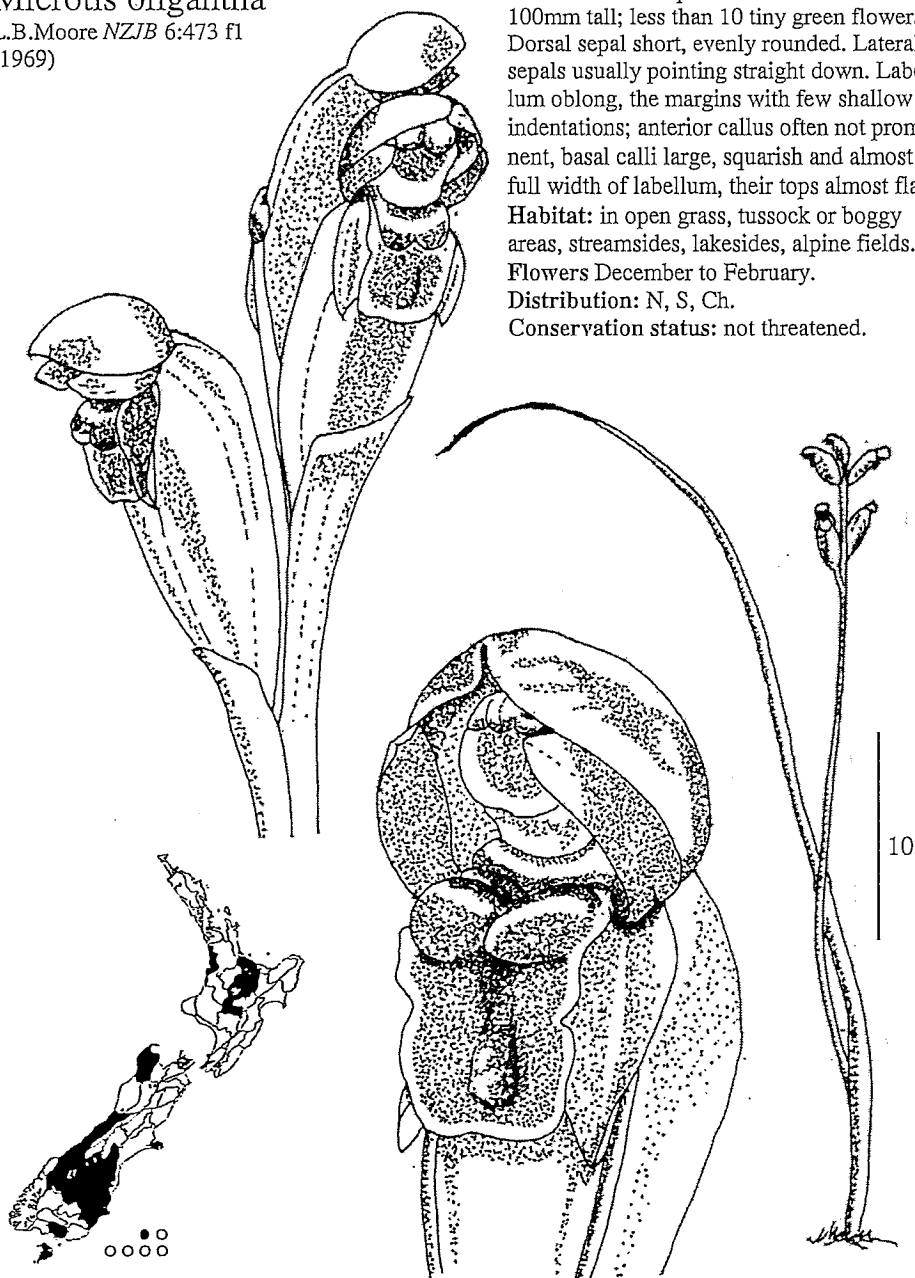
Distribution: N, so far found only in the far North (and recently in Hawke's Bay).

Notes: common Australian species— was known there as *M. biloba*.

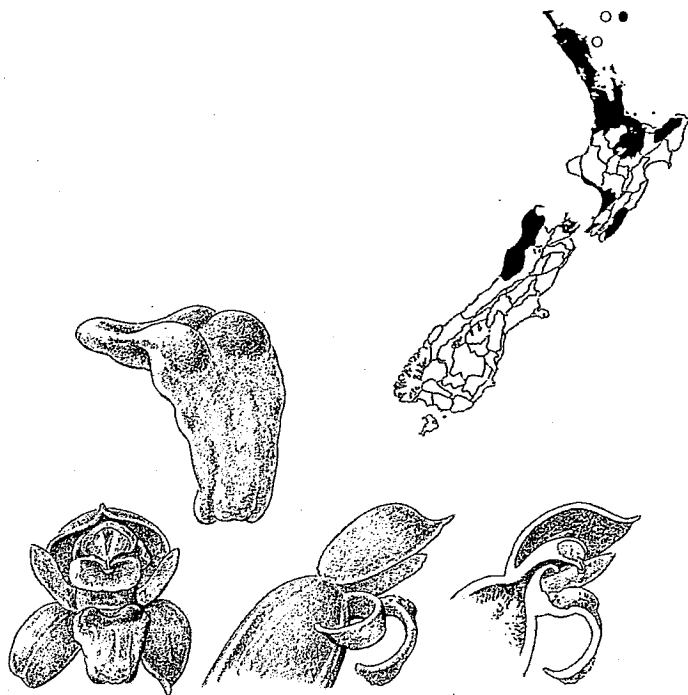
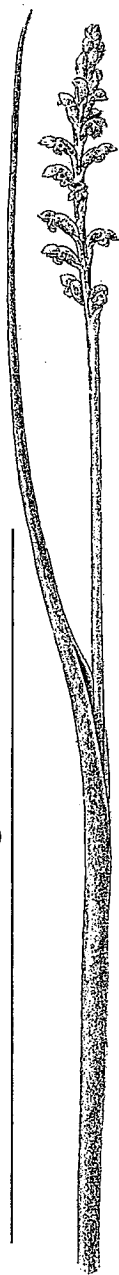
Microtis oligantha

L.B. Moore *NZJB* 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.



100



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 – tongue-like – with smooth margin and no terminal notch. The two elongated calli at the base of the labellum are rounded and parallel.

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

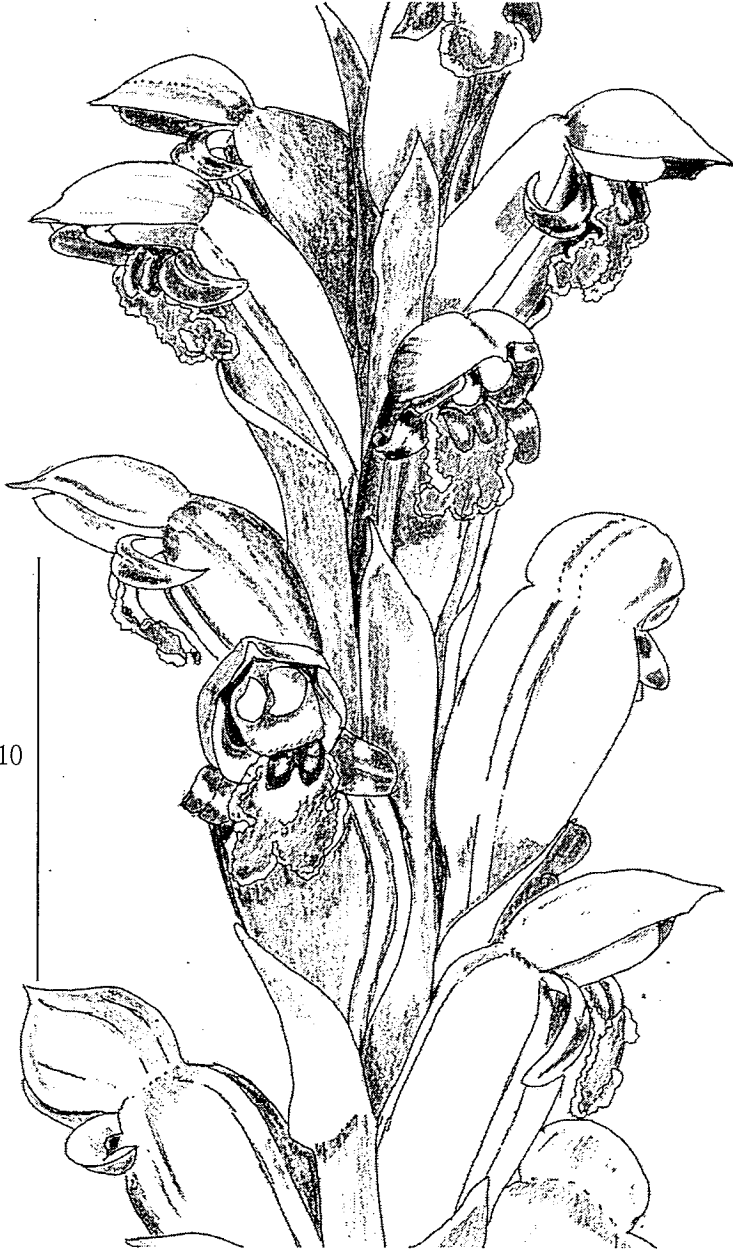
Flowers October to March.

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 (Forst.) Rehb.f. Beitr. Syst. Pflk. 62 (1871)



Characteristics: 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 often notched but not apiculate; apical callus variable, warty; basal calli oval, prominent.

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

Flowers September to November.

Distribution: uncertain as a result of confusion with similar unnamed taxa: certainly robust plants like this are not found in the far south.

Conservation status: not threatened.

Microtis aff. unifolia

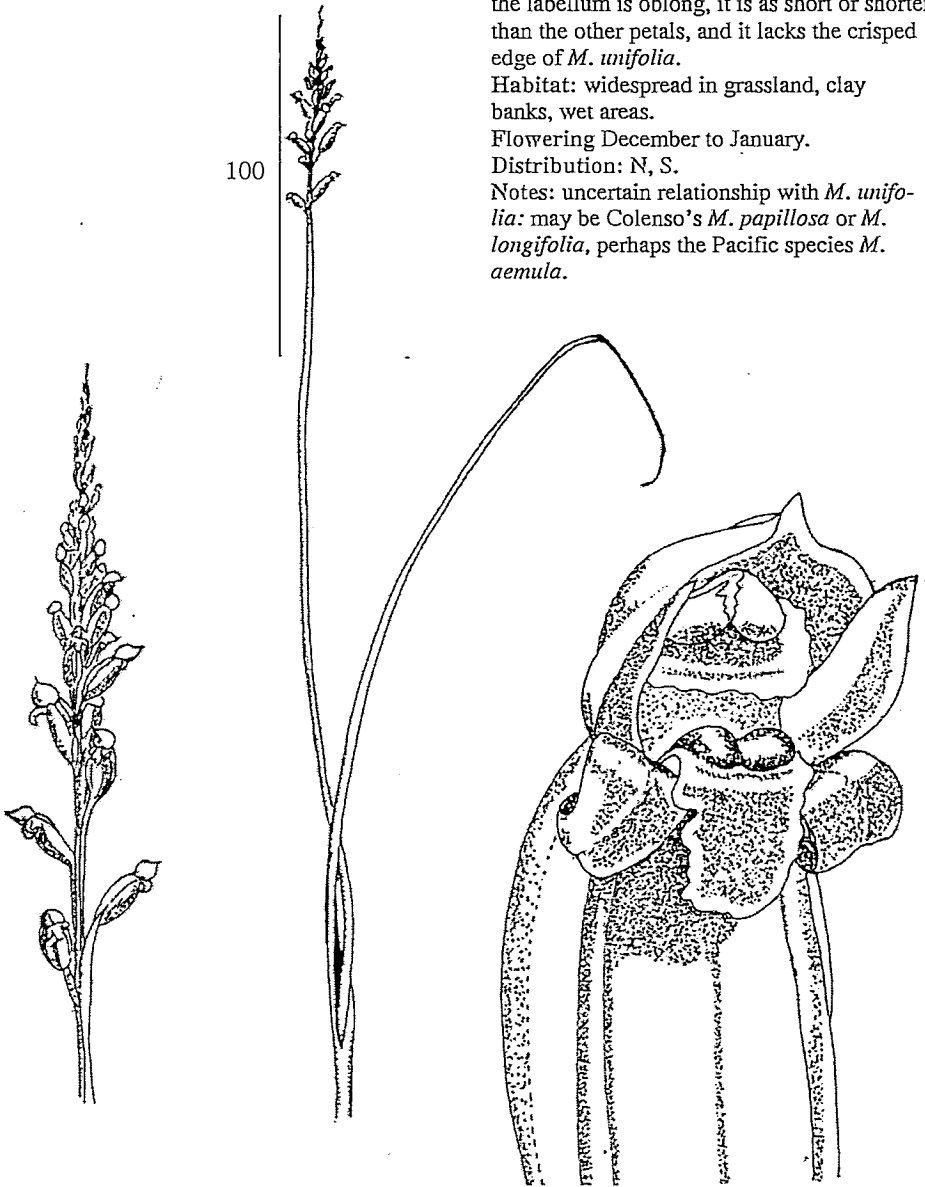
Characteristics: small, summer flowering plant is common, and is often mistaken for *M. unifolia*. It flowers later, is less robust, the flowers are more widely spaced, and though the labellum is oblong, it is as short or shorter than the other petals, and it lacks the crised edge of *M. unifolia*.

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

Flowering December to January.

Distribution: N, S.

Notes: uncertain relationship with *M. unifolia*: may be Colenso's *M. papillosa* or *M. longifolia*, perhaps the Pacific species *M. aemula*.





Orthoceras novae-zeelandiae

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

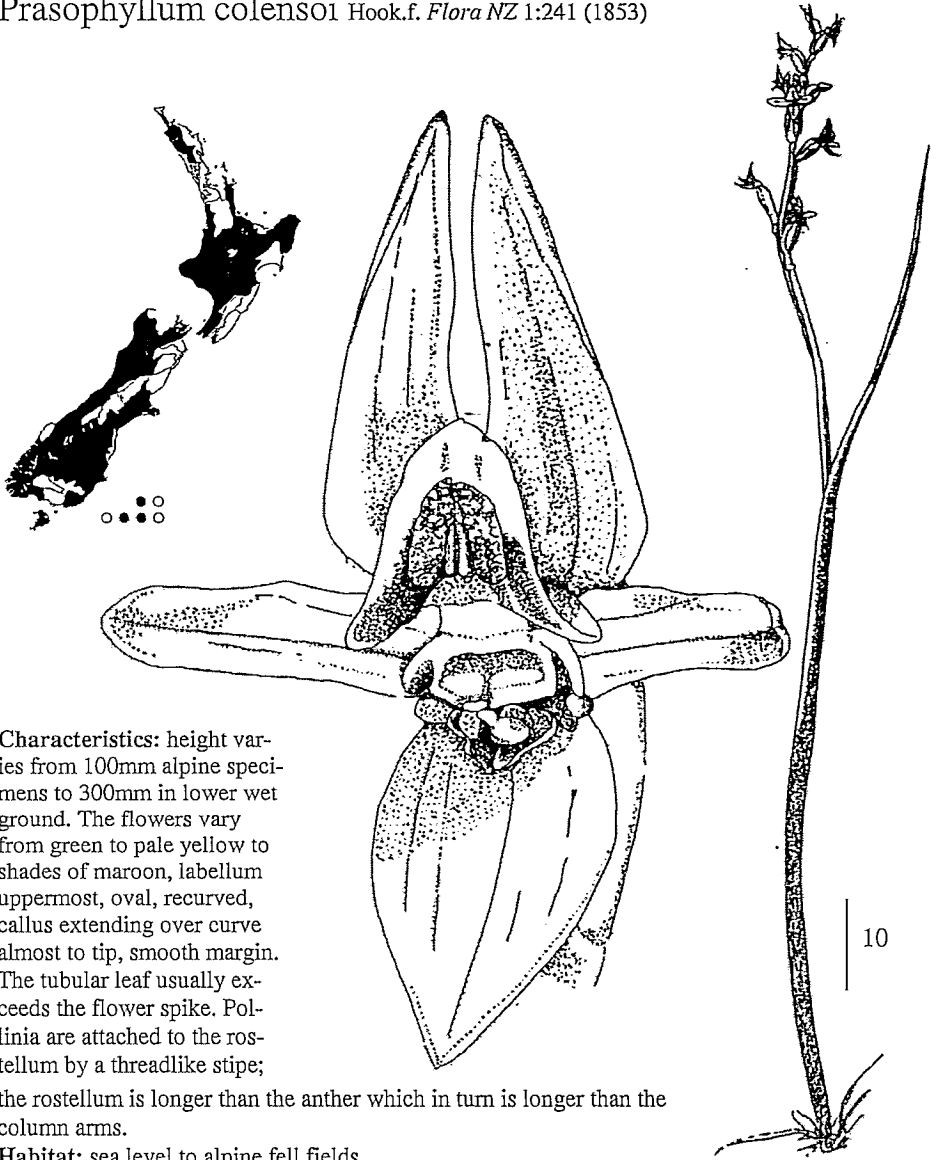
Characteristics: up to 70cm tall, with several long stiff pointed channelled leaves, shorter than stem; 2–12 green to maroon flowers, 1cm dorsal sepal, with lateral sepals like thin horns, upright to diverging horizontally. Broad labellum bends forwards, 3-lobed, tip rounded. Floral bract short.

Habitat: Dry open banks. Flowers November to January.

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

Notes: we may also have the Australian *O. strictum* (with its pointed labellum and tall floral bract).

Prasophyllum colensoi Hook.f. *Flora NZ* 1:241 (1853)



Characteristics: height varies from 100mm alpine specimens to 300mm in lower wet ground. The flowers vary from green to pale yellow to shades of maroon, labellum uppermost, oval, recurved, callus extending over curve almost to tip, smooth margin. The tubular leaf usually exceeds the flower spike. Pollinia are attached to the rostellum by a threadlike stipe;

the rostellum is longer than the anther which in turn is longer than the column arms.

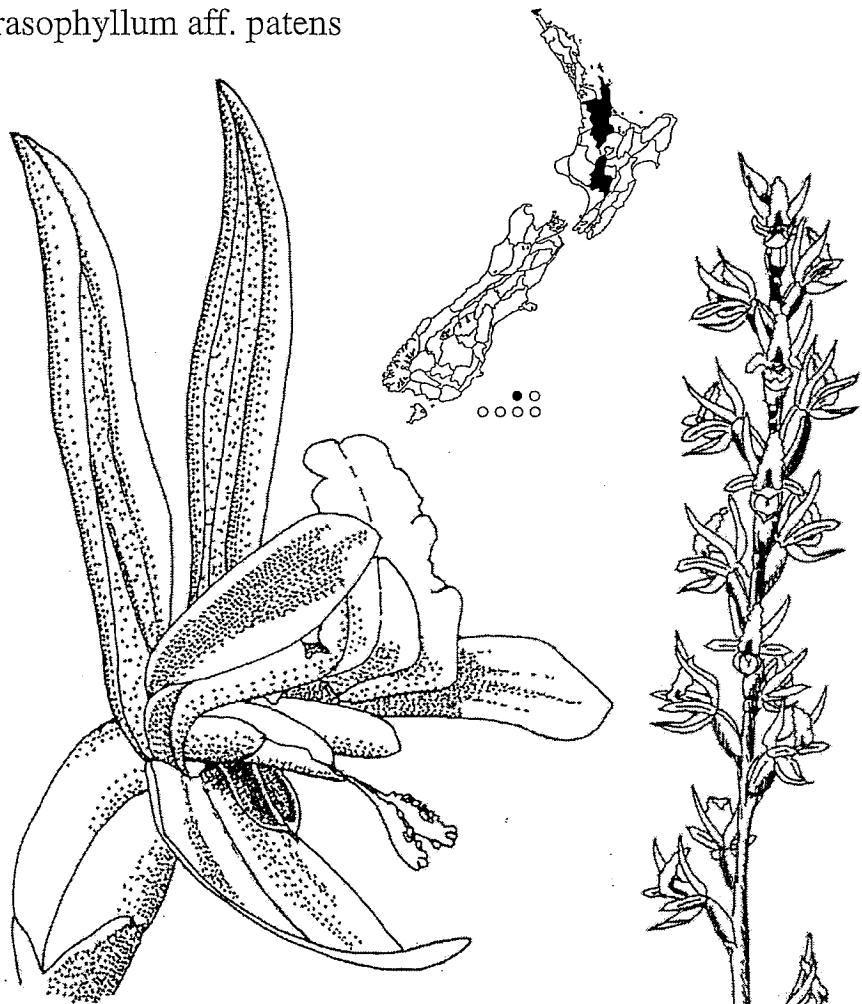
Habitat: sea level to alpine fell fields.

Flowers October to February. Distribution: N, S, St, Ch, Ant, AKIs.

Conservation status: not threatened.

Notes: a very widespread and variable species, possibly including several taxa.

Prasophyllum aff. *patens*



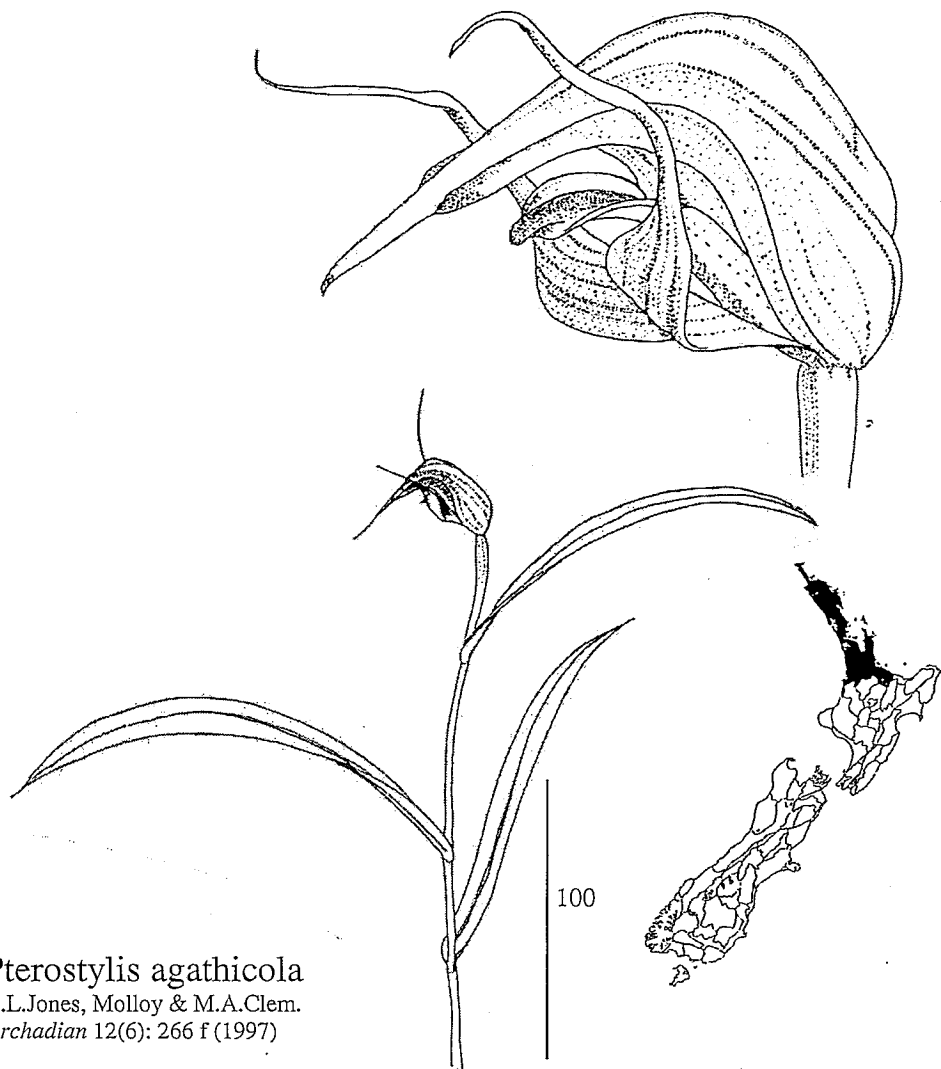
Characteristics: tall plants, to 900mm, the flowers often green, flushed red/purple. Labellum uppermost on a very short claw, margins usually white, showy; sharply bent at middle, callus smooth, flushed pale green, rather narrow and reaching just beyond the bend. Strongly perfumed to many people. Pollinia here withdrawn from anther on a slender stipe.

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

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

Conservation status: taxonomically indeterminate, vulnerable.

Notes: several colour forms: Chatham 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.

Habitat: common only in kauri forest.

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

Conservation status: not threatened.



Pterostylis alobula

(Hatch) L.B. Moore NZJB 6:486 f3 (1969)

Characteristics: 150mm plant, 20mm flower; hood tip 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*. Flower usually narrower than that of *P. brumalis*. **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.

Diplotria

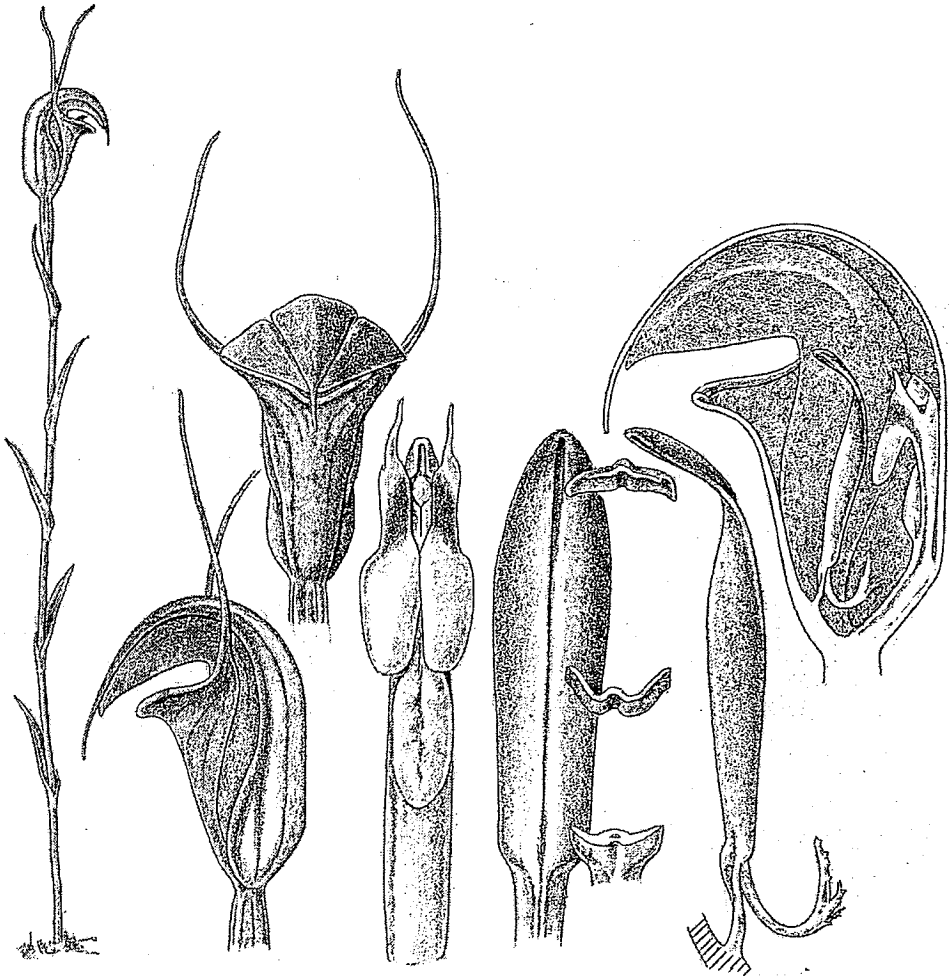
Pterostylis alveata Garnet Vict. *Naturalist* 59:91 (1939)

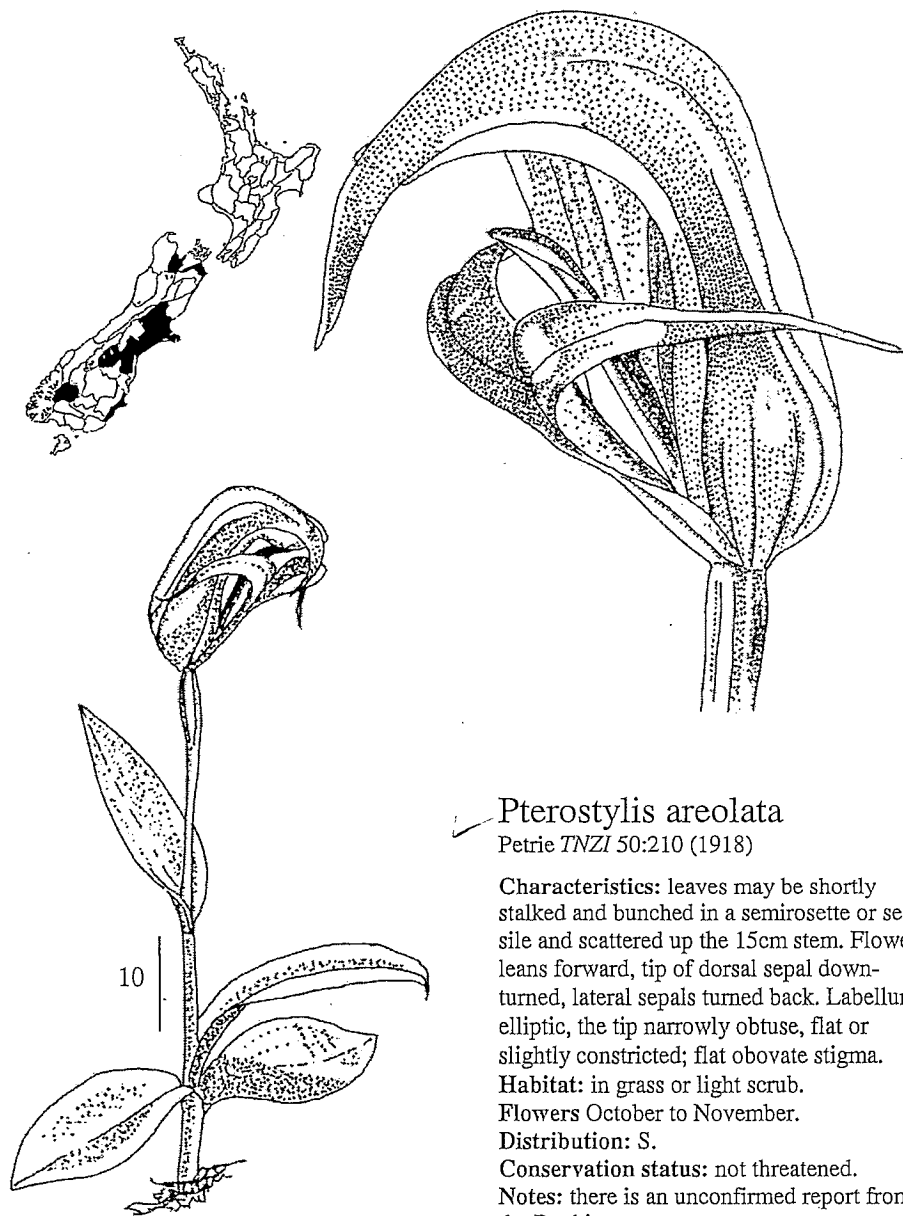
Characteristics: Flowerless plants have a rosette of round leaves (much larger than those of *P. trullifolia* and *P. alobula*) but flower stems have only erect bractlike leaves. Dorsal sepal hood with wirelike apiculus can completely obscure the erect, dark brown obtuse labellum. Sinus to lateral sepals protrudes like a jug spout. Red markings on the column wings.

Habitat: Poor soils in tea tree and gorse.

Flowers February to May. **Distribution:** S: northwest Nelson only.

Conservation status: insufficiently known. **Notes:** a recently discovered Australian coloniser.





Pterostylis areolata

Petrie *TNZI* 50:210 (1918)

Characteristics: leaves may be shortly stalked and bunched in a semirossette or sessile and scattered up the 15cm stem. Flower leans forward, tip of dorsal sepal down-turned, lateral sepals turned back. Labellum elliptic, the tip narrowly obtuse, flat or slightly constricted; flat obovate stigma.

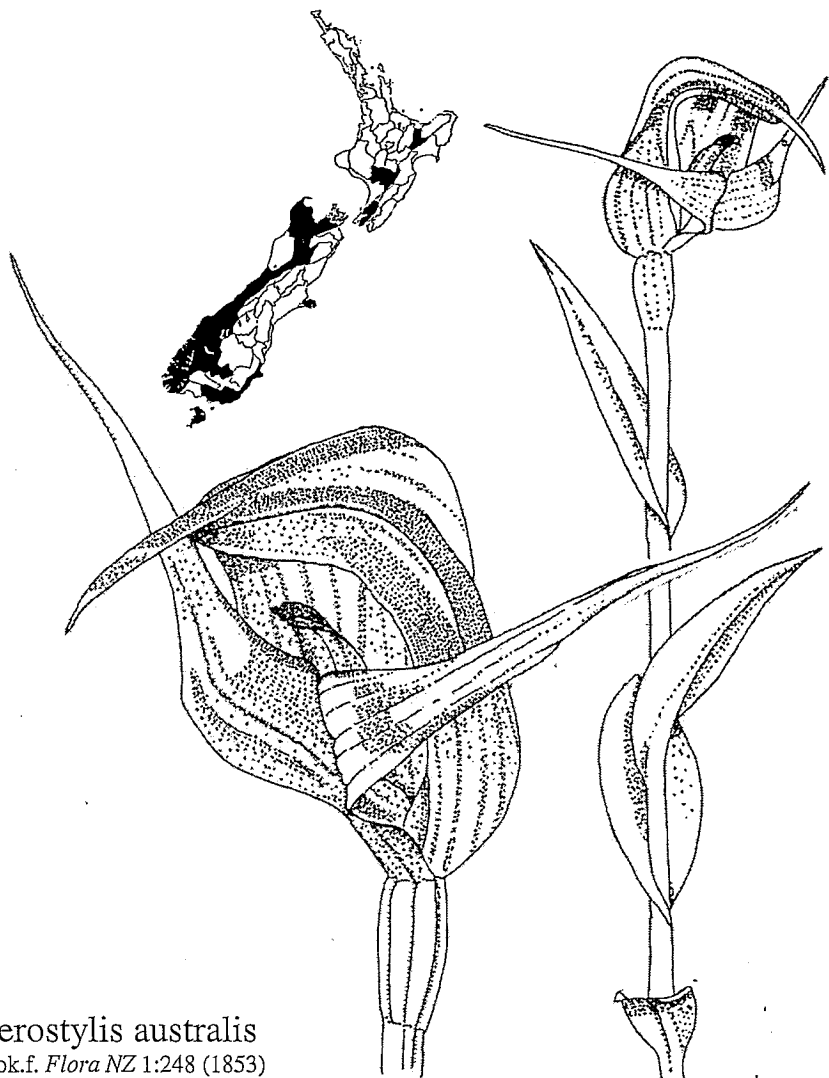
Habitat: in grass or light scrub.

Flowers October to November.

Distribution: S.

Conservation status: not threatened.

Notes: there is an unconfirmed report from the Ruahines.



✓ *Pterostylis australis*

Hook.f. *Flora NZ* 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.

Habitat: lowland to montane scrub and beech forest.

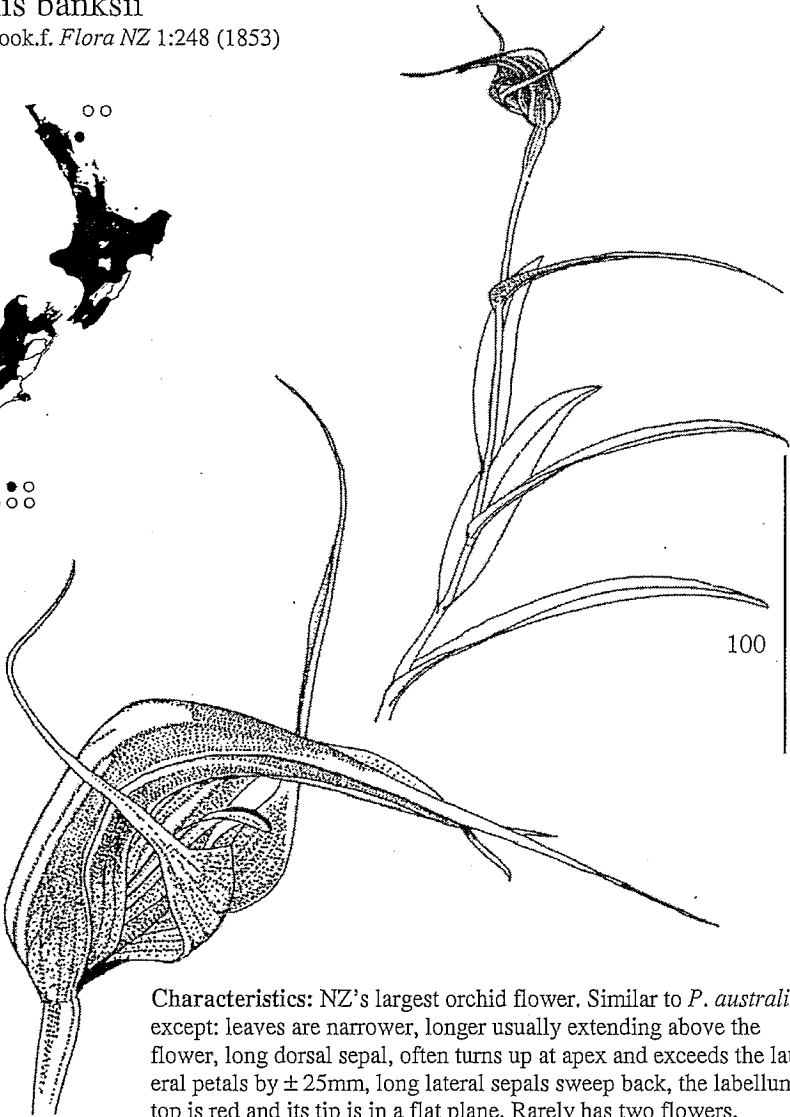
Flowers November to December.

Distribution: N, S, St.

Conservation status: not threatened.

Pterostylis banksii

A.Cunn. in Hook.f. *Flora NZ* 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 $\pm 25\text{mm}$, long lateral sepals sweep back, the labellum top is red and its tip is in a flat plane. Rarely has two flowers.

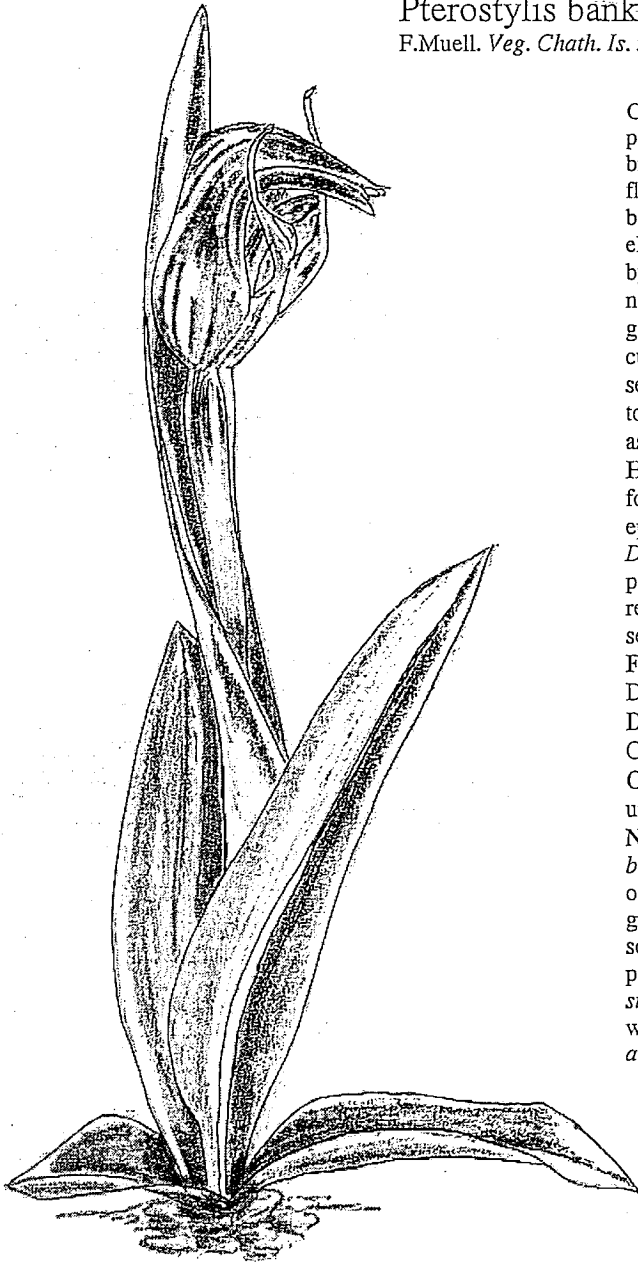
Habitat: lowland to montane, damp scrub or well lit forest.

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

Conservation status: not threatened.

Notes: on the Chatham Islands *P. banksii* grows with *P. banksii* var. *silvicultrix* F. Muell.

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



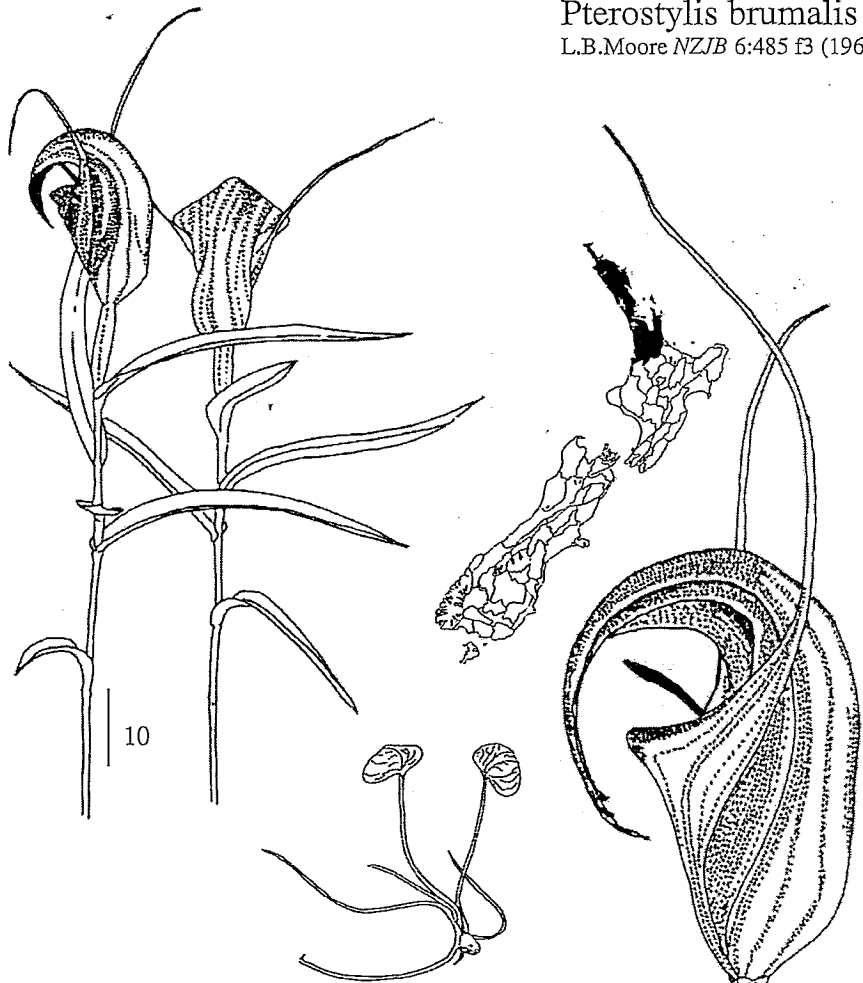
Characteristics: Juvenile plants have broadly-ovate, to broadly-elliptic leaves; flowering specimens have a basal set of broadly-ovate/elliptic leaves 25-60mm long by 20-25mm broad, and then narrow lanceolate leaves; galea with very short, often curled, somewhat truncate sepals, overall coloured dark 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: unknown.

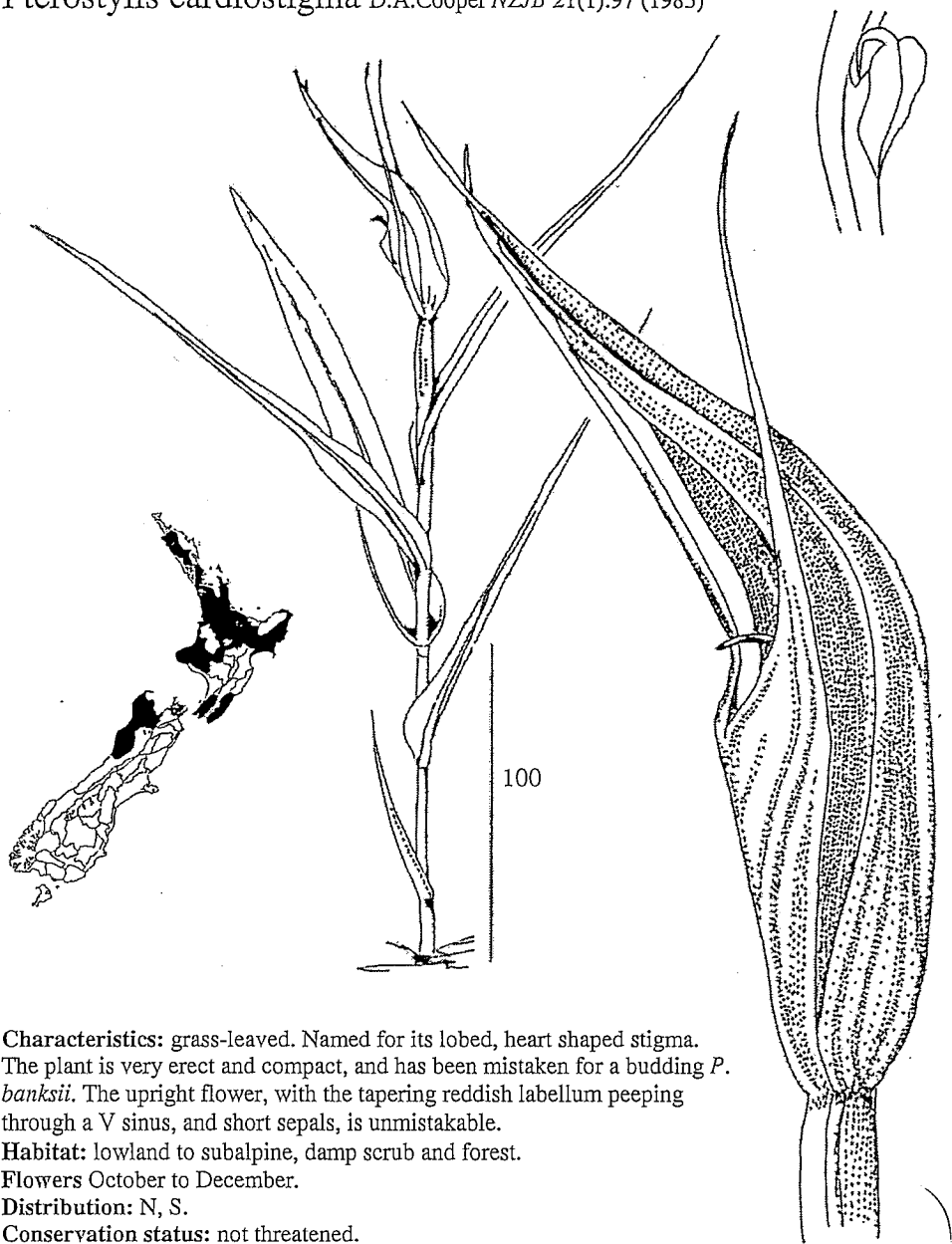
Notes: sympatric with *P. banksii* which is less common on the Chathams, usually grows in more open forest, and so far has not been seen on peat; *P. banksii* var. *silvicultrix* has been confused with *P. montana* and *P. australis*.

Pterostylis brumalis
L.B.Moore NZJB 6:485 f3 (1969)



Characteristics: the strongly incurved dorsal sepal with 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 broad and tend to be bunched toward the top of the stem. Habitat: confined to the immediate vicinity of the kauri, in shady spots. Flowers April to December. Distribution: N. Conservation status: not threatened. Notes: plants have distinct juvenile and adult stages.

✓ *Pterostylis cardiostigma* D.A.Cooper NZJB 21(1):97 (1983)



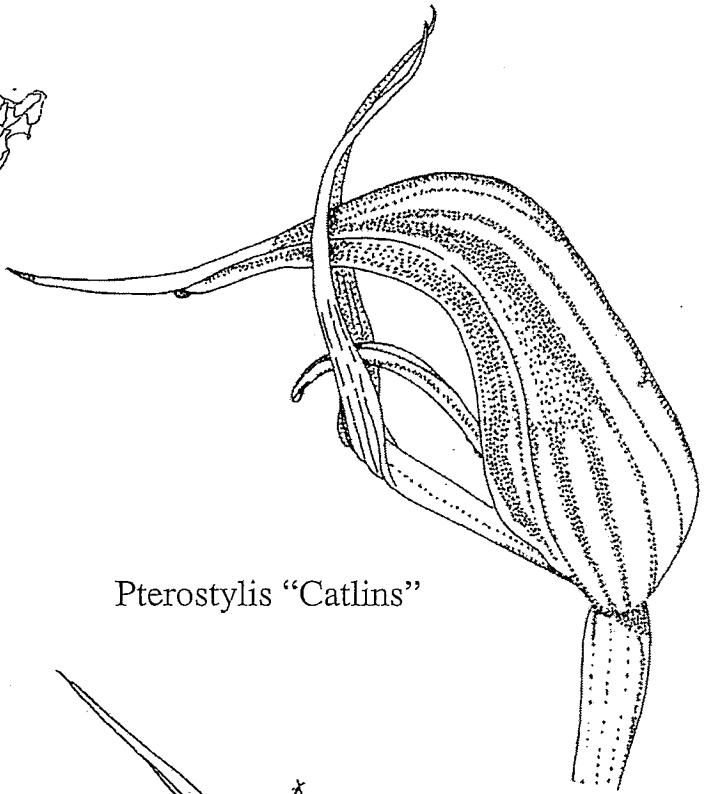
Characteristics: grass-leaved. Named for its lobed, heart shaped stigma. The plant is very erect and compact, and has been mistaken for a budding *P. banksii*. The upright flower, with the tapering reddish labellum peeping through a V sinus, and short sepals, is unmistakable.

Habitat: lowland to subalpine, damp scrub and forest.

Flowers October to December.

Distribution: N, S.

Conservation status: not threatened.

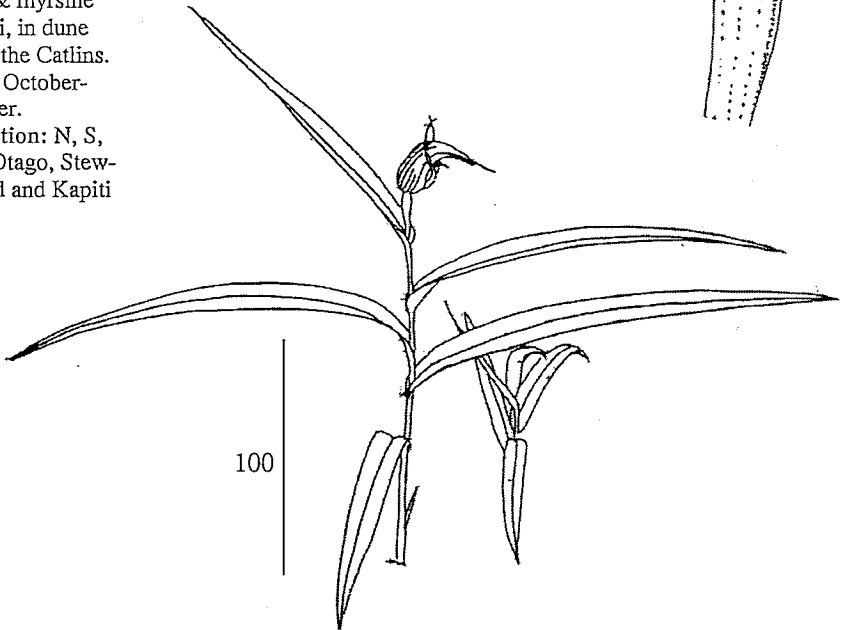


Pterostylis "Catlins"

Characteristics: it has distinctive broad long arched leaves and an arched and tapering labellum.

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 and Kapiti Island).



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



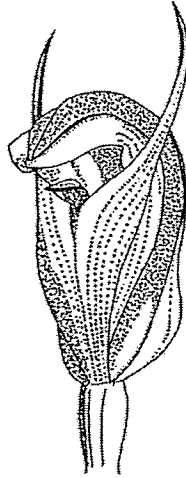
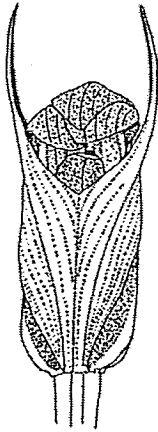
Characteristics: similar to the short-tepalled form of *P. graminea* found in sphagnum and swamps in several sites. Nonflowering plants to 60mm tall with 3–5 lanceolate leaves. Flowering plants to 120mm with 4–5 sheathing, grasslike leaves. Labellum dark green with central blackish green callus, leans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

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

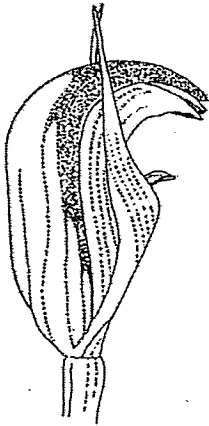
Flowers November to January. **Distribution:** S: (Aspiring Ecological Region only).

Conservation status: threatened, critically endangered.

Notes: although listed as critically endangered, its habitat is widespread in Westland and it may have been overlooked.



✓ *Pterostylis foliata* Hook.f. *Flora NZ* 1:249 (1853)

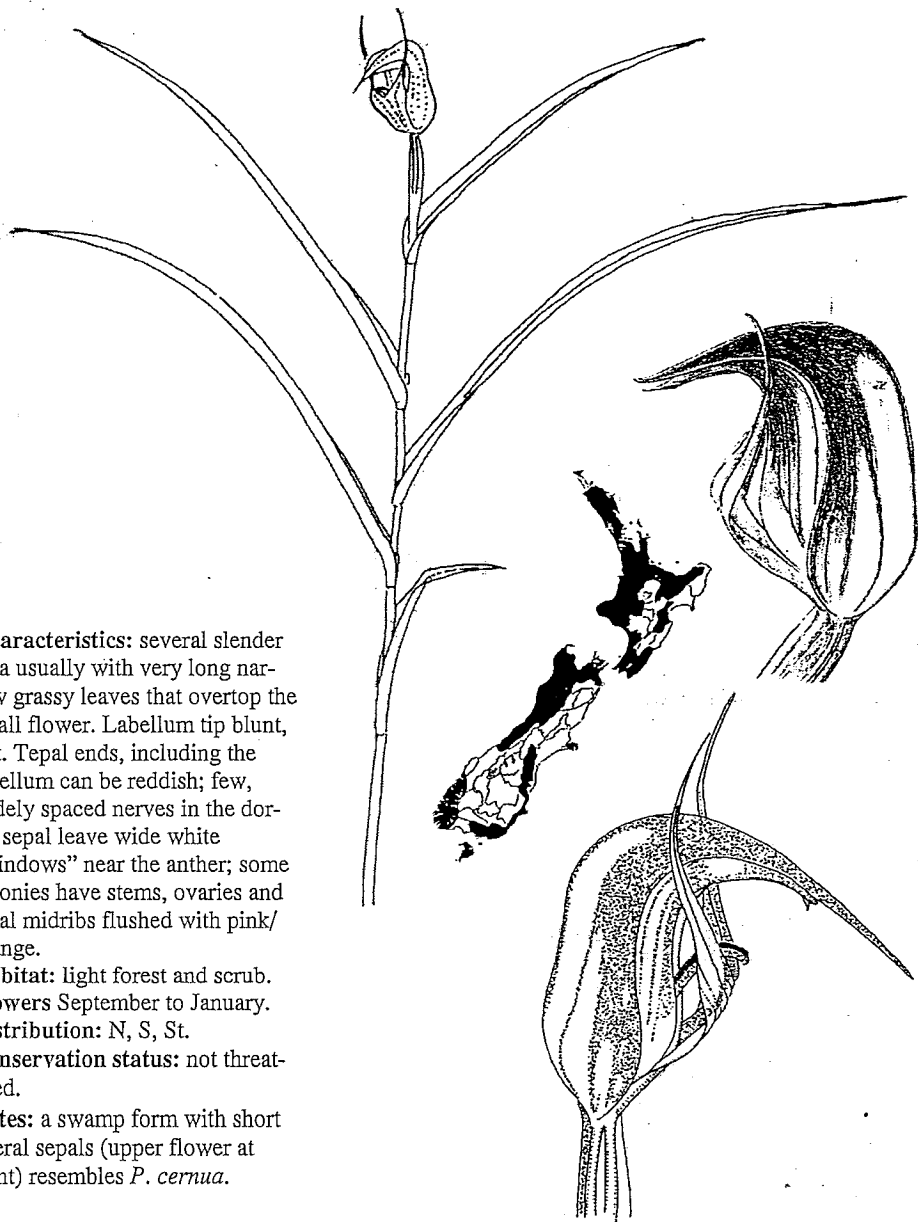


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Characteristics: elliptic leaves in a semirosette; stem with one or two leafy sheathing bracts. Plant to 300mm tall, the stem elongating greatly after fertilisation. Slender erect flower with dark green, abbreviated dorsal sepal stopping level with the lateral petals. Broad labellum, pale under, dark green on top. 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 NZ* 1:248 (1853)



Characteristics: several slender taxa usually with very long narrow grassy leaves that overtop the small flower. Labellum tip blunt, flat. Tepal ends, including the labellum can be reddish; few, widely spaced nerves in the dorsal sepal leave wide white "windows" near the anther; some colonies have stems, ovaries and tepal midribs flushed with pink/orange.

Habitat: light forest and scrub.

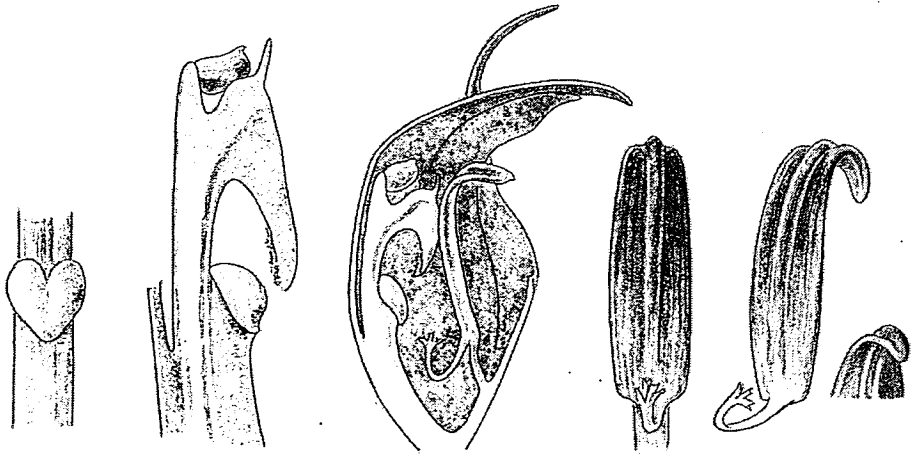
Flowers September to January.

Distribution: N, S, St.

Conservation status: not threatened.

Notes: a swamp form with short lateral sepals (upper flower at right) resembles *P. cernua*.

✓ *Pterostylis humilis* R.S.Rogers TRSSA 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 crimson/brown labellum is broader, 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 TRSNZ 78:104 t18 (1950)

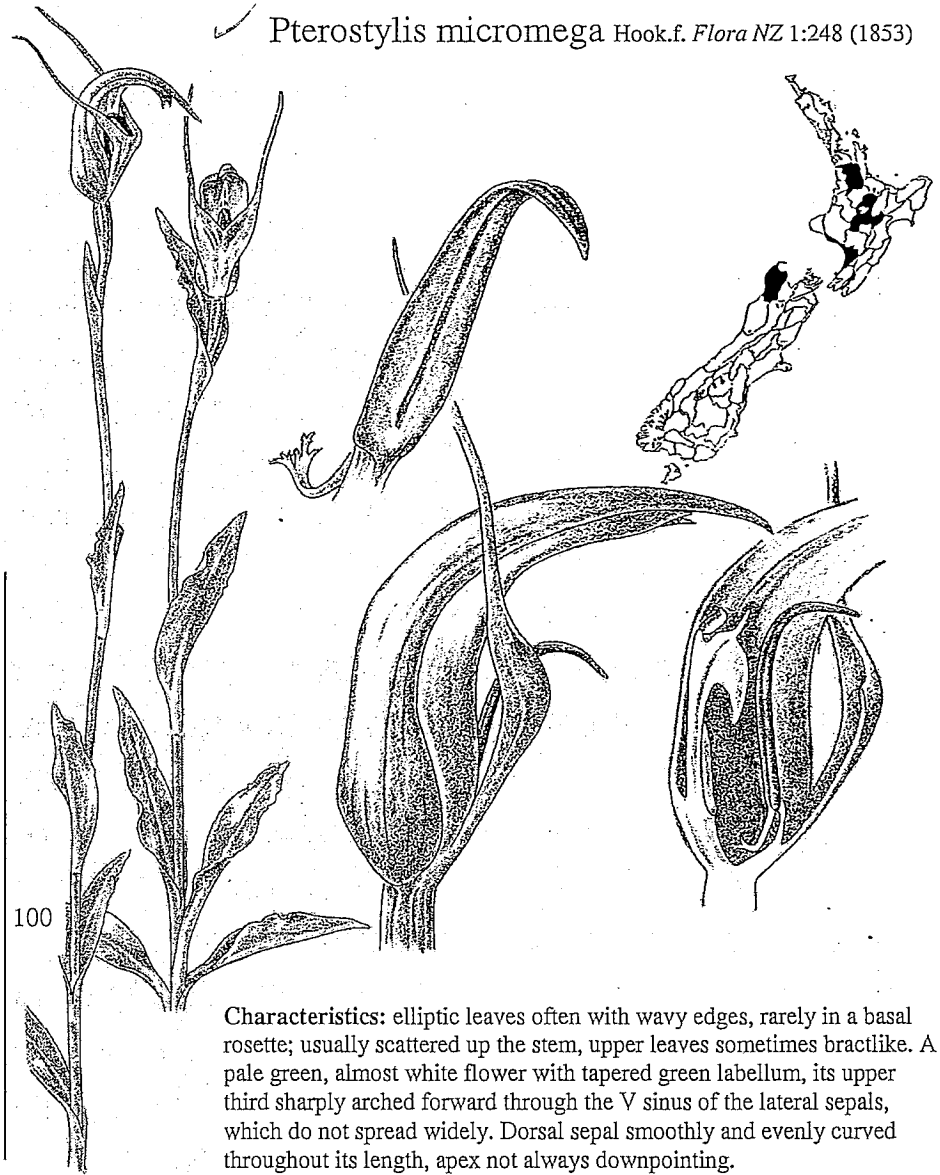


Characteristics: a large, slender-leaved plant sometimes with reddish tepal ends. Lateral sepals lean away from the upright flower and have an inward turning jug spout at the sinus; the labellum is dark and tapered.

Habitat: damp ground in light scrub or forest.

Flowers November to December. **Distribution:** N, S. **Conservation status:** insufficiently known.

✓ *Pterostylis micromega* Hook.f. *Flora NZ* 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.

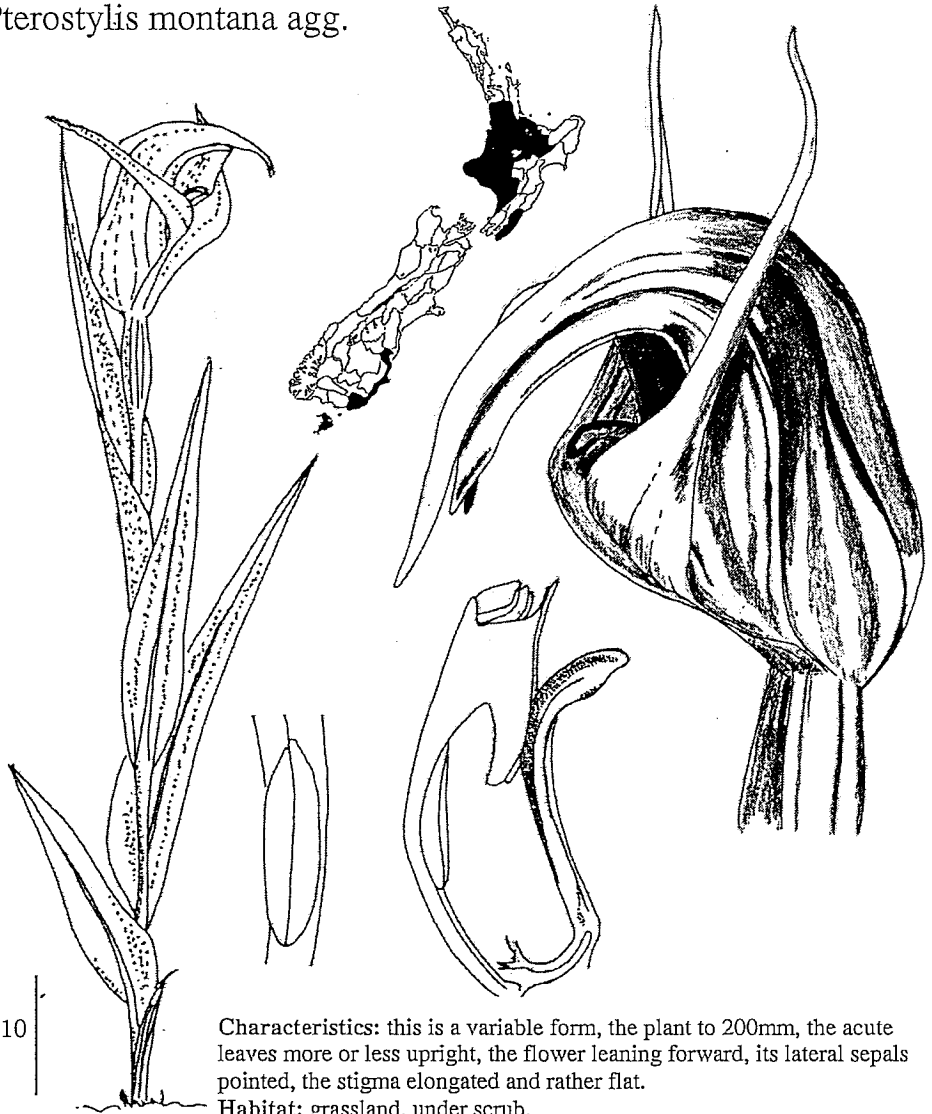
Habitat: stream edges and bogs in montane to lowland wetlands.

Flowers November to February.

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

Conservation status: threatened: endangered.

Pterostylis montana agg.



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

Habitat: grassland, under scrub.

Flowers September to December.

Distribution: S.

Notes: Hatch described *P. montana* in *TRSNZ* 77:239 t22 (1949), from tiny Stewart Island plants. This and the plant illustrated on the next page are found on Stewart Is. North Island forms are shown in the following pages. We are unable to agree which is the true *P. montana*.

Pterostylis montana agg.

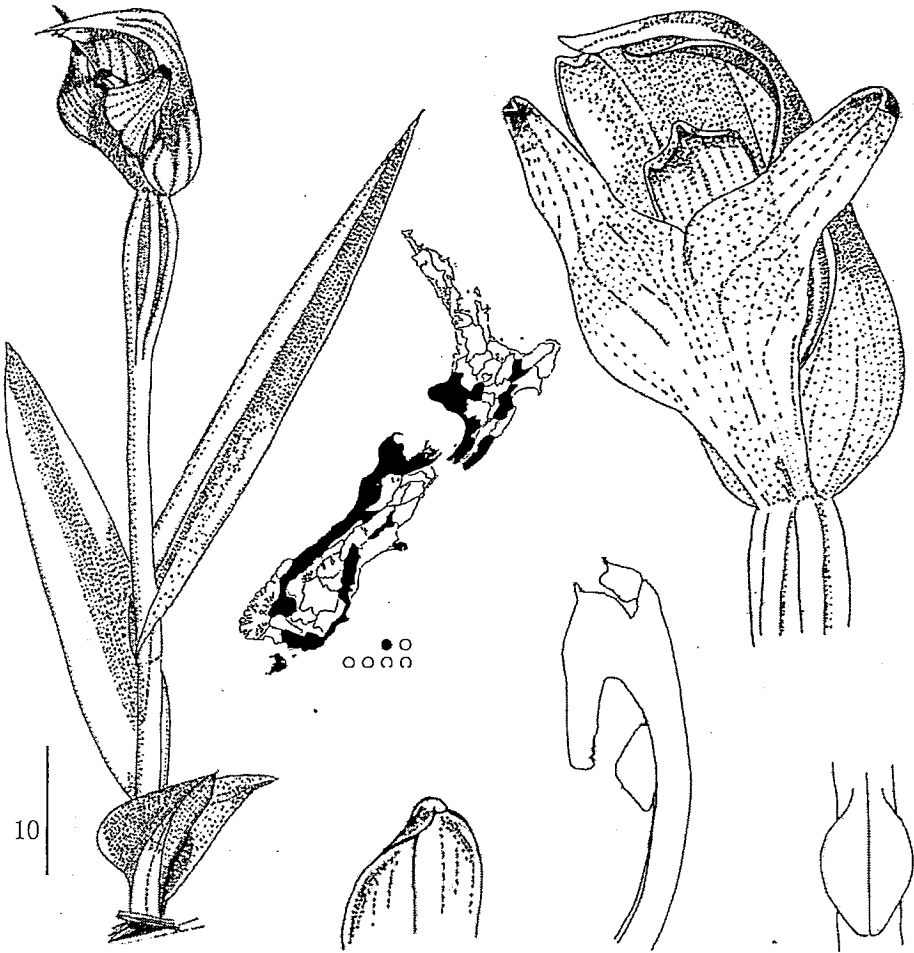
Characteristics: erect, often bronze-coloured grasslike leaves sheathe the flower stem. Flower self-pollinating, upright, chunky. Lateral sepals separate from one another in young bud, free lobes pointed, flat (not tubular), barely exceeding dorsal and inclined to curve forward when mature. Labellum little arched, stout, oblong, the apex constricted and strongly 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: (see p93) we are unable to agree which is the true *P. montana*.



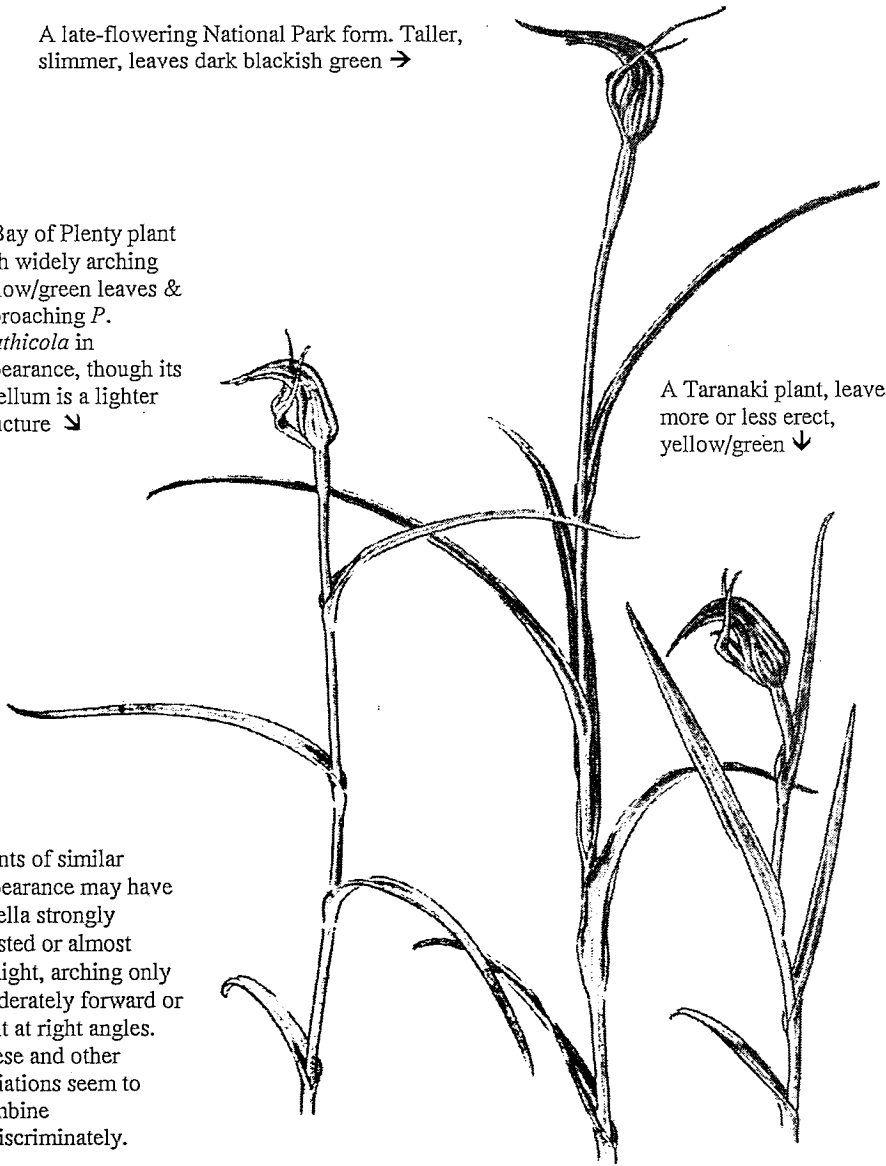
Pterostylis aff. *montana* Three forms from North Island sites, showing variation in habit, colour of leaves and times of flowering.

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*

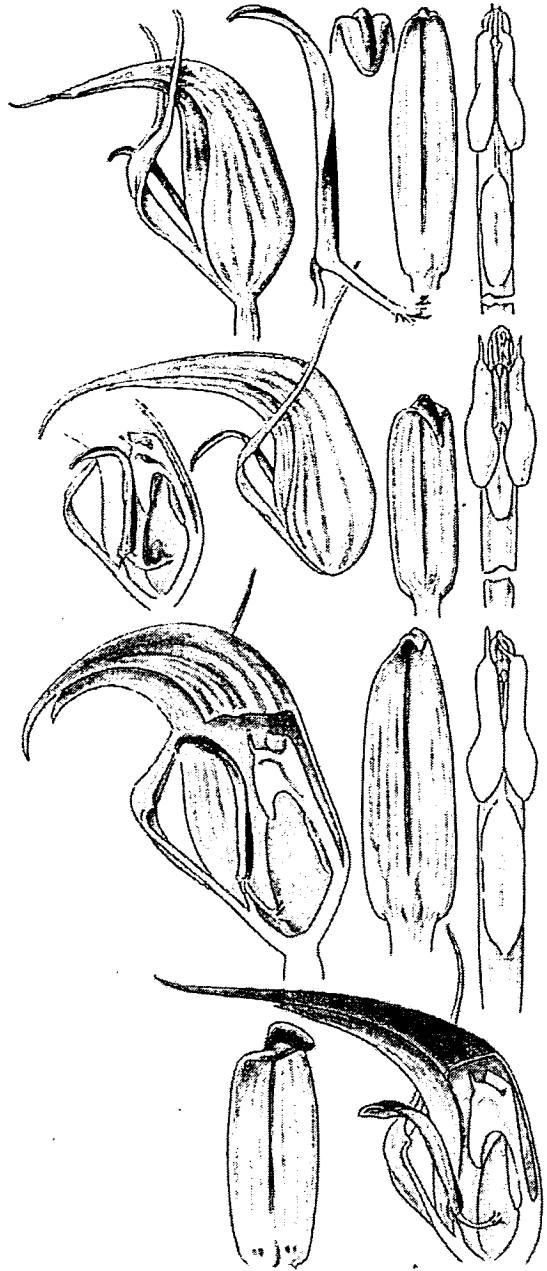
Structures can vary greatly and often are inconsistent within a colony. Examples are shown here.

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

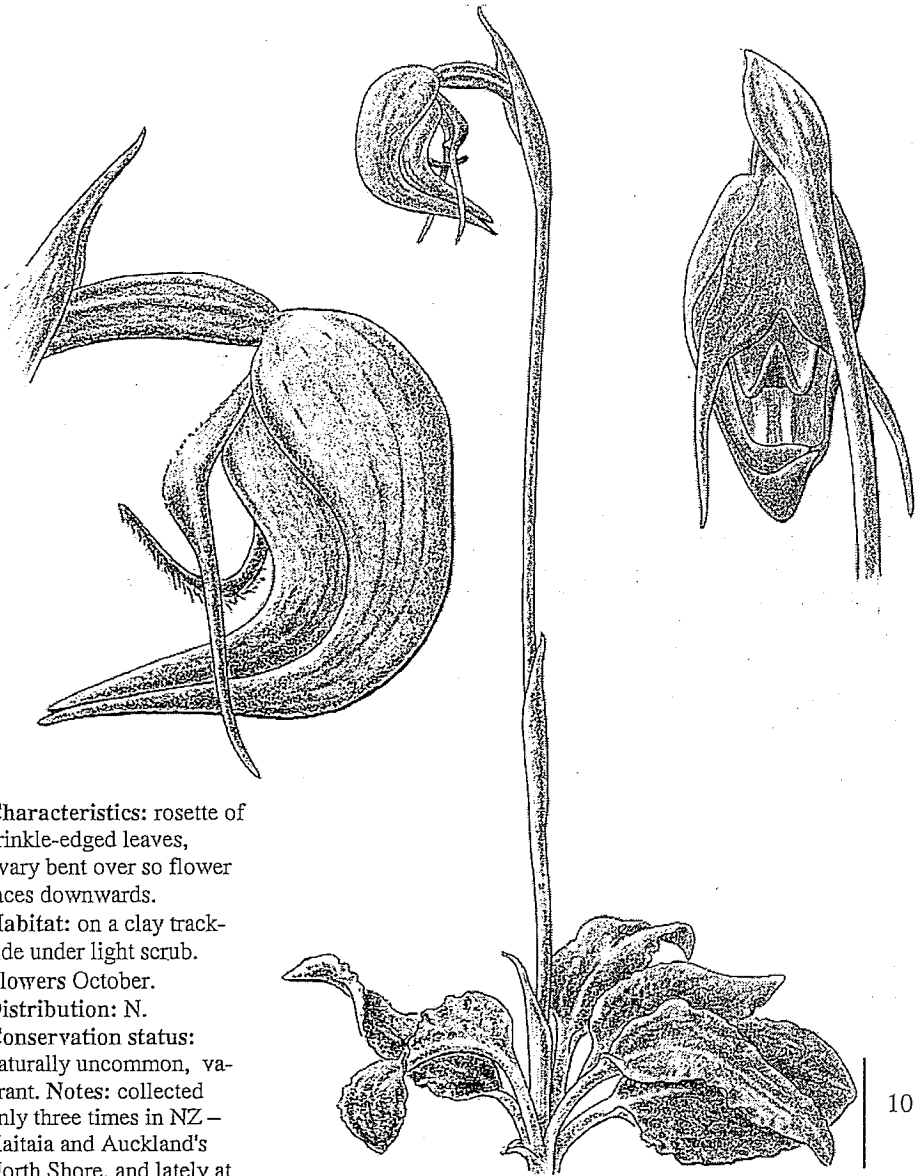
A flower from Central Volcanic Plateau with longer sepals & very long labellum abruptly downcurved, the apex very tapered. The stigma is much higher on the column than usual.

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 track-side under light scrub.

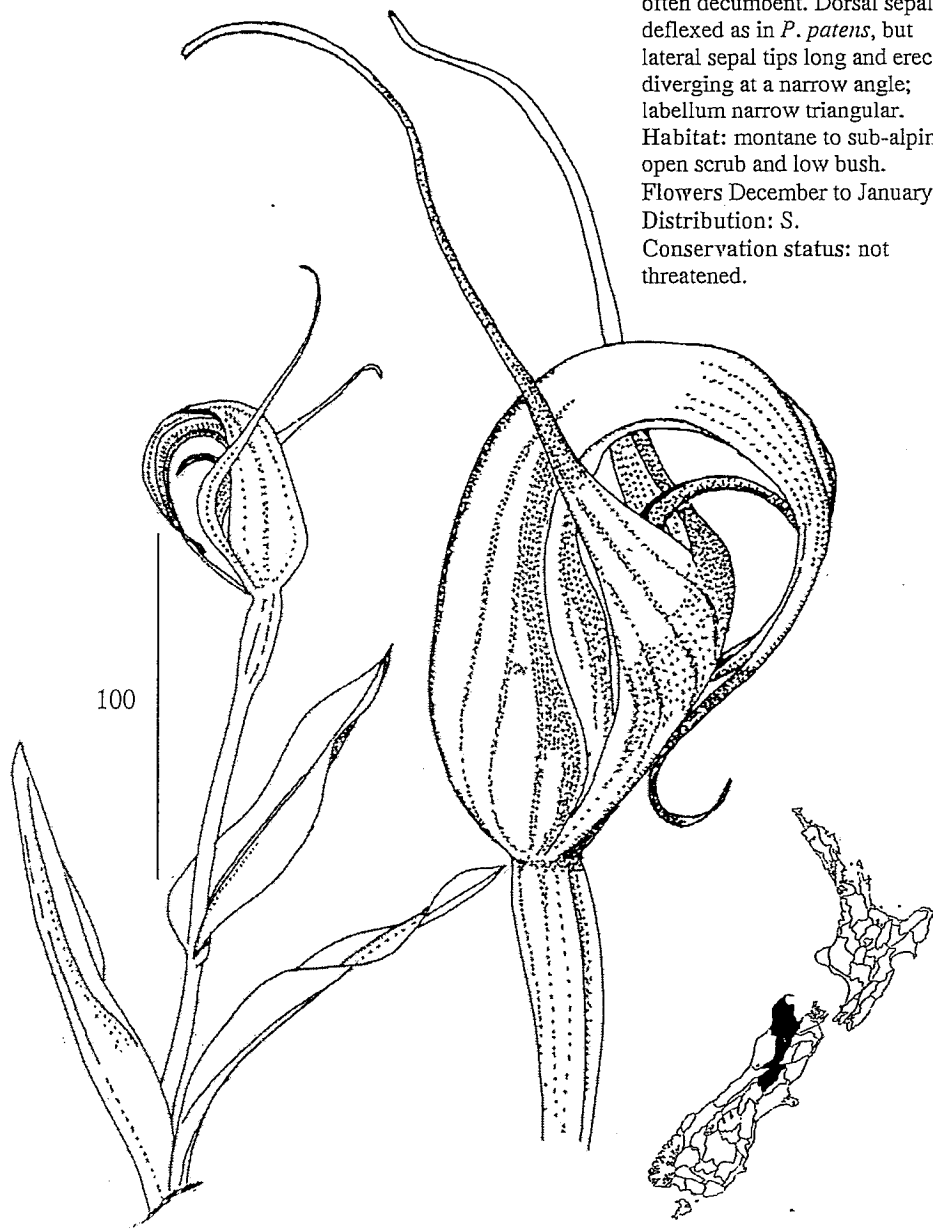
Flowers October.

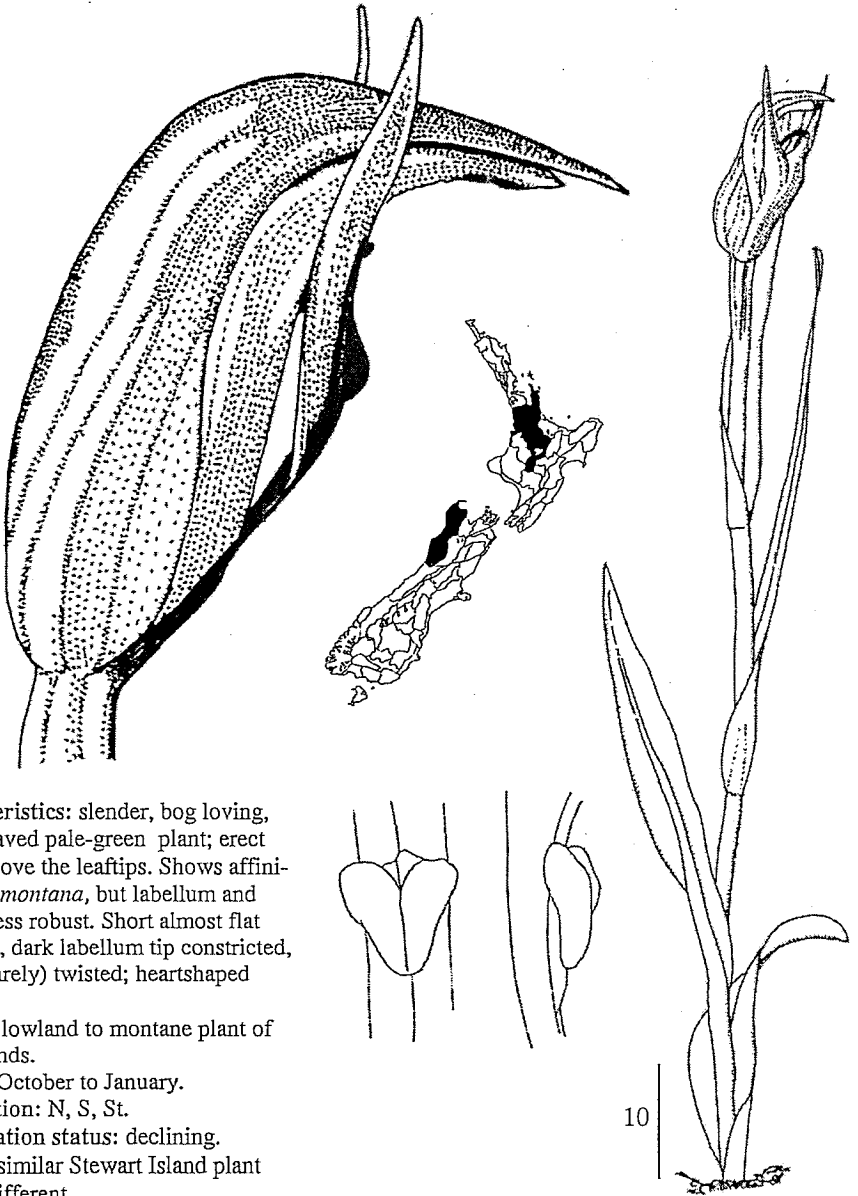
Distribution: N.

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 TNZI 26:270 (1894)

Characteristics: flower stem often decumbent. Dorsal sepal deflexed as in *P. patens*, but lateral sepal tips long and erect, diverging at a narrow angle; labellum narrow triangular. Habitat: montane to sub-alpine open scrub and low bush. Flowers December to January. Distribution: S. Conservation status: not threatened.





Characteristics: slender, bog loving, grassy leaved pale-green plant; erect flower above the leaf tips. 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.

Notes: a similar Stewart Island plant may be different



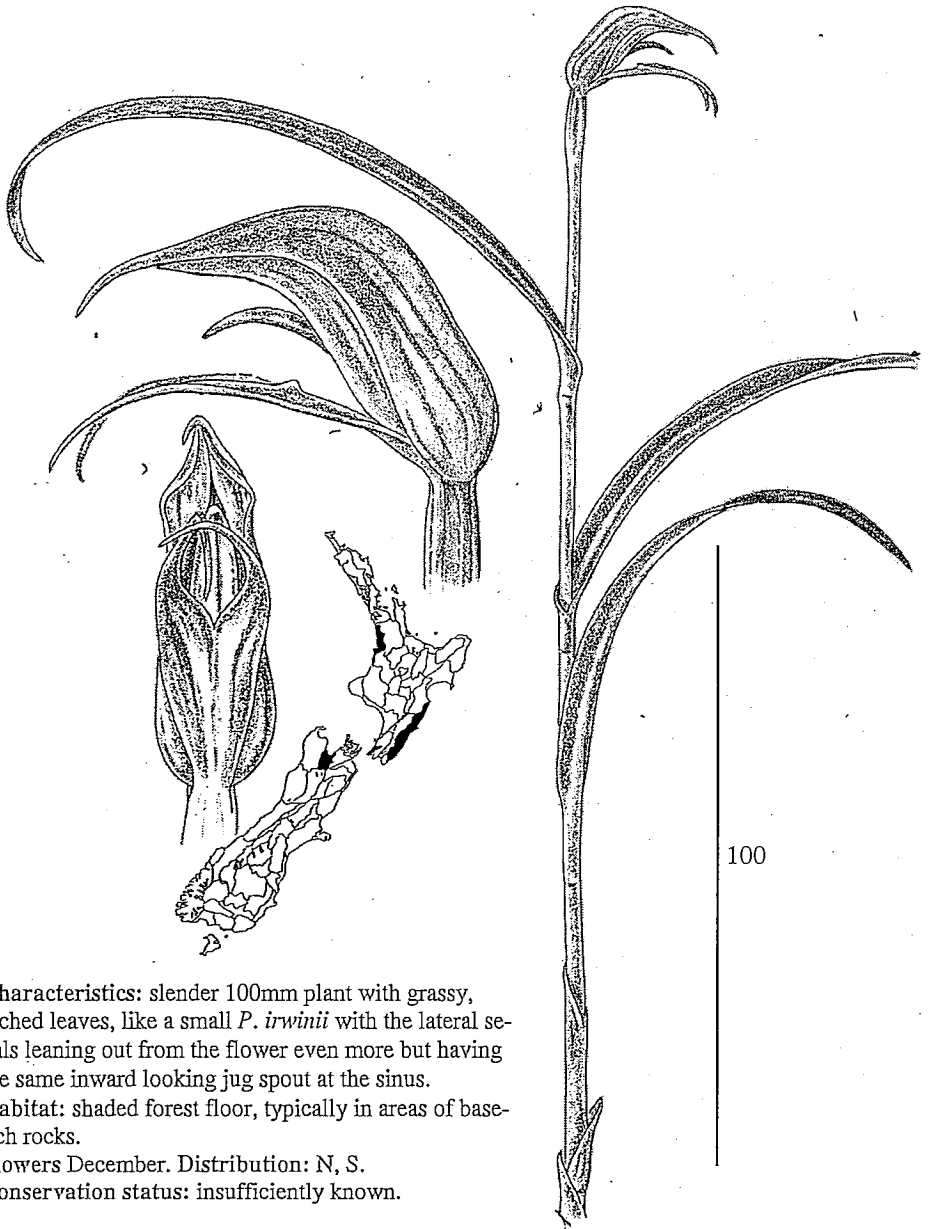
Pterostylis patens Colenso *TNZI* 18:270 (1886)

Characteristics: wide grassy leaves, similar to those of *P. banksii*. At maturity the lateral sepal tips are turned back and down, sometimes meeting behind the ovary.

Habitat: grows in a range of upland sites.

Flowers December to January.

Distribution: N. Conservation status: not threatened.



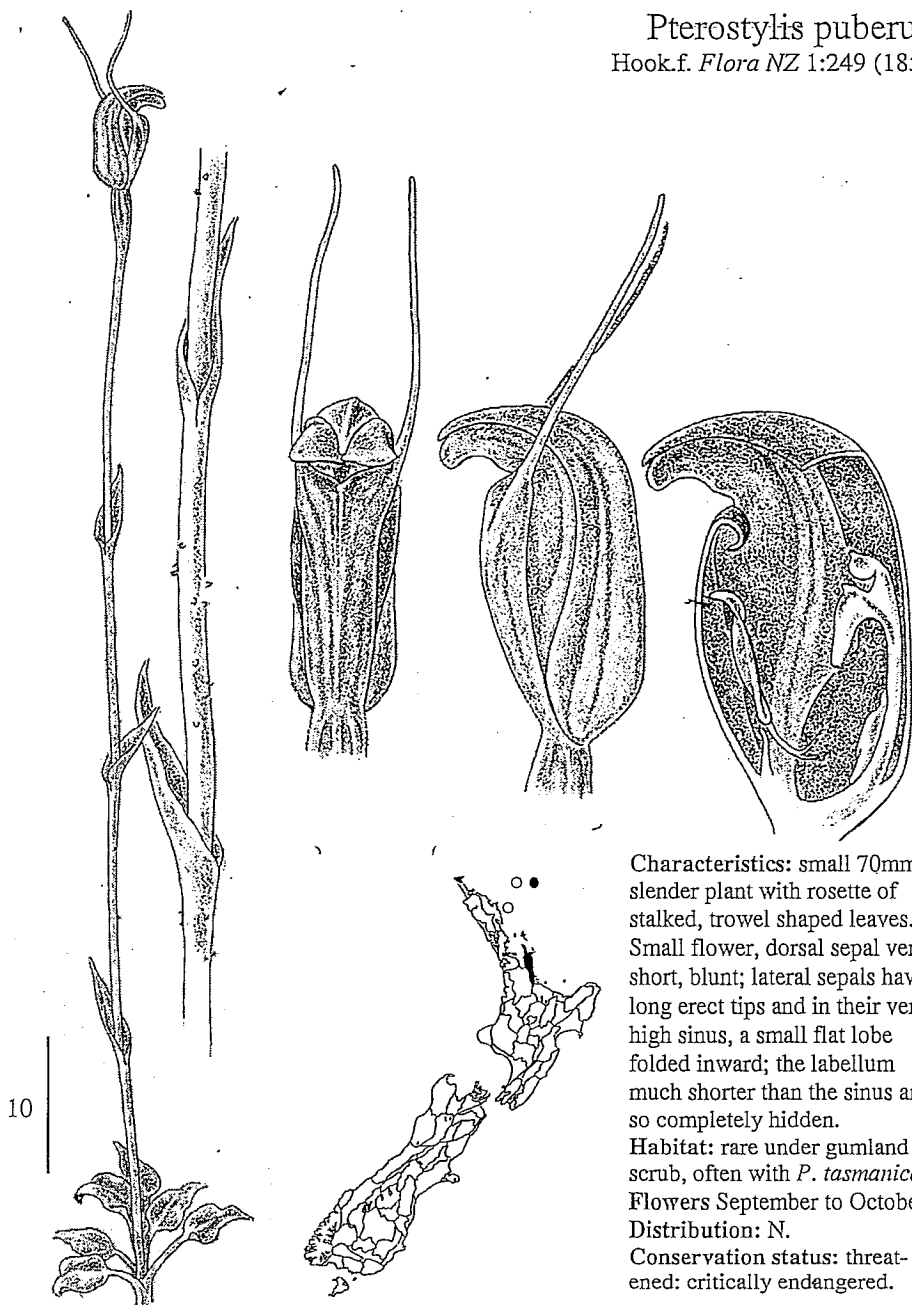
Characteristics: slender 100mm plant with grassy, arched leaves, like a small *P. irwinii* with the lateral sepals leaning out from the flower even more but having the same inward looking jug spout at the sinus.

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

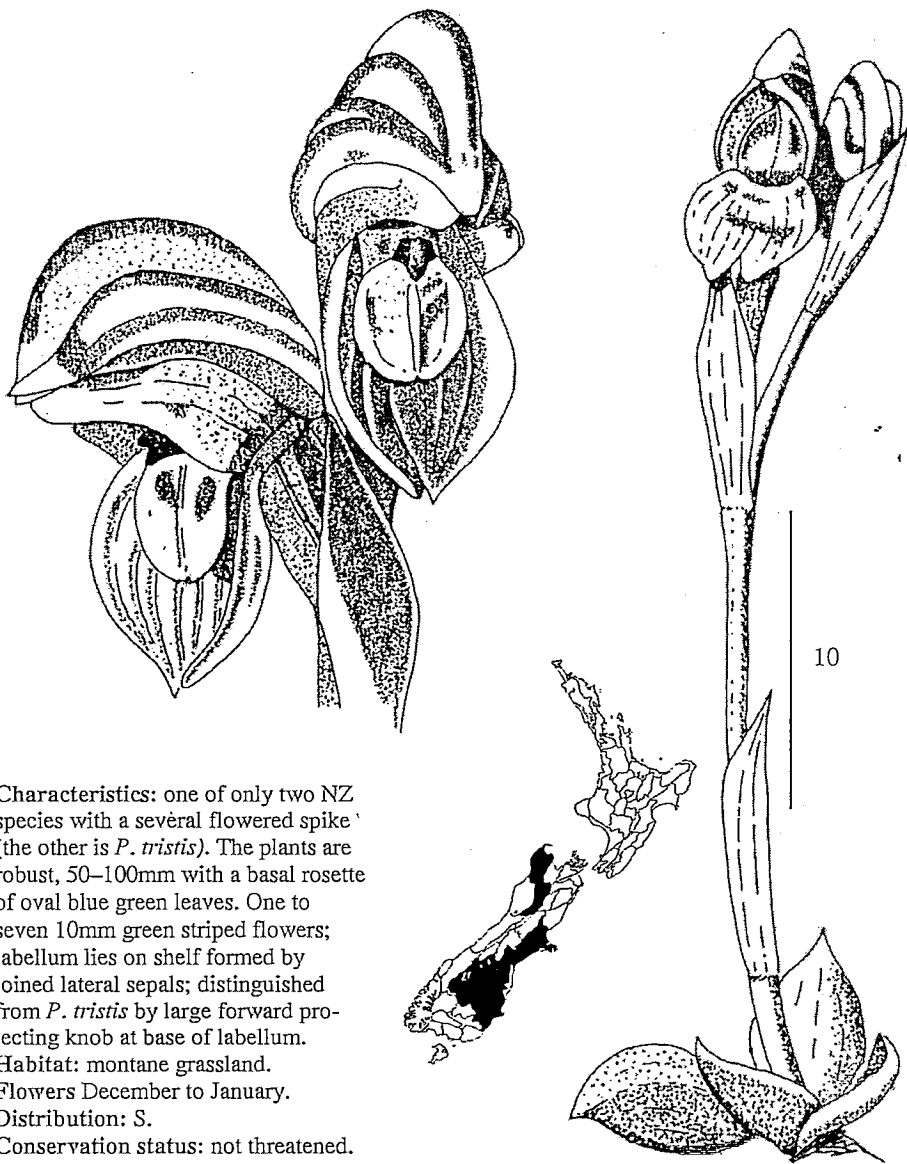
Flowers December. Distribution: N, S.

Conservation status: insufficiently known.

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

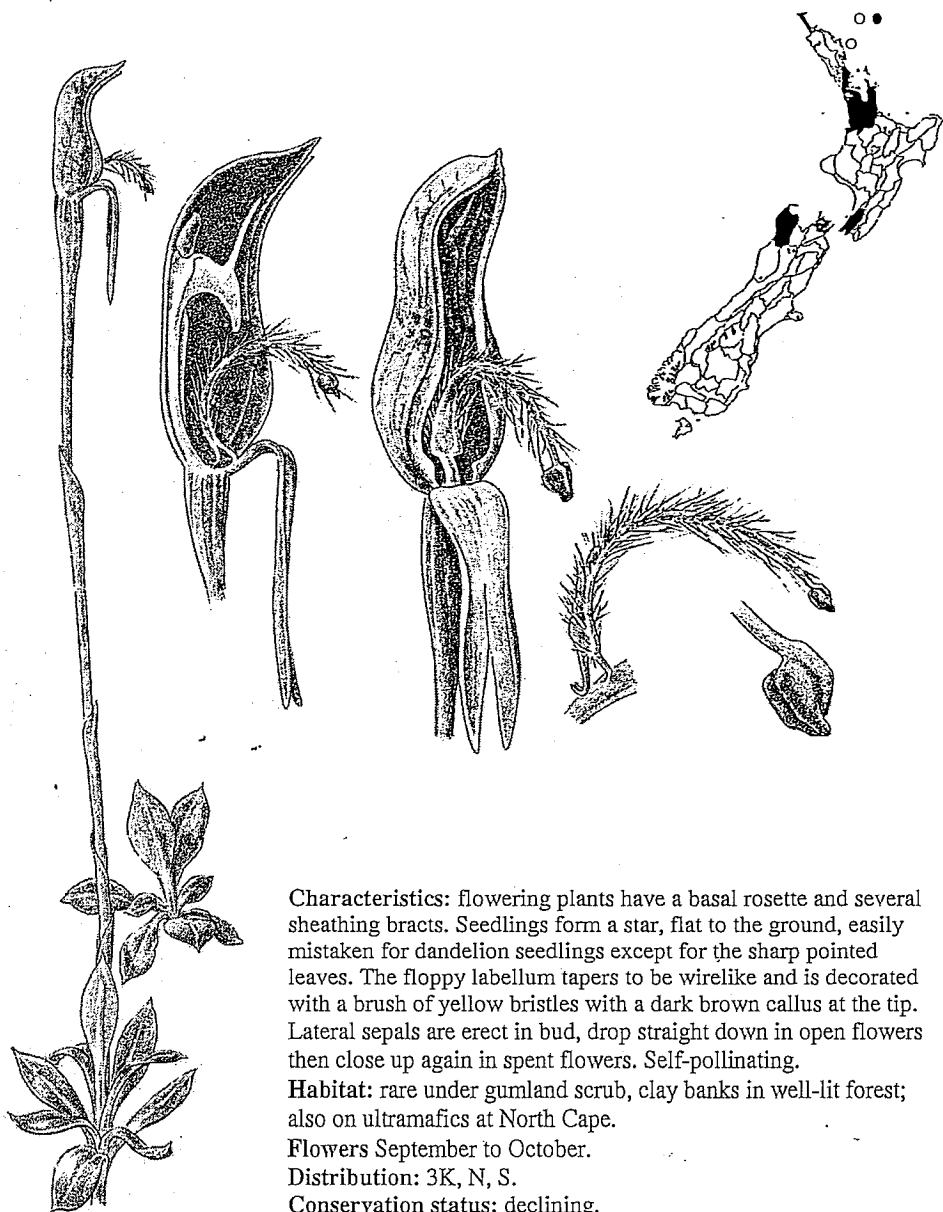


Characteristics: small 70mm slender plant with rosette of stalked, trowel shaped leaves. Small flower, dorsal sepal very short, blunt; lateral sepals have long erect tips and in their very high sinus, a small flat lobe folded inward; the labellum much shorter than the sinus and so completely hidden. Habitat: rare under gumland scrub, often with *P. tasmanica*. Flowers September to October. Distribution: N. Conservation status: threatened: critically endangered.



Characteristics: one of only two NZ species with a several flowered spike (the other is *P. tristis*). The plants are robust, 50–100mm 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 forward projecting knob at base of labellum. Habitat: montane grassland. Flowers December to January. Distribution: S. Conservation status: not threatened.

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



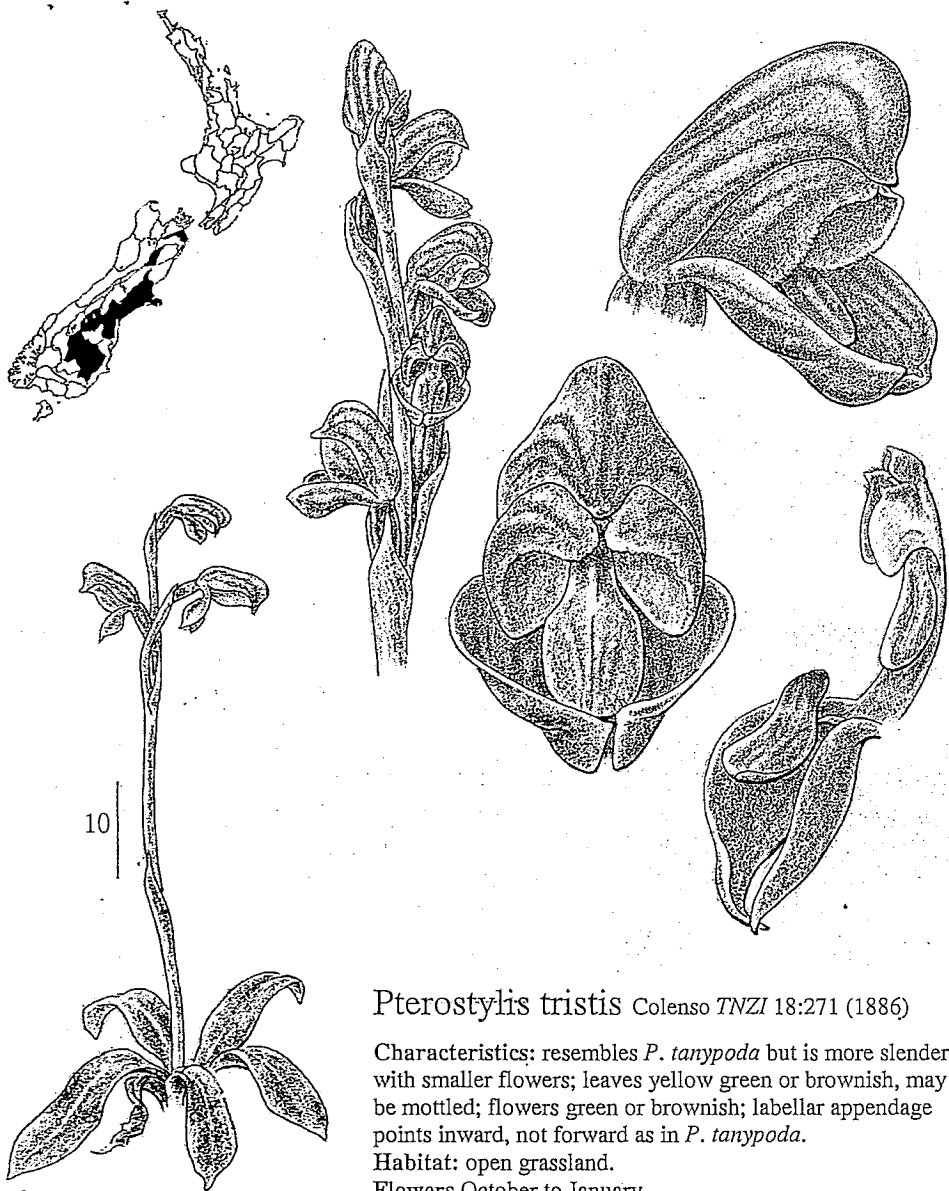
Characteristics: flowering plants have a basal rosette and several sheathing bracts. Seedlings form a star, flat to the ground, easily mistaken for dandelion seedlings except for the sharp pointed leaves. The floppy labellum tapers to be wirelike and is decorated with a brush of yellow bristles with 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: rare under gumland scrub, clay banks in well-lit forest; also on ultramafics at North Cape.

Flowers September to October.

Distribution: 3K, N, S.

Conservation status: declining.



Pterostylis tristis Colenso *TNZI* 18:271 (1886)

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 forward as in *P. tanyпода*.

Habitat: open grassland.

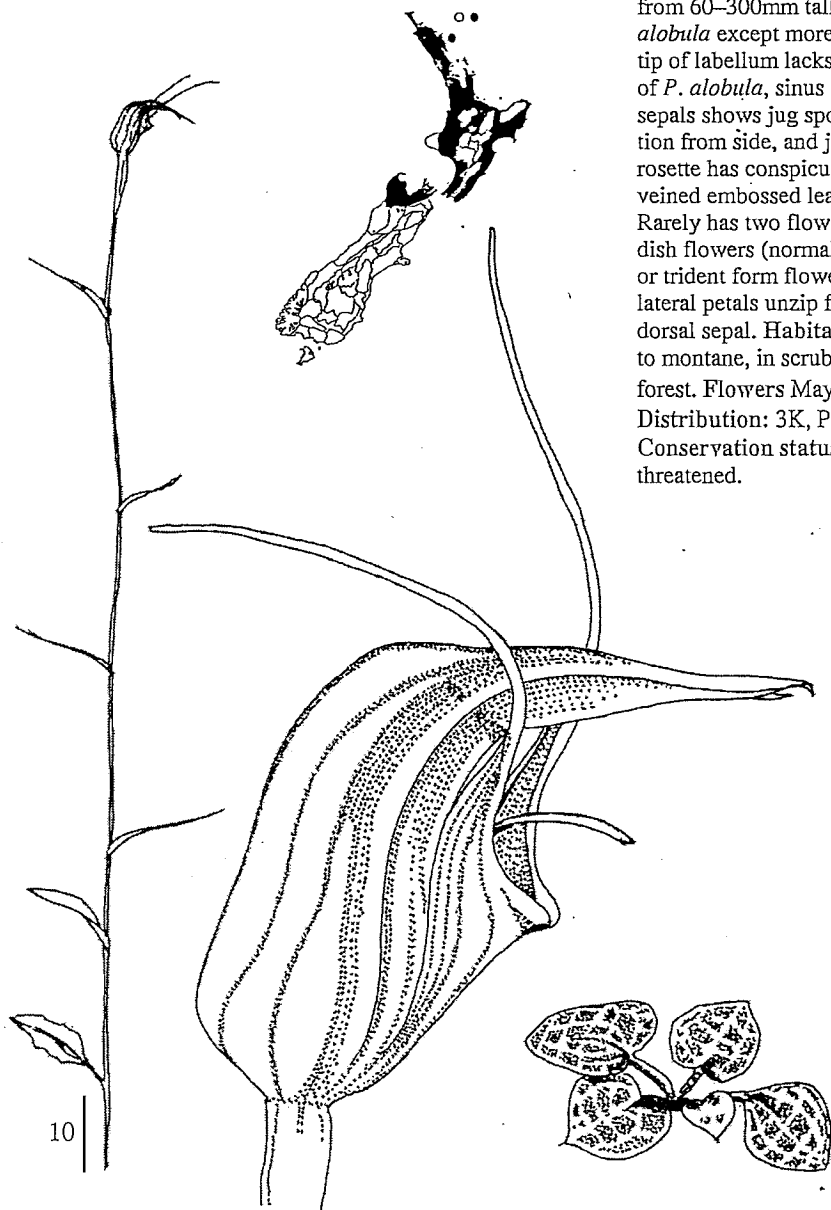
Flowers October to January.

Distribution: S.

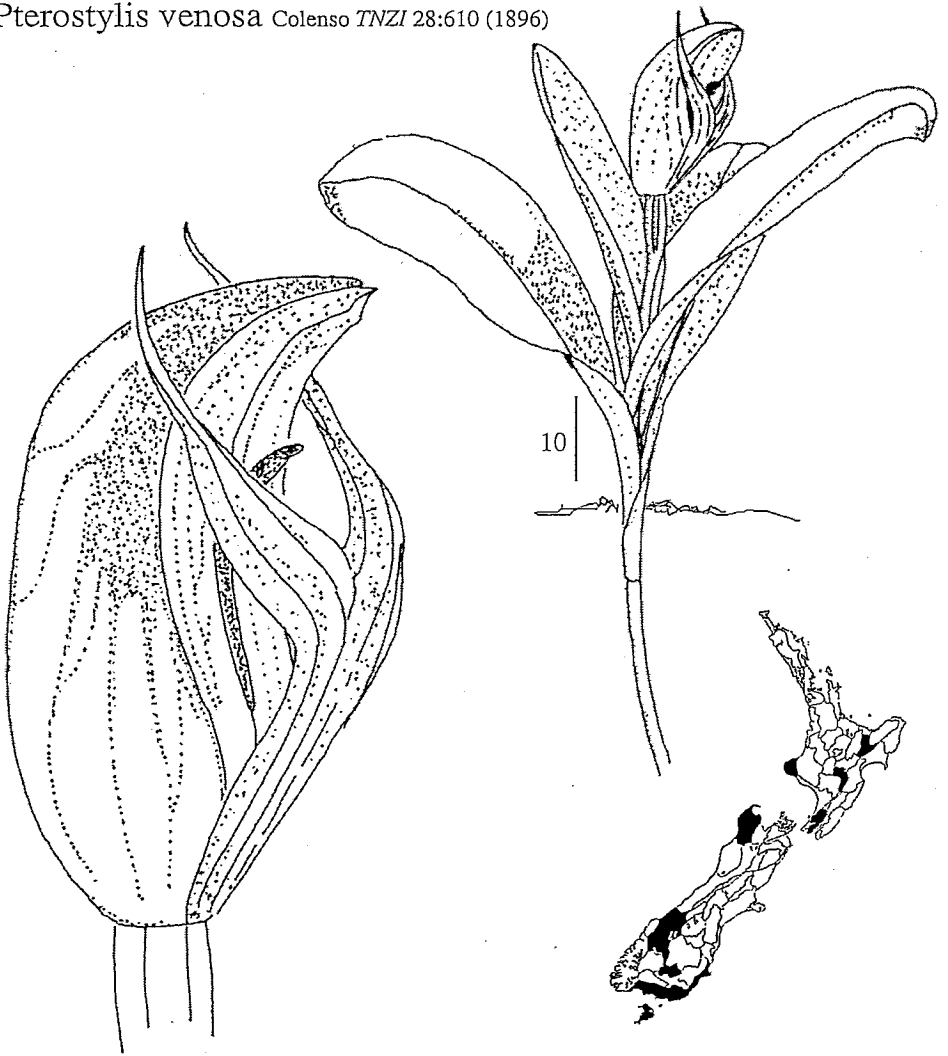
Conservation status: not threatened.

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

Characteristics: stems vary from 60–300mm tall. As for *P. alobula* except more slender, 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. Rarely has two flowers, or reddish flowers (normally green) or trident form flower where lateral petals unzip from the dorsal sepal. Habitat: lowland to montane, in scrub and native forest. Flowers May–October. Distribution: 3K, PK, N, S. Conservation status: not threatened.



Pterostylis venosa Colenso *TNZI* 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 tapering brownish labellum is narrower, and the stigma is narrow, not upturned.

Habitat: mossy forest in high rainfall montane sites.

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

Conservation status: not threatened.

Spiranthes novae-zelandiae Hook.f. *Flora NZ* 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*. We are not sufficiently familiar with these to elaborate the differences.



Thelymitra aemula Cheeseman *TNZI* 51:94 (1919)

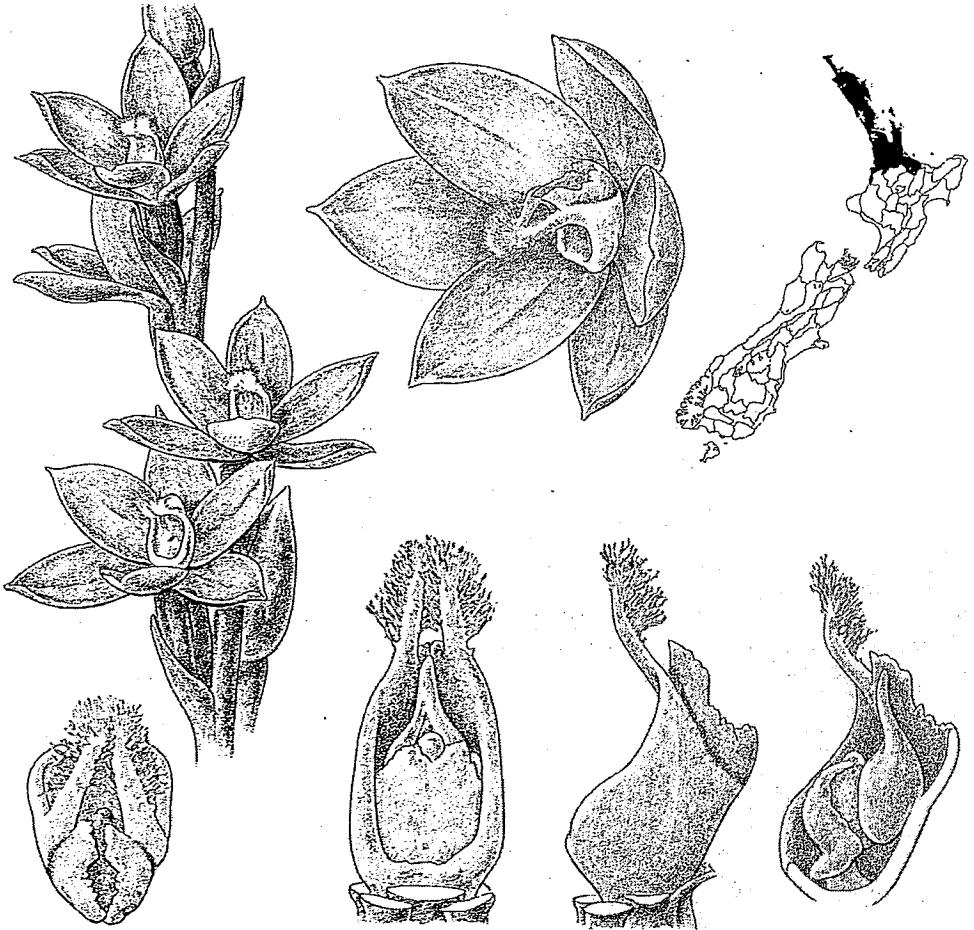
Characteristics: slender to robust plant, thick ridged leaf, robust stem, 3–10 flowers. Flowers plain deep blue, opening on hot muggy days. Column palest violet with a narrow violet band underlying the bright yellow top; consisting of a nonhooded post-anther lobe with toothed margins and forward pointing side lobules less prominent than on *T. aff. ixioides*. Thin white cilia tufts on long, upcurved column arms.

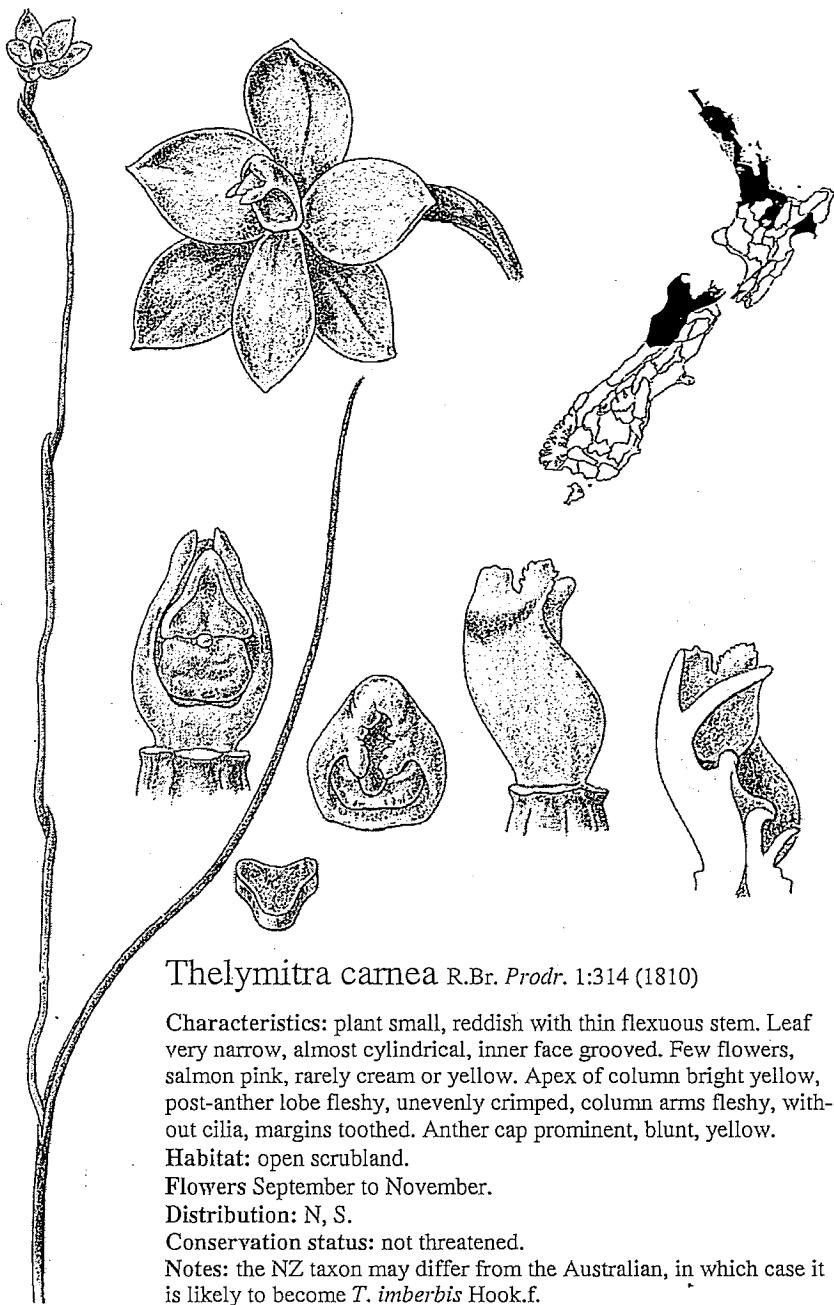
Habitat: damp or dry ground in open kauri and gumland scrub.

Flowers October to December.

Distribution: N.

Conservation status: not threatened.





100

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.

Notes: the NZ taxon may differ from the Australian, in which case it is likely to become *T. imberbis* Hook.f.

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

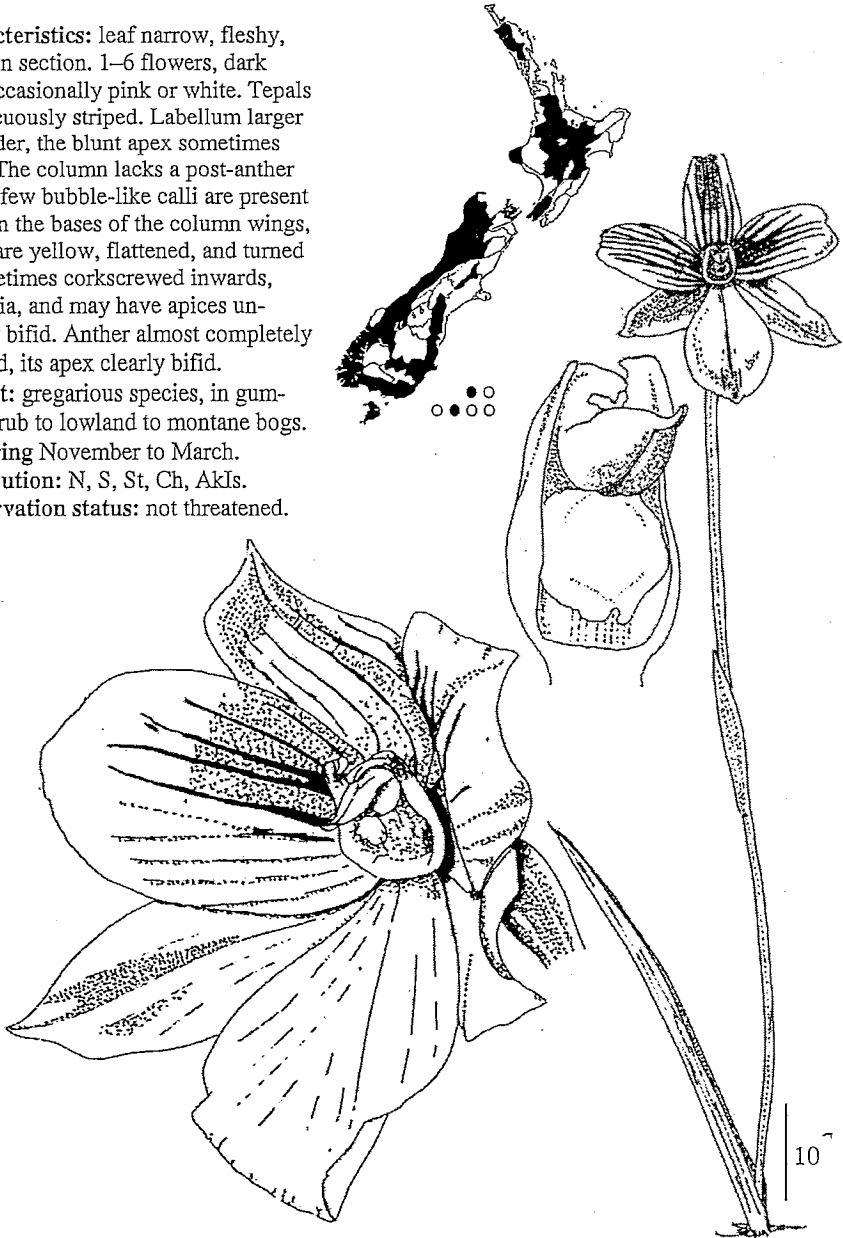
Characteristics: leaf narrow, fleshy, trefoil in section. 1–6 flowers, dark blue, occasionally pink or white. Tepals conspicuously striped. Labellum larger and wider, the blunt apex sometimes wavy. The column lacks a post-anther lobe; a few bubble-like calli are present between the bases of the column wings, which are yellow, flattened, and turned or sometimes corkscrewed inwards, lack cilia, and may have apices unequally bifid. Anther almost completely exposed, its apex clearly bifid.

Habitat: gregarious species, in gum-land scrub to lowland to montane bogs.

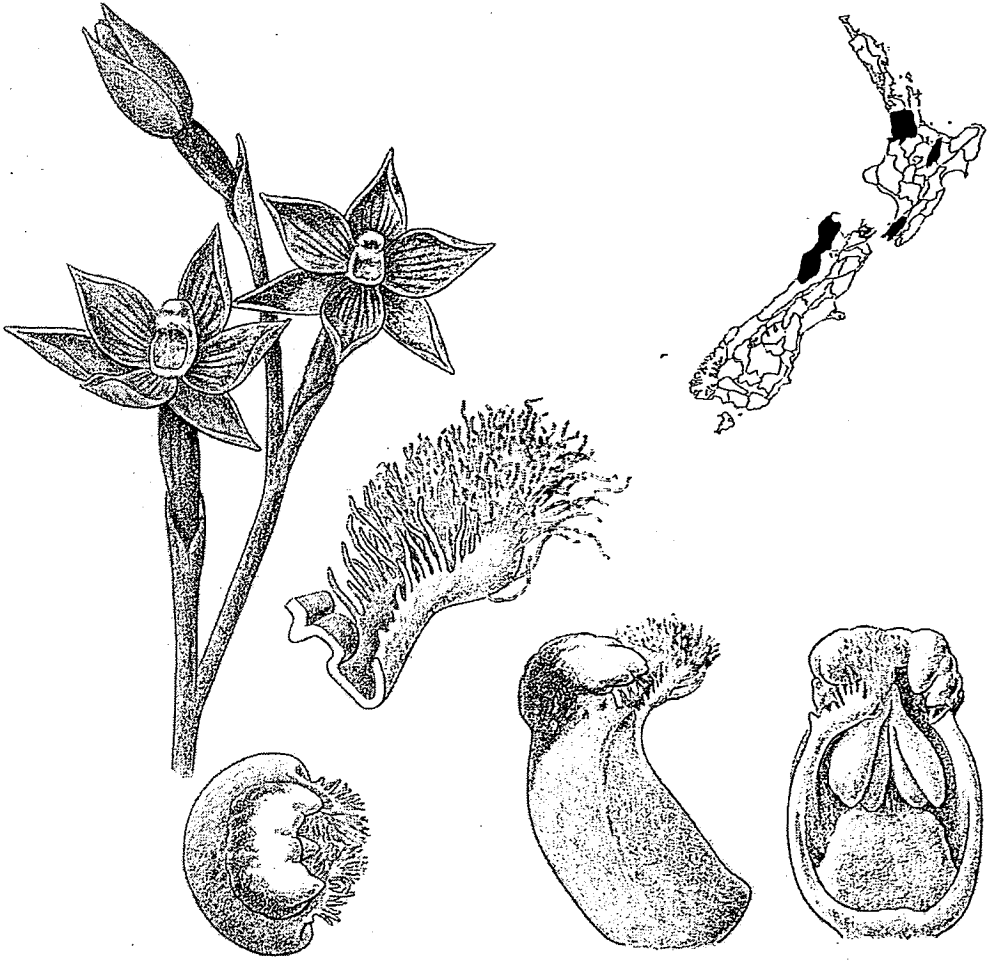
Flowering November to March.

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

Conservation status: not threatened.



Thelymitra xdentata L.B.Moore NZJB 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 tooth-like 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 *TNZI* 16:338 (1884)



Characteristics: robust tall plant with wide fleshy upright sheathing leaf. Up to twelve 15mm flowers, blue or mauve with usually long rather narrow tepals. Column usually deeply cleft at back; post-anther lobe not as tall as anther, or even absent; side lobules taller than anther, violet/red, fleshy, with erect toothed margins; erect column arms reddish, with yellow or orange, coarse, occasionally branched cilia.

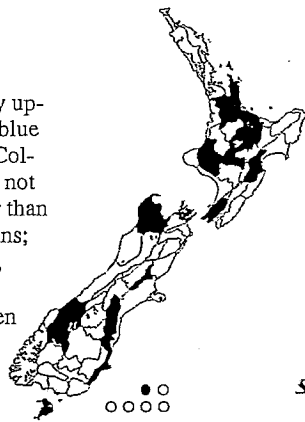
Habitat: lowland to montane wetlands, scrub, open forest.

Flowers November to February.

Distribution: N, S, St, Ch.

Conservation status: not threatened.

Notes: column prone to malformation, with triangular lobe in front.



Thelymitra hatchii L.B.Moore NZJB 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.

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

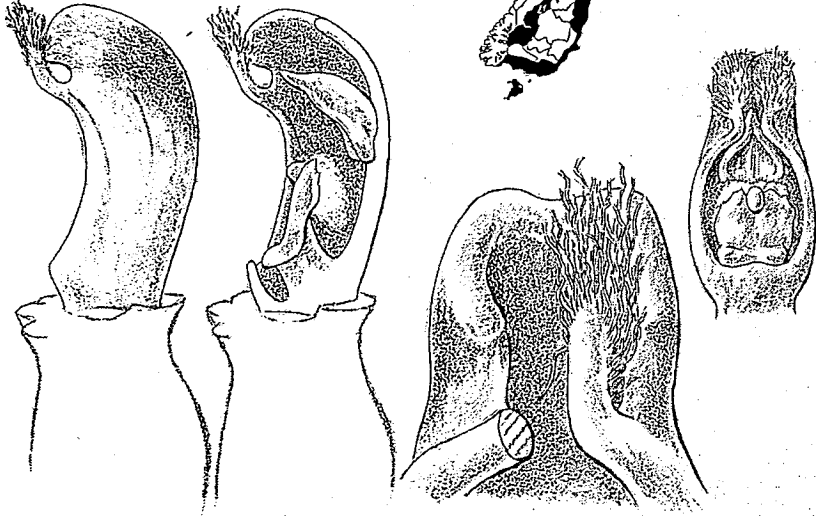
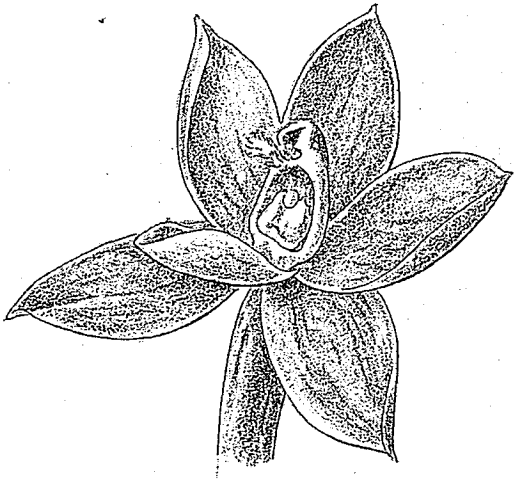
Flowers November to February.

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



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 (sometimes bluish) flowers. Upper column bronze/brown, occasionally red, the apex blunt (not intumed 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.

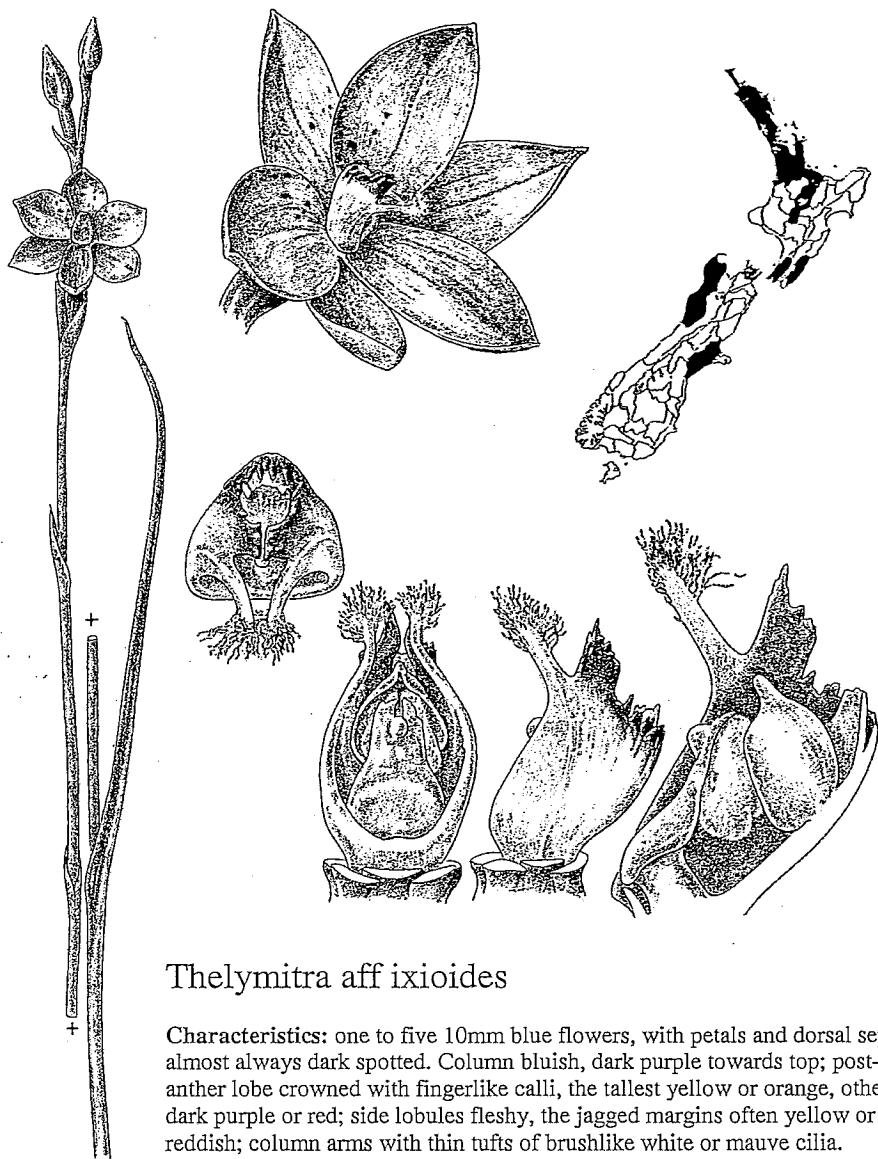
Habitat: Lowland to montane, the typical *Thelymitra* of the northern offshore islands, common in peatbogs, gumland scrub and clay banks, forests and cities.

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

Distribution: 3K, N, S, St.

Conservation status: not threatened.

Notes: this has been included in *T. pauciflora s.l.*



Thelymitra aff ixioides

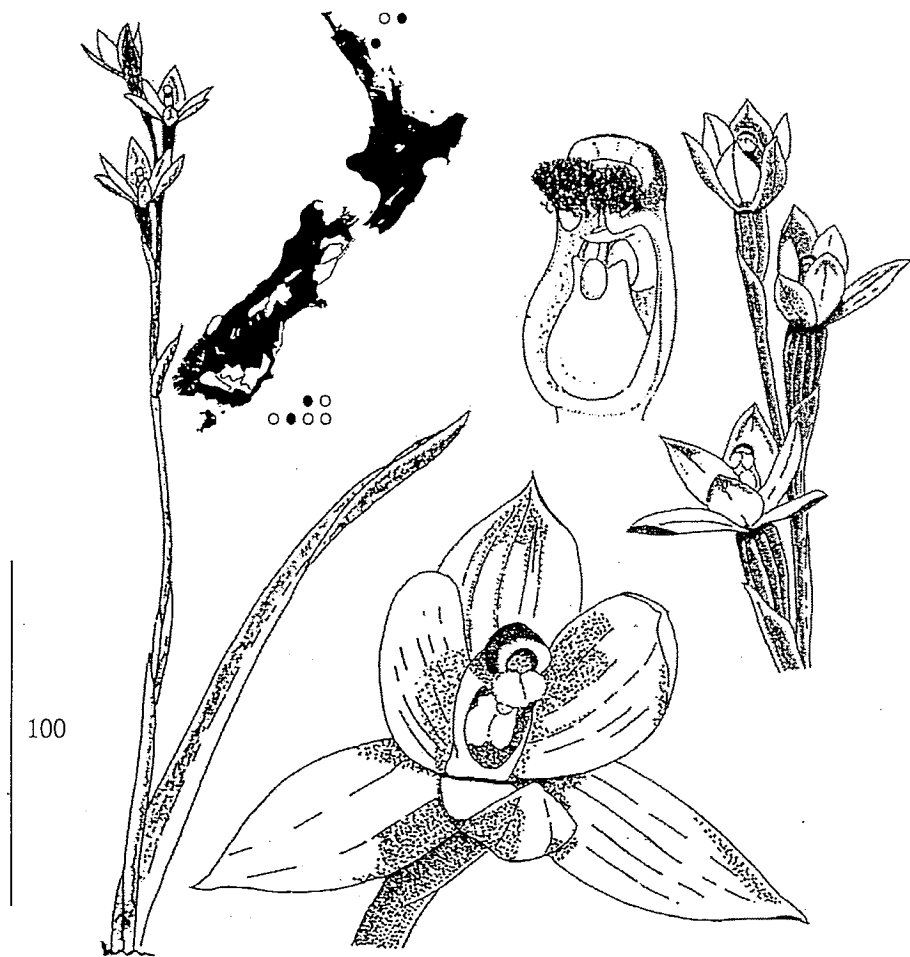
Characteristics: one to five 10mm blue flowers, with petals and dorsal sepal almost always dark spotted. Column bluish, dark purple towards top; post-anther lobe crowned with fingerlike calli, the tallest yellow or orange, others dark purple or red; side lobules fleshy, the jagged margins often yellow or reddish; column arms with thin tufts of brushlike white or mauve cilia.

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.



Characteristics: mature plants with broad, ribbed, very long, often reddish 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, AKIs.

Conservation status: not threatened.

Notes: varies considerably; not perfumed (as opposed to the *T. aff. longifolia* group), self pollinated with only 1 or 2 flowers opening on hot days.

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.

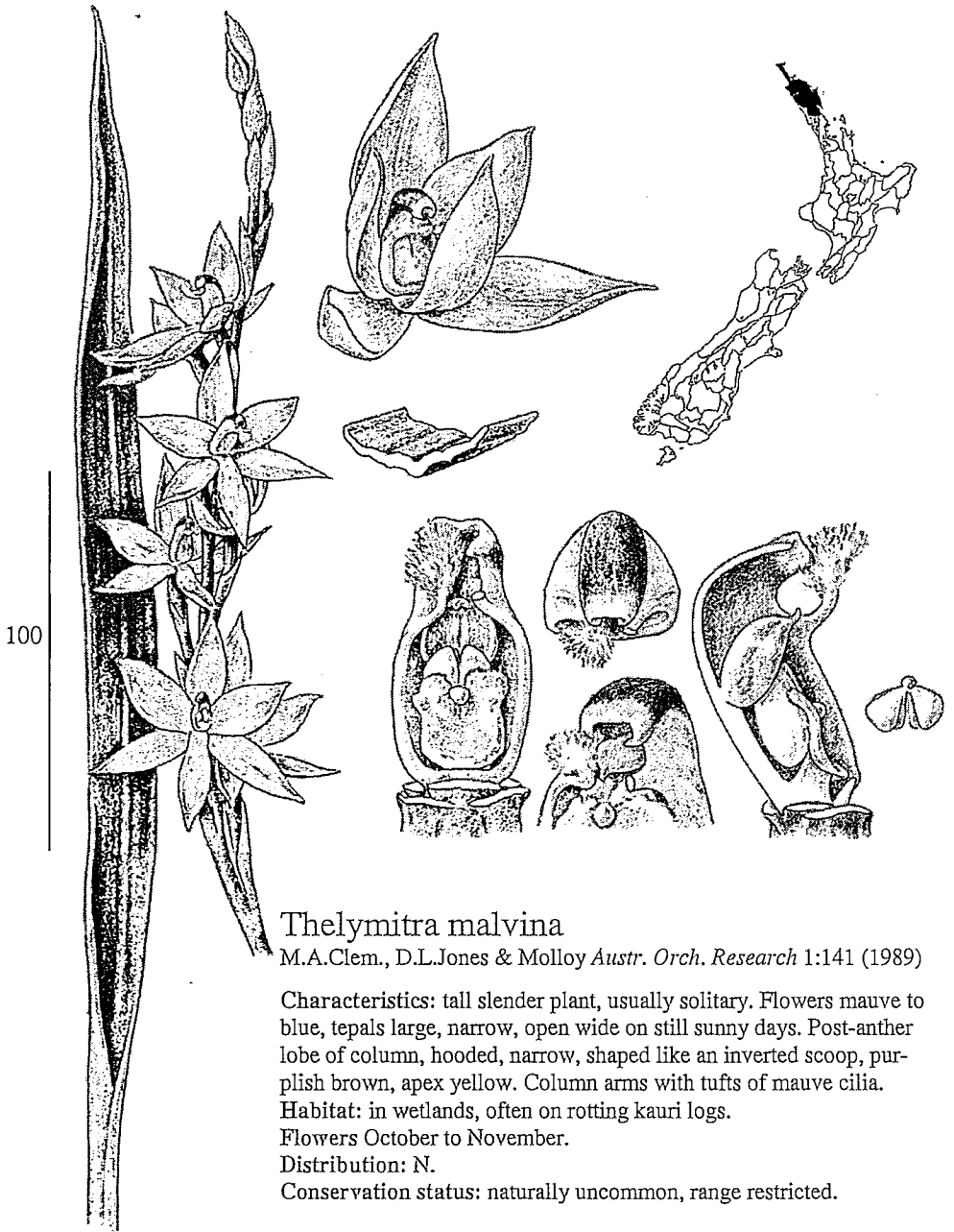
Habitat: warm sunny open spots, in light scrub.

Flowering October to December.

Distribution: N.

Notes: native bees have been seen removing pollinia. Some have pale blue shades, and various column structures exist. Some may be referable to the *T. alba*, *T. cornuta*, *T. nemoralis* or *T. purpureo-fusca* of Colenso.





Thelymitra malvina

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

Characteristics: tall slender plant, usually solitary. Flowers mauve to blue, tepals large, narrow, open wide on still sunny days. Post-anther lobe of column, hooded, narrow, shaped like an inverted scoop, purplish brown, apex yellow. Column arms with tufts of mauve cilia.

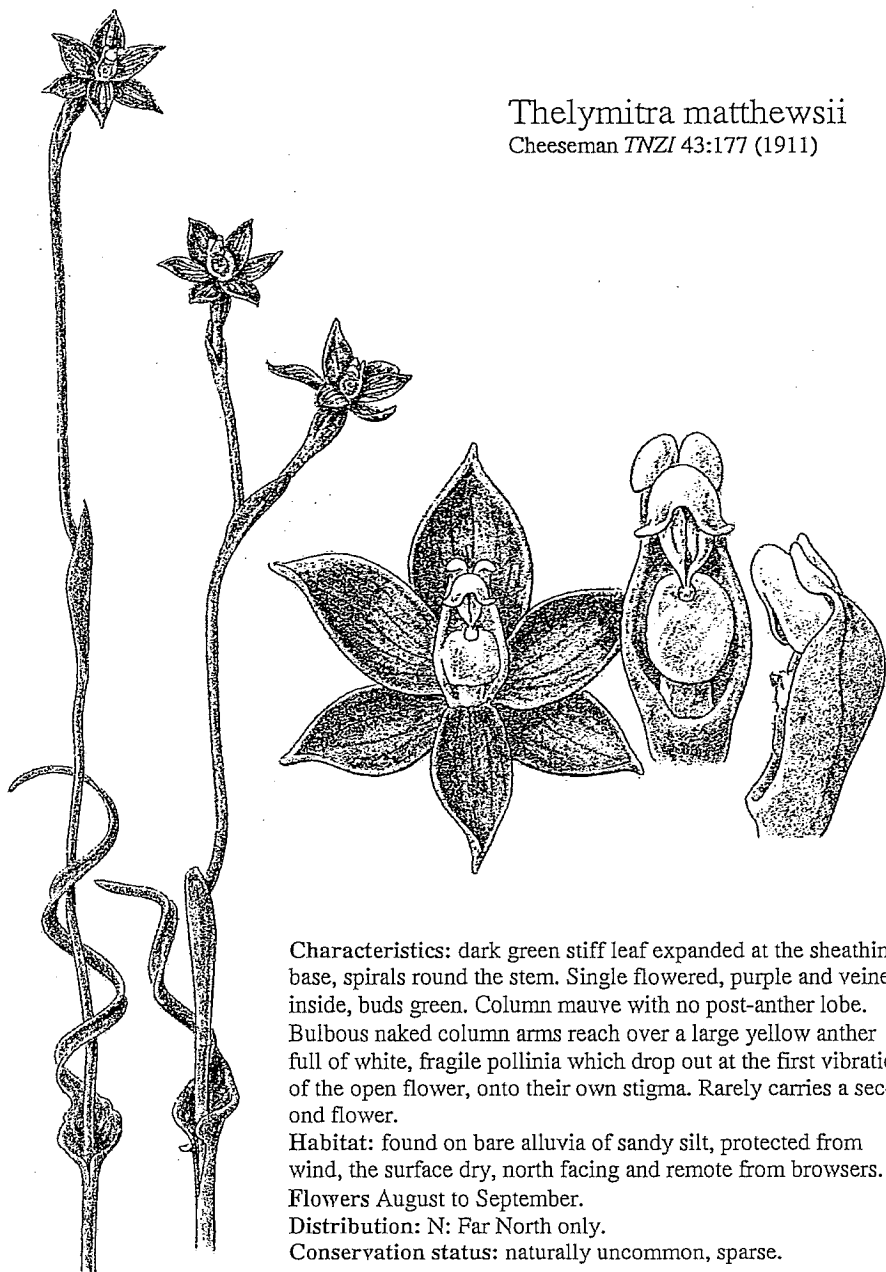
Habitat: in wetlands, often on rotting kauri logs.

Flowers October to November.

Distribution: N.

Conservation status: naturally uncommon, range restricted.

Thelymitra matthewsii
Cheeseman *TNZI* 43:177 (1911)



Characteristics: dark green stiff leaf expanded at the sheathing base, spirals round the stem. Single flowered, purple and veined inside, buds green. Column mauve with no post-anther lobe. Bulbous naked column arms reach over a large yellow anther full of white, fragile pollinia which drop out at the first vibration of the open flower, onto their own stigma. Rarely carries a second flower.

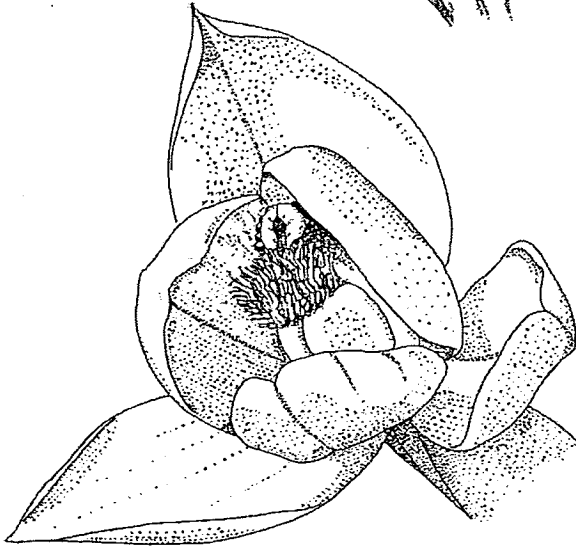
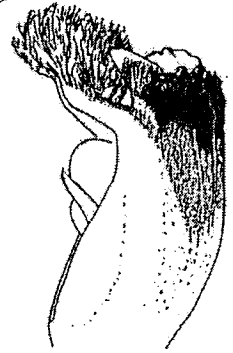
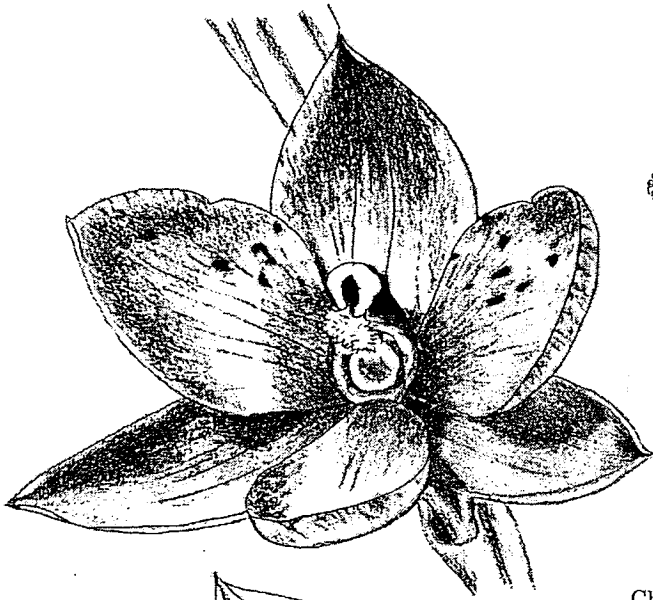
Habitat: found on bare alluvia of sandy silt, protected from wind, the surface dry, north facing and remote from browsers.

Flowers August to September.

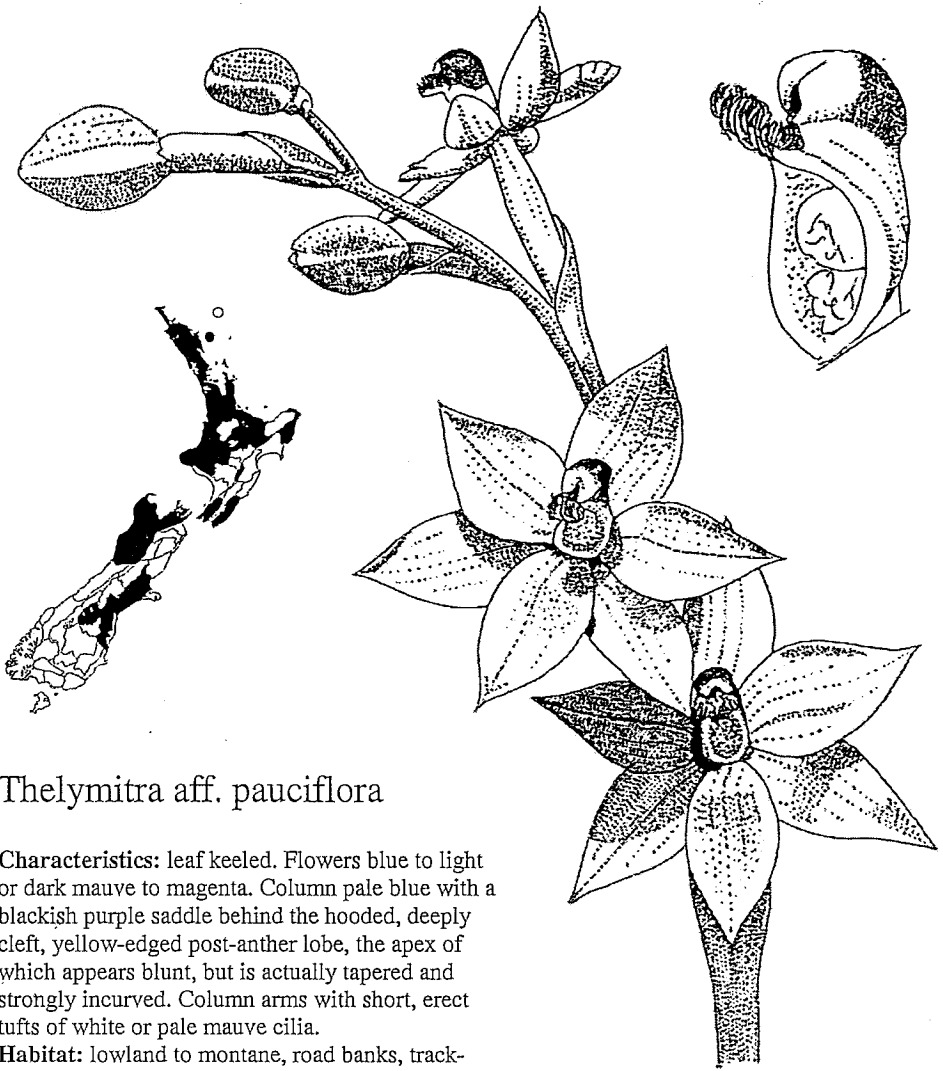
Distribution: N: Far North only.

Conservation status: naturally uncommon, sparse.

Thelymitra nervosa Colenso *TNZI* 20: 207 (1888)



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 brown on the hooded post-anther lobe, usually with a horseshoe of bright yellow around the opening. **Habitat:** dappled or full sun; scrub or forest margins. **Flowers** October to January. **Distribution:** N, S. **Conservation status:** not threatened.



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 cleft, 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 pale mauve cilia.

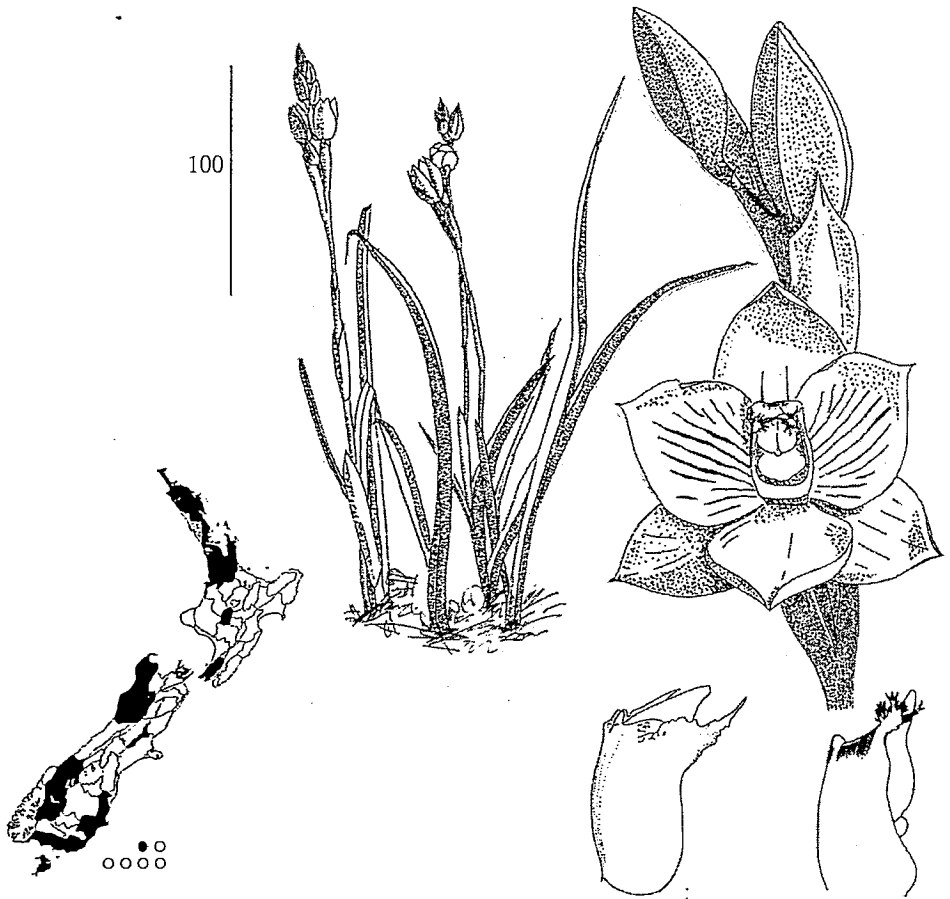
Habitat: lowland to montane, road banks, track-sides, drain edges or open scrub.

Flowering November to January.

Distribution: N, S.

Conservation status: not threatened.

Notes: the NZ plants we have been calling *T. pauciflora* probably are not the same as the Australian species. Several forms are included. Flowers showing a cleft extending to the back of the post-anther lobe resemble those of the Australian *T. holmesii*.



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

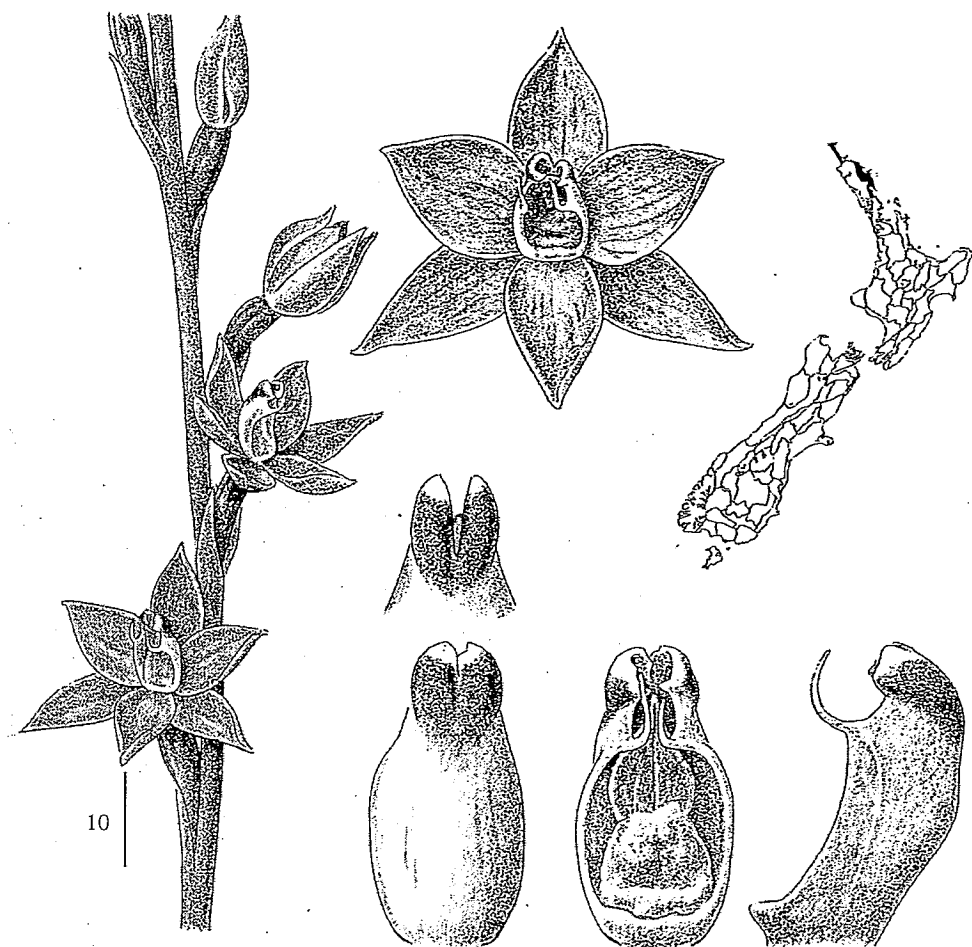
Characteristics: plants may be solitary or growing in clumps; wide, keeled leaf. Two to six 10mm heavily striped flowers, mostly blue, often pink/mauve, rarely white. In some the post-anther lobe is shorter than anther, and the column arms flat, pointed, toothed blades, quite lacking fimbria or cilia. In others the post-anther 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: we have decided to treat this as a single variable species, though in the past Cheeseman, Petrie and Colenso have assigned specific status to different forms (*T. fimbriata*, *T. caesia*, *T. concinna* and *T. pachyphylla*).



10

Thelymitra sanscilia Hatch *TRSNZ* 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.

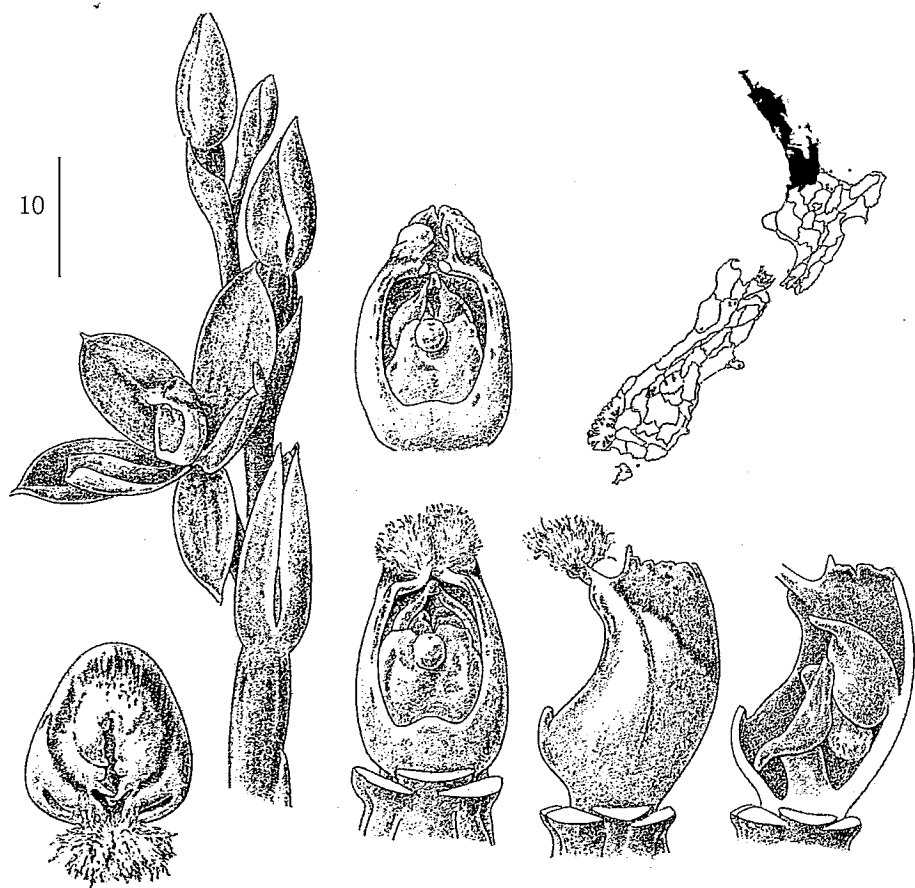
Habitat: lowland tea tree scrub on sunny tracksides.

Flowers October.

Distribution: N.

Conservation status: naturally uncommon, sparse.

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



Thelymitra tholiformis Molloy & Hatch NZJB 28:111 fl (1990)

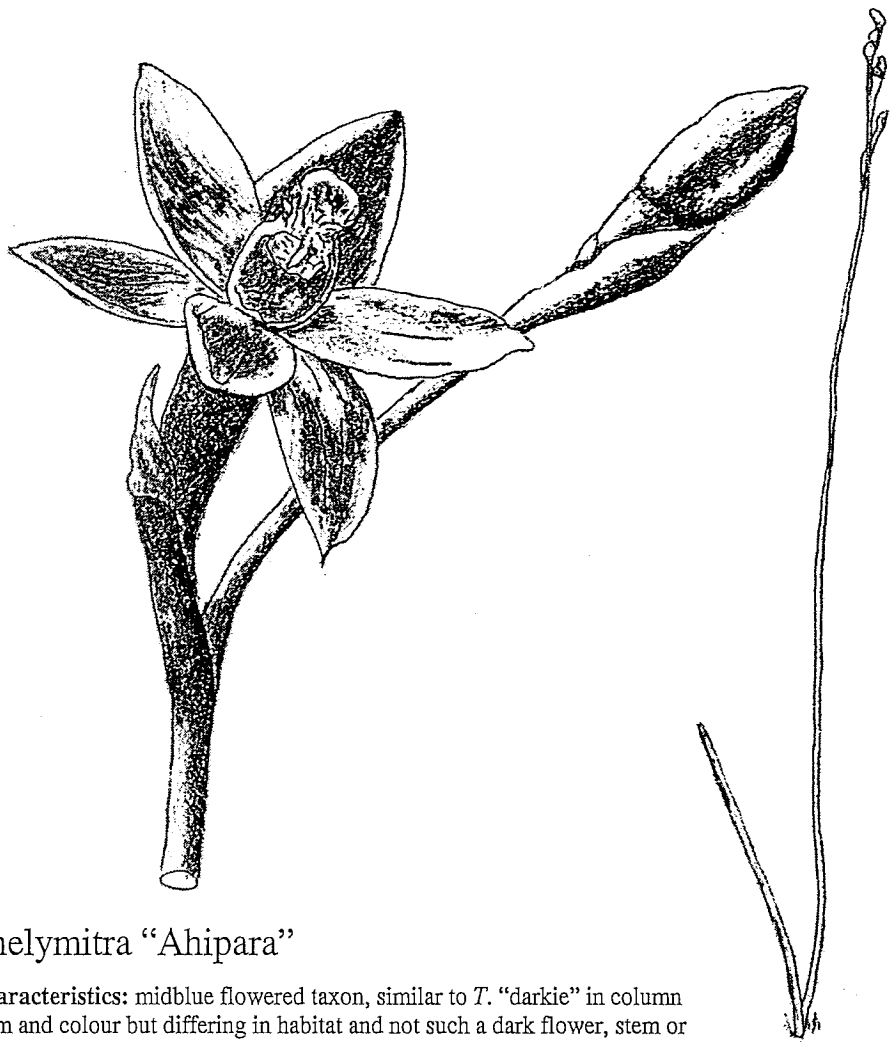
Characteristics: slender plant, straplike narrow concave leaf, slender blue green stem; 1–8 plain blue to mauve (often pale) flowers. Similar to *T. aemula* in colour, habitat, self pollination and shy flowering but differs in having a broader, almost closed, tall yellow, domed column top with obscurely 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"

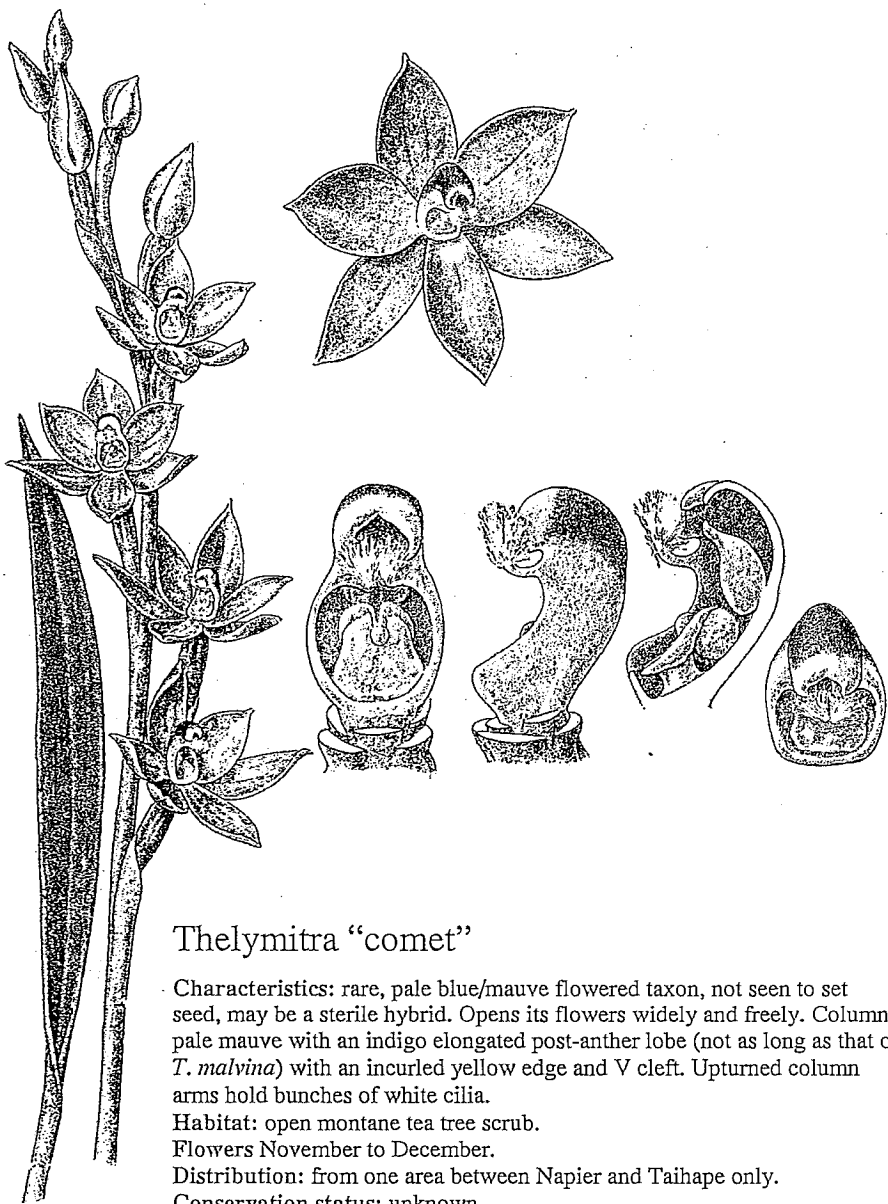
Characteristics: midblue flowered taxon, similar to *T.* "darkie" in column form and colour but differing in habitat and not such a dark flower, stem or leaf. The leaf is characteristic: bright green, fleshy, a flattened V like an ixia leaf. The flowers do not open—the buds expand a little, then wither as seed forms.

Habitat: wetland species thriving in black ooze.

Distribution: N: Far north only.

Flowers October to November.

Conservation status: taxonomically indeterminate, endangered.



Thelymitra "comet"

Characteristics: rare, pale blue/mauve flowered taxon, not seen to set seed, may be a sterile hybrid. Opens its flowers widely and freely. Column pale mauve with an indigo elongated post-anther lobe (not as long as that of *T. malvina*) with an incurled yellow edge and V cleft. Uprturned column arms hold bunches of white cilia.

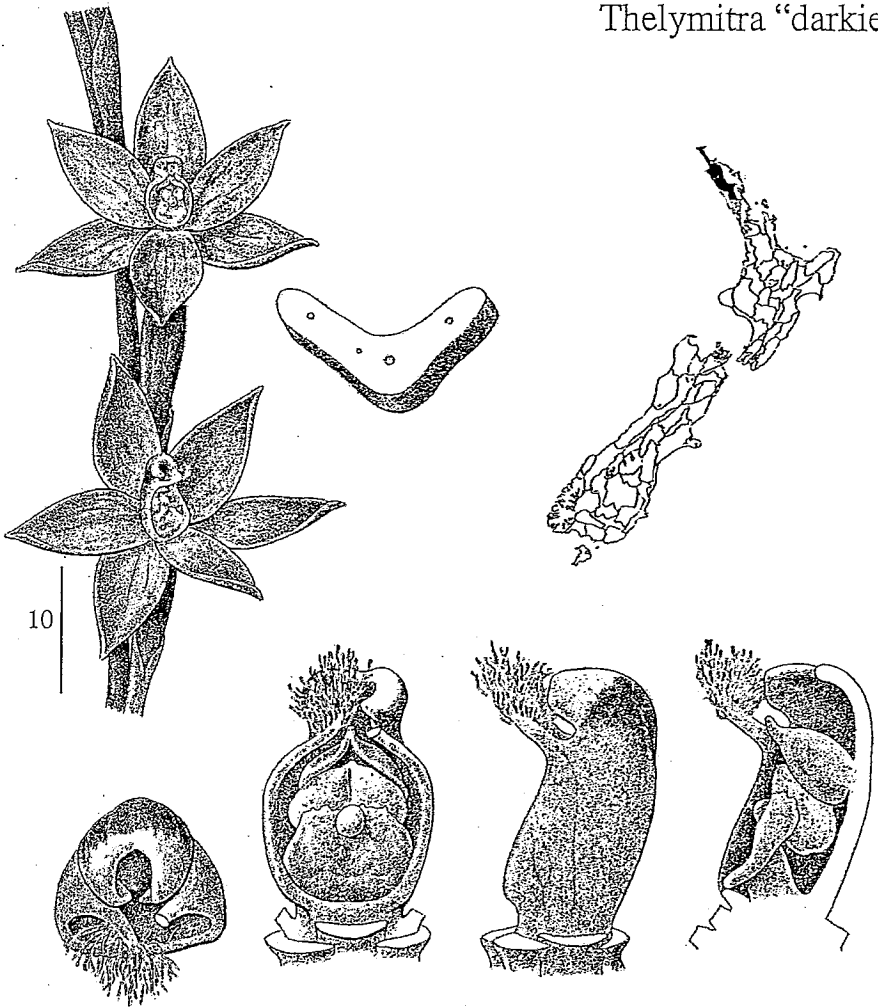
Habitat: open montane tea tree scrub.

Flowers November to December.

Distribution: from one area between Napier and Taihape only.

Conservation status: unknown.

Thelymitra "darkie"



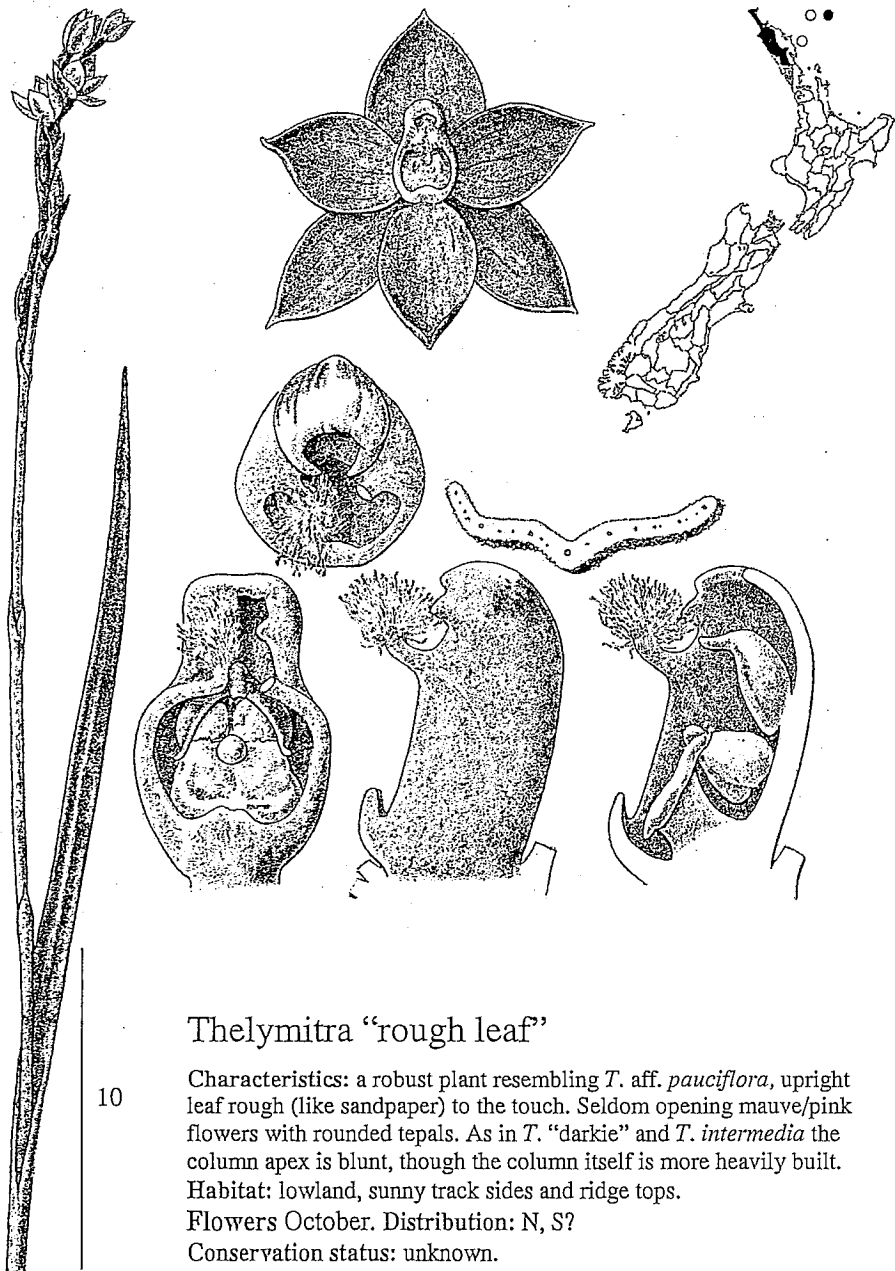
Characteristics: dark purplish stem, leaf and bud. Dark green ovary. Self pollinated hence opens only in hot, humid, sunny days. Flowers deep purplish blue. Column has a mauve base, below a red or indigo band, below a bright yellow, thick post-anther lobe having an oblong cleft. Straight column arms sprout sparse white cilia.

Habitat: lowland damp scrub and tracksides.

Flowers October to November.

Distribution: N: Far North only.

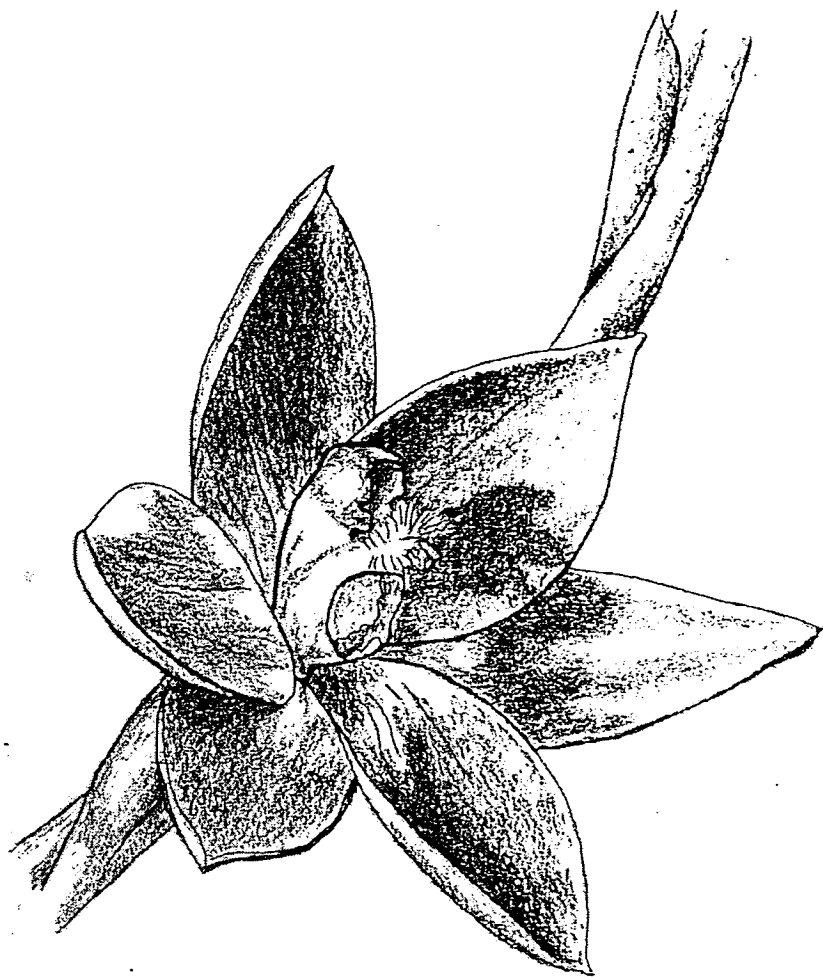
Conservation status: unknown.



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Thelymitra "rough leaf"

Characteristics: a robust plant resembling *T. aff. pauciflora*, upright leaf rough (like sandpaper) to the touch. Seldom opening mauve/pink flowers with rounded tepals. As in *T. "darkie"* and *T. intermedia* the column apex is blunt, though the column itself is more heavily built. Habitat: lowland, sunny track sides and ridge tops. Flowers October. Distribution: N, S? Conservation status: unknown. Notes: a similar plant was found at Shag Point, Otago.



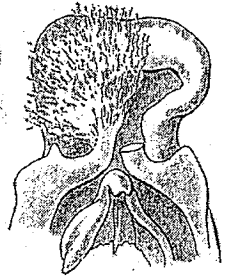
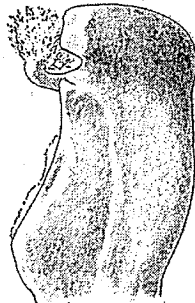
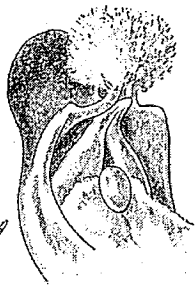
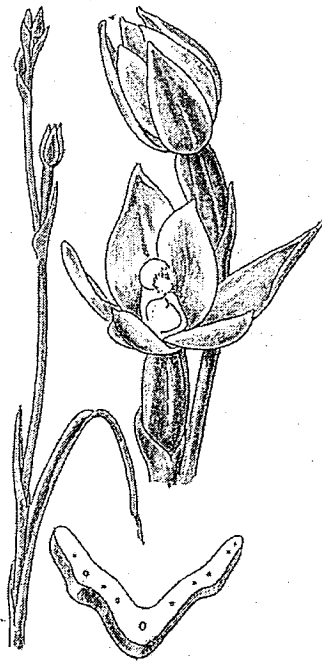
Thelymitra "sky"

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

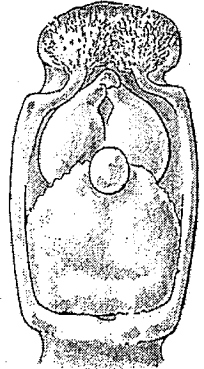
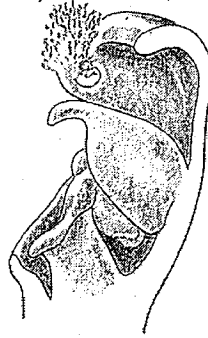
Habitat: gumland scrub.

Flowers October to November.

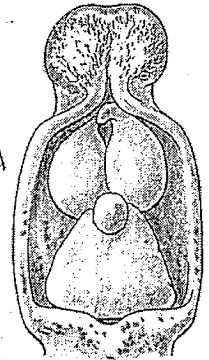
Distribution: N: Far North only.



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 greatly altered.

Habitat: montane scrub: not yet seen below 850m altitude.

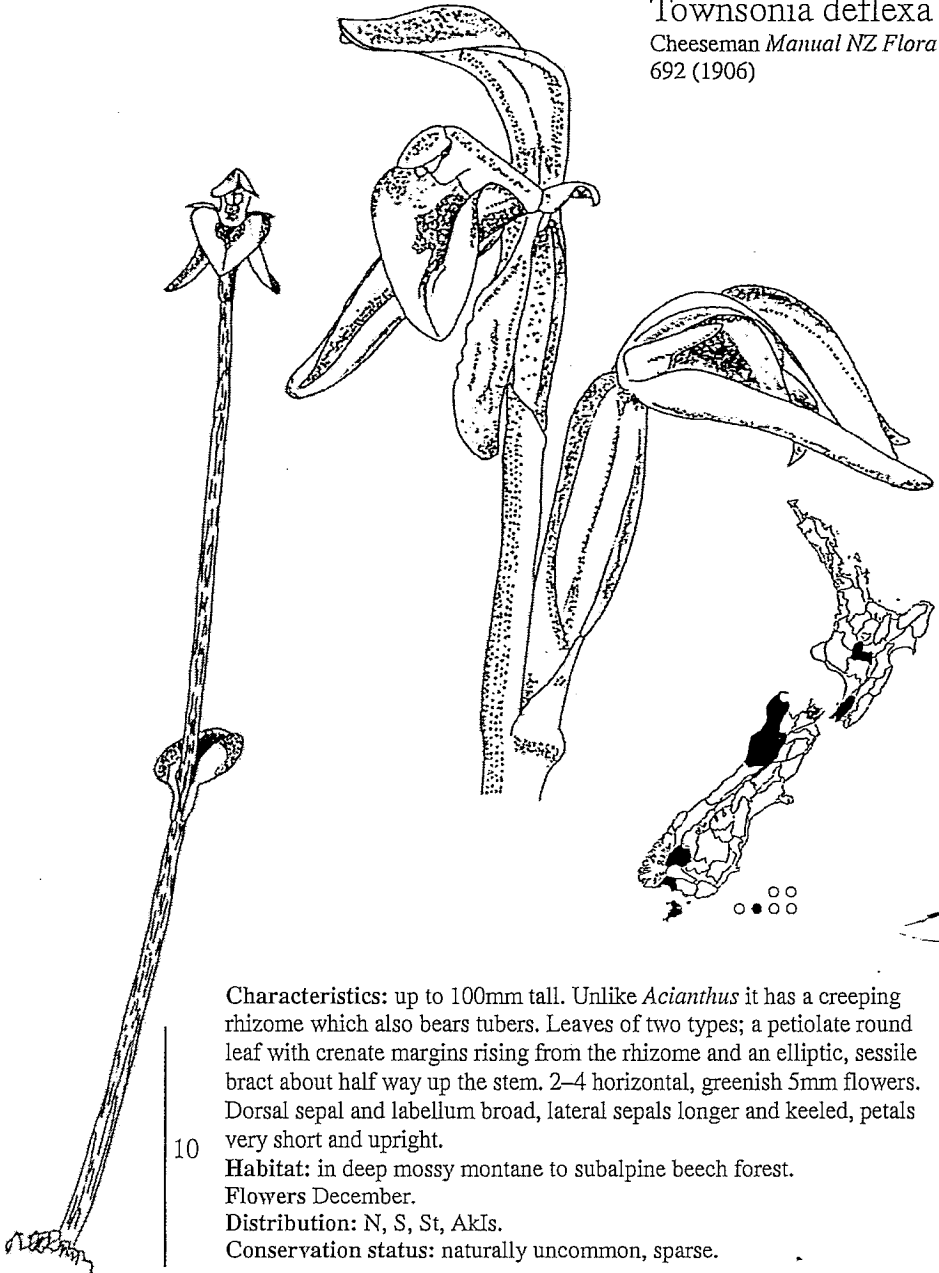
Flowers January to February.

Distribution: N: Ruapehu 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.

Townsonia deflexa
 Cheeseman *Manual NZ Flora*
 692 (1906)



10

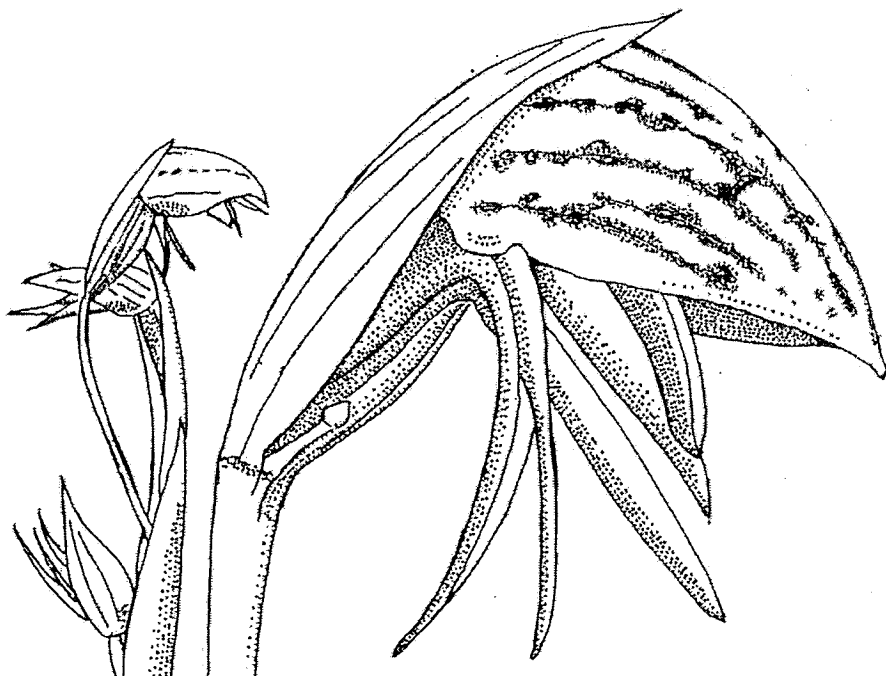
Characteristics: up to 100mm tall. Unlike *Acianthus* it has a creeping rhizome which also bears tubers. Leaves of two types; a petiolate round leaf with crenate margins rising from the rhizome and an elliptic, sessile bract about half way up the stem. 2-4 horizontal, greenish 5mm flowers. Dorsal sepal and labelium broad, lateral sepals longer and keeled, petals very short and upright.

Habitat: in deep mossy montane to subalpine beech forest.

Flowers December.

Distribution: N, S, St, AkIs.

Conservation status: naturally uncommon, sparse.



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, Ca.

Conservation status: not threatened.

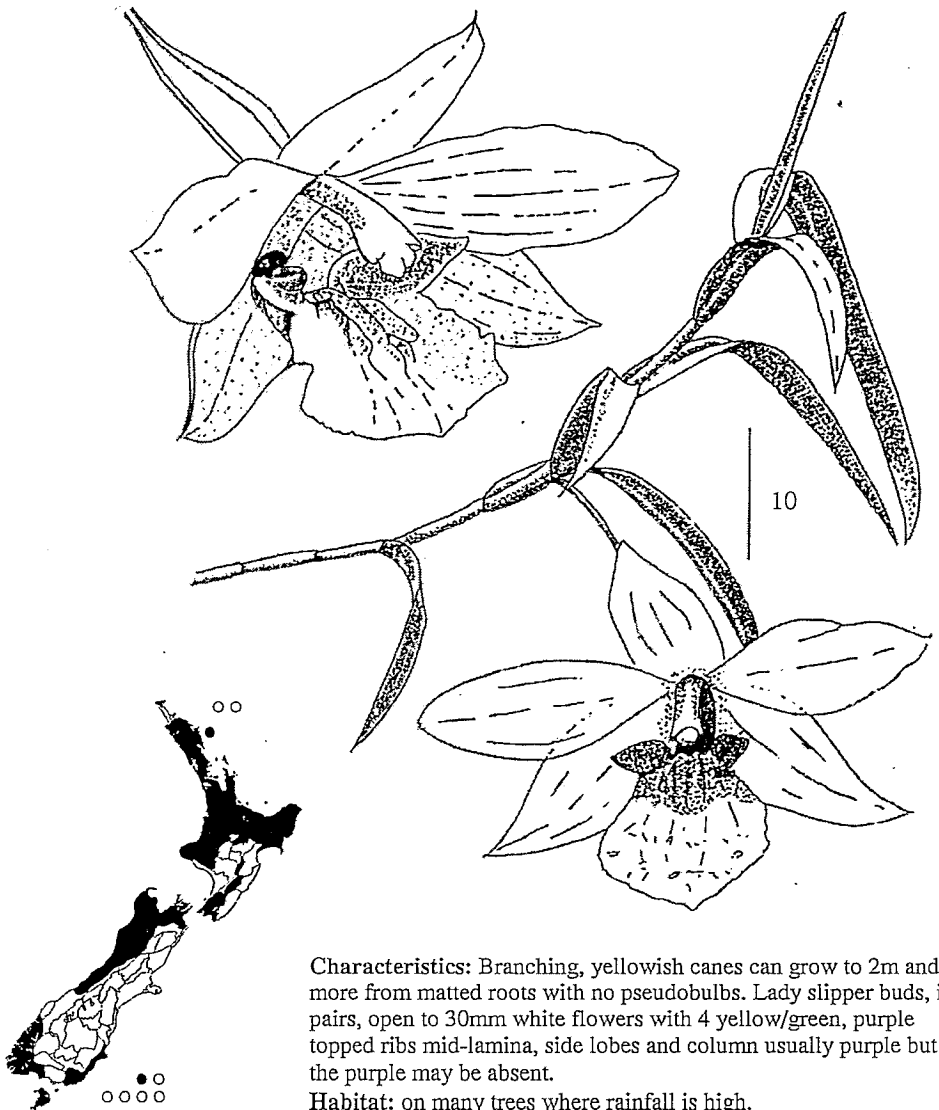
Notes: until recently *Lyperanthus antarcticus*.

10



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 mid-lamina, 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 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

anterior: in front.

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

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.

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

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

fimbriate: fringed.

gland: a secreting organ or part.

lamina (disc): the central part of the labellum to which the lobes connect.

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**.

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

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.

taxon: form, variety or species, plural **taxa**.

tepala: 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.