



Newsletter

Number 29, March 1989.
Editor: Ian St George,
45 Cargill St, DUNEDIN.

Original Papers

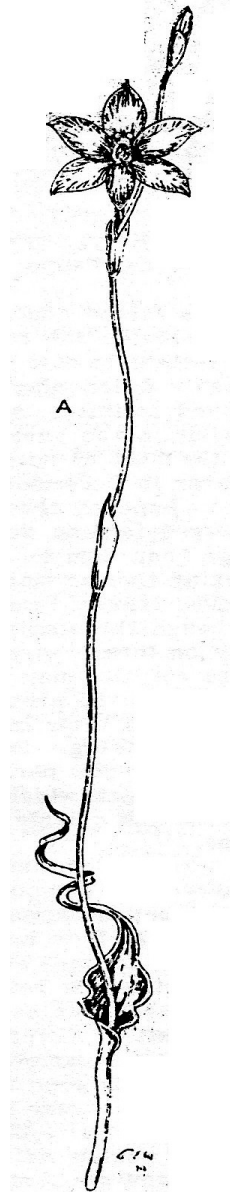
The rediscovery of *Thelymitra matthewsii* in New Zealand
by Doug McCrae, Kaitaia.

(The illustration of *Thelymitra matthewsii* is by Australian artist Collin Woolcock and is reproduced from the *Orchadian*, September 1979, p100. The drawing of the leaf is from David L. Jones's new book *Native orchids of Australia*, p25 - Ed.)

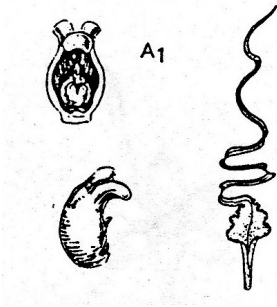
Back in 1910 Thomas Cheeseman described *Thelymitra matthewsii*, naming the species after R.H. Matthews and adding the footnote, "A charming little plant, worthily dedicated to its discoverer, who has added more to - our knowledge of the New Zealand orchids than any other observer of late years...." Richard Matthews and his son H.B. (Blem.) recorded this orchid from near the coast, west of Kaitaia. Only a few specimens were ever found, growing on consolidated sand dunes under tall teatree.

This Australasian species occurs in Victoria where it is also rare. It had not been seen there for many years until it was recently rediscovered by Alan Peisley at Genoa. During 1988 I undertook an orchid survey of the Te Pahi Farm Park for the Department of Conservation. The Park lies at the very northernmost part of New Zealand, between Cape Reinga and North Cape. On the latest of my regular visits to the area I stumbled on one specimen of this diminutive *Thelymitra*. As flowering is in September-October I was too late and could manage only photographs of the leaf and spent inflorescence.

Apart from the flowers there are other distinctive features which aid in the identification of *T. matthewsii*. These include: number of flowers (one or occasionally two); small size (100-160mm at flowering); two broad, sheathing stem bracts; leaf sheathing at base, covered with fine hairs, becoming much expanded then suddenly narrowing into a fine blade which is usually spirally twisted so as to coil around the stem.



A. *Thelymitra matthewsii*



No other New Zealand representative of the genus *Thelymitra* exhibits these characteristics. Presumed extinct in New Zealand, this orchid had not been seen here for about 78 years. It is worth noting that the original locality for *T. matthewsii* is almost 100km from that identified recently. The species should be searched for in all areas north of the Hokianga - there must be more of it about.

Iwitahi diary: *Corybas trilobus* variations.

Max Gibbs, Taupo.

It has rained almost continuously through September and the pools of water lying beside the road are ringed by the present rain shower. The pine forest at Iwitahi is cold and wet. The forest floor is littered with a thick layer of freshly fallen pine needles and twigs. Several newly wind-blown trees have played dominoes, adding to the chaos and havoc wrecked by cyclone Bola earlier in the year. The endless expanse of pine needles denies the presence of the host of native orchids yet to emerge for the massed displays that will appear in December. But there are orchids present.

Beneath the new layer of pine needles colonies of *Corybas trilobus* have emerged forming patches several metres across. The largest patch found was more than 60m long by 60m wide. Many of the colonies are in full bloom looking like so many insects struggling to climb out from under the tightly packed leaves. *Corybas trilobus* colonies expand by vegetative propagation and although the single leaf and flower looks like a separate plant, these "plants" may be interconnected members of a colony. Some plants may be separate and some colonies may consist of two kinds of "plants". The flowers within a colony will be similar. In some colonies there are 600-1000 plants per square metre with their leaves touching and only the whiskers of the thread-like sepals showing. In most other patches the plants are less cramped and number about 100-200 per square metre. Dotted between these patches are smaller colonies with widely spaced plants numbering only 10-30 per square metre. Not all the colonies have plants in flower and not all the plants look the same.

As an enthusiastic amateur I have been visiting the Native Orchid Reserve and surrounding forest at Iwitahi for several weeks now (October) and it has become apparent that the *C. trilobus* plants in the area are highly variable in form and there is a sequence to the flowering of the apparently different forms. The major variations do not occur within a colony but are very noticeable between colonies. To my untrained eye there would appear to be at least five easily distinguished variations that do not seem to be simply the result of different physical growing conditions. These variations occur on almost flat, apparently evenly lit ground covered with pine needles and often within a few metres of each other. For example, the very large patch of *C. trilobus* plants all have rounded leaves with a small central lobe and had finished flowering two weeks ago. In contrast, several smaller adjacent patches have distinctly three lobed, butterfly-shaped leaves and are just coming into flower.

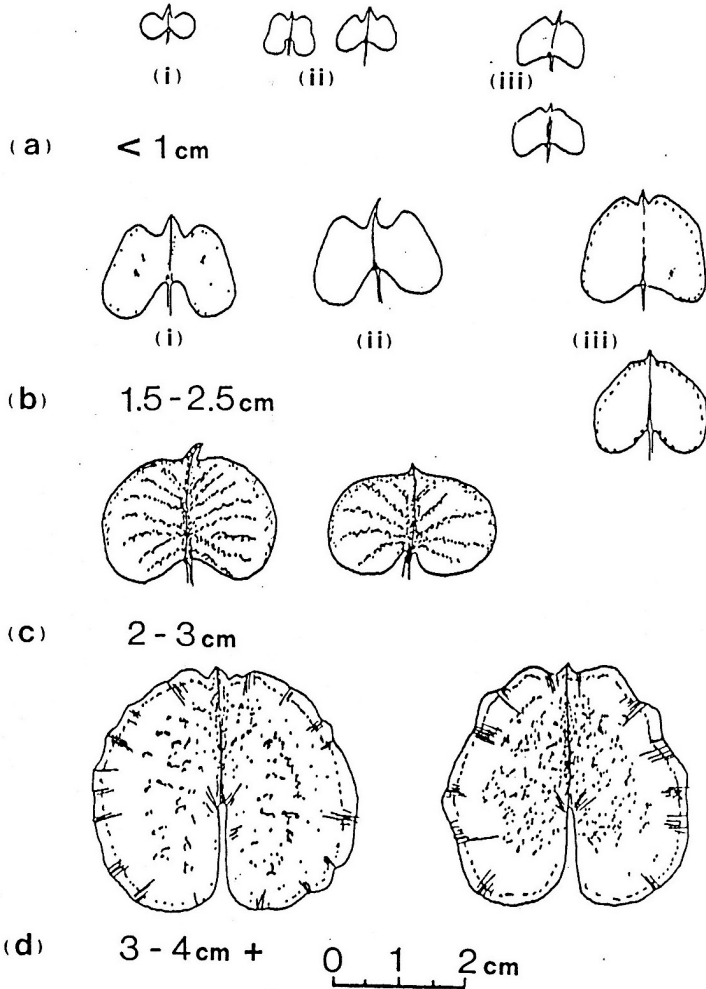


Fig 1

Main variations in leaf size and shape of flowering plants.

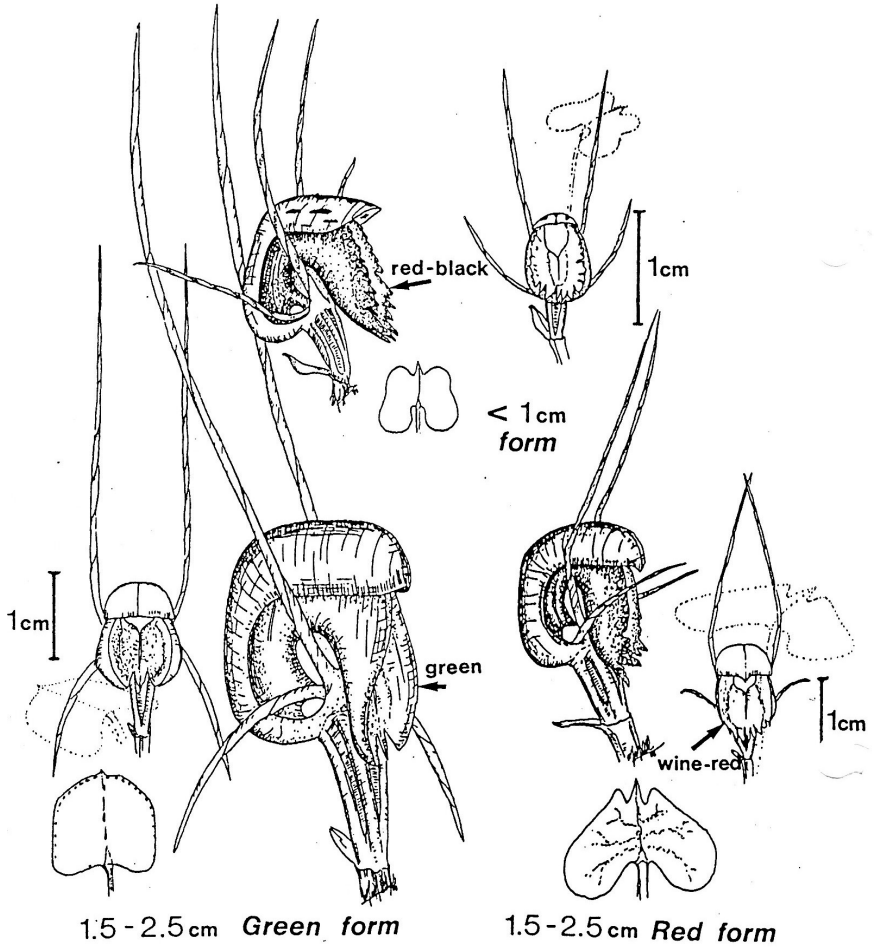


Fig 2

Variations in the size, shape and colour of the flowers.

To describe the variations observed I have considered only flowering or fruiting plants on the assumption that these are mature and any differences are not due to juvenile forms. *Corybas trilobus* is described by Johns & Molloy (1983) as having "...rounded leaves ending in two lobes and a blunt central point. Its leaves are held on short stalks at the same level as the green-red flowers and slightly above them. It also has a short rounded hood covering a broad expanded lip". Dorothy Cooper (1981) describes the leaf as "...usually blotched with purple-red. It is 2-2.6cm in diameter, often wider than long. The leaf varies in shape but is usually three-lobed; the central lobe is small, and there is a deep notch at the leaf base".

My observations indicate that these descriptions encompass the majority of the *C. trilobus* plants at Iwitahi allowing that groups of the same plant can '—flower at different times within the flowering season. However, the variability of *C. trilobus* at Iwitahi includes colonies of plants which fall outside the broad description above.

The leaf sizes found at Iwitahi range from less than 1cm to more than 4cm across in apparently discrete ranges of less than 1cm, 1.6-2.5cm, 2-3cm and 3-4cm plus. Together with the size is a variation in leaf shape and colour (Fig. 1). The overlap in the middle size ranges is covered by a very distinct leaf shape and colour for the 2-3cm range (Fig. 1c).

The smallest size leaves have two circular or angular lobes and the third central lobe is very distinct and pointed (Fig. 1a 1ii). The notch at the base of the leaf is shallow and wide. The leaf colour is pale green with a thin red line along the axis of most leaves and the edges of some. These plants have small dark red-black flowers held below the leaf about 0.8cm long with narrow erect sepals less than 2.6cm long (Fig.2). The dorsal sepal is flattened, pointed and heavily marked with red spots and a longitudinal stripe. The labellum is deeply serrated along the entire edge and has a small green raised patch forming the throat of the flower. One variation of this group has shovel-shaped leaves with virtually no central lobe (Fig. 1a i, ii) and no red markings. The flower is almost translucent white-green with a vertically red striped labellum.

The 1.6-2.6cm size leaves are highly variable (Fig.3) but generally fit the broad description for *C. trilobus*. They are mainly angular with a distinct but blunt central lobe (Fig.1b 1,11). The leaves are mid green and frequently marked with irregular blotches and flecking or stippling. In some colonies the whole leaf has a purple-red sheen. The most common marking is along the central axis of the leaf. A few colonies of plants were found with broad irregular bands along the main leaf veins (Fig.3). This group of plants has deep wine-red flowers held below the leaf about 1 to 1.6cm long with narrow erect sepals up to 3.5cm long. The dorsal sepal forms a blunt green cap and is usually unmarked except for a thin longitudinal red line on the back of some flowers. The edge of the labellum has serrations only near the centre and a notch which meets the large raised green patch forming the flower throat. In some colonies the labellum is distinctly bicoloured with red sides and a white centre. In these flowers the edge of the labellum is smooth except for one or two pointed lobes in the central notch.

Some colonies in this leaf size range have leaves with virtually no central lobe (Fig.1b iii). The leaves are longer than wide with a less pronounced notch at the base and usually have a distinct ring of red dots close to the edge.

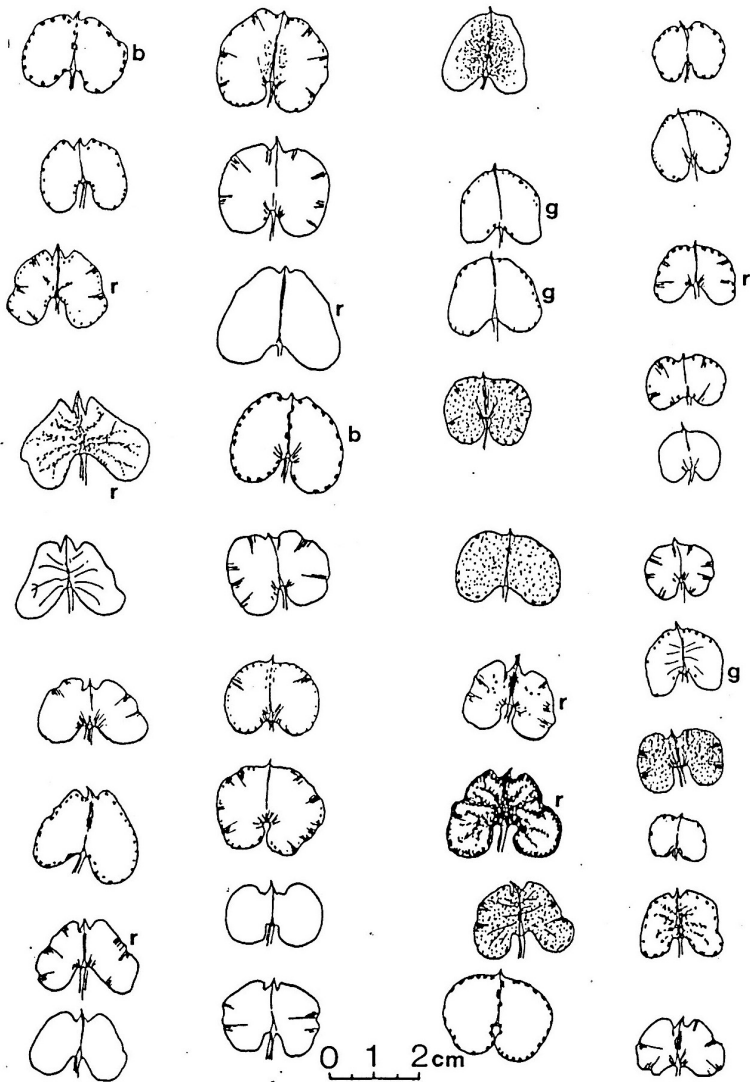


Fig 3

Variations in the 1.5 - 2.5 cm leaf size range. An even fleck indicates that the whole upper leaf surface was tinged with red.
(r = red flower; g = green flower; b = bicoloured flower)

The most distinguishing feature of these plants is the flower which is green and held above the leaf. The flower is larger than the red forms being up to 2cm long with narrow erect sepals up to 8cm long (Fig.2). The dorsal sepal forms a large blunt green cap which is unmarked. The labellum is pale green to translucent white with a very large raised patch forming the throat. The edges of the labellum are not serrated although the central notch has one or two pointed lobes.

The green-flowered plants bloomed after the red-flowered ones and the sequence from red to green gave the impression that the plants had changed colour over a two week period. The green-flowered plants were not common although small patches were found throughout the area.

The 2-3cm size leaf is rounded and wider than long giving them a distinctive kidney shape (Fig.1c). The central lobe is absent or shows only as a leaf tip. The notch at the base of the leaf is very shallow and smooth. The edges of the leaf are smooth and tend to curl under. The leaves are heavily marked with narrow red bands radiating from the central axis. Indentations at the red bands give the leaves a textured appearance. These plants have translucent pink flowers held below the leaf, about 1cm long, with narrow erect sepals about 5cm long. The dorsal sepal forms a blunt green- white cap apparently unmarked. The labellum does not appear to be serrated or to have a central notch. This group of plants were the first to flower at Iwitahi and very few patches were found.

The largest leaved plants have distinctive oval leaves from 3 to 4cm or more across, being generally longer than wide (Fig.1d). Only a vestige of the central lobe is present at the leaf tip. The edge of the leaf is irregular and undulating. The notch at the base of the leaf is deep and very narrow, placing the stem near the centre of the leaf. The dark green leaves have red blotches along the central axis, irregular red stippling over much of the upper surface and a line of red dots close to the leaf edge. These plants have bicoloured flowers held at the leaf level, about 1.5 to 2cm long, with narrow erect sepals about 3.5cm long. The dorsal sepal forms a deep blunt green cap without markings. The labellum is wide with a serrated edge, a white centre and dark red sides. Only one colony of this variant was found, with plants spaced well apart. By far the largest group of plants fall into the 1.5-2.6cm leaf range which probably accounted for more than 90% of the *C. trilobus* plants found. To check the variability in this size range, I collected a leaf from each colony encountered on a walk through one area of the pine forest. The leaf shapes and sizes were recorded by taping the leaves to a sheet of paper and copying them on a photocopy machine. The outlines of the black images were then traced by hand and the leaf markings filled in. The resulting diagram (Fig.3) gives some indication of the range of variability that can occur in this relatively common native orchid, *Corybas trilobus*.

References (*Corybas trilobus*)

Cooper, D. *A field guide to New Zealand Native Orchids*. Wellington Orchid Society, 1981. 103 pp.

Johns, J. and Molloy, B. *Native Orchids of New Zealand*. Reed, Wellington, 1983.

124pp.

What is this southern *Drymoanthus*?

by Ian St George, Dunedin.

Drymoanthus has always been rare here in eastern Otago. You can read in the Hocken Library in Dunedin the neat handwritten notebooks of G.M. Thomson, biology teacher at the High Schools; in 1880 he wrote, "I obtained a few flowers of this rare little species from dry rocks close to the edge of the harbour, near Port Chalmers." By 1906 it still grew "rarely on tree trunks in the bush along the west side of the harbour.... one of the most interesting but rarest of our orchids."

Over fifty years after Thomson's first entry the Dunedin Naturalists' Field Club minutes of 30 November 1936 recorded an outing to the Leith Valley, Dunedin -

"Rare and beautiful native plants grow in profusion in idyllic surroundings. Of these plants pride of place is given to the rarest, the epiphytic orchid *Sarcochilus adversus*, which in this favoured spot grows on three distinct host trees, the broadleaf and the yellow and white mapou or lemon wood.... The *Sarcochilus* was examined carefully, the bunchy tufts of purple spotted leaves, waxy blooms of yellowish green and withering whitish aerial roots adhering to the bark making a very quaint and interesting study."

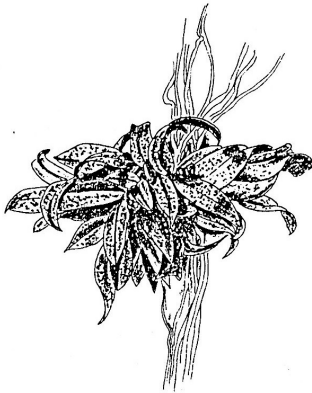
Helen Dalrymple (then President of the Field Club) mentioned it in her book: "This orchid had not been collected for a very long time." Her watercolour, reproduced in the book, is artistic rather than scientific and shows no detail other than spotted leaves and plain yellow flowers.¹

Apart from an Otago University Botany Department Herbarium specimen gathered near Te Anau that was its last record in Otago (there were a few from Southland) until its rediscovery in 1984 reported in NZNOG Newsletter No 6². Since then small colonies have been found in several localities in the Catlins area of South Otago, at Sandy Point near Bluff, at Tuatapere, on Stewart Island, and recently at Taieri Mouth, where Bruce Irwin had seen it years ago. Only on miro and totara.

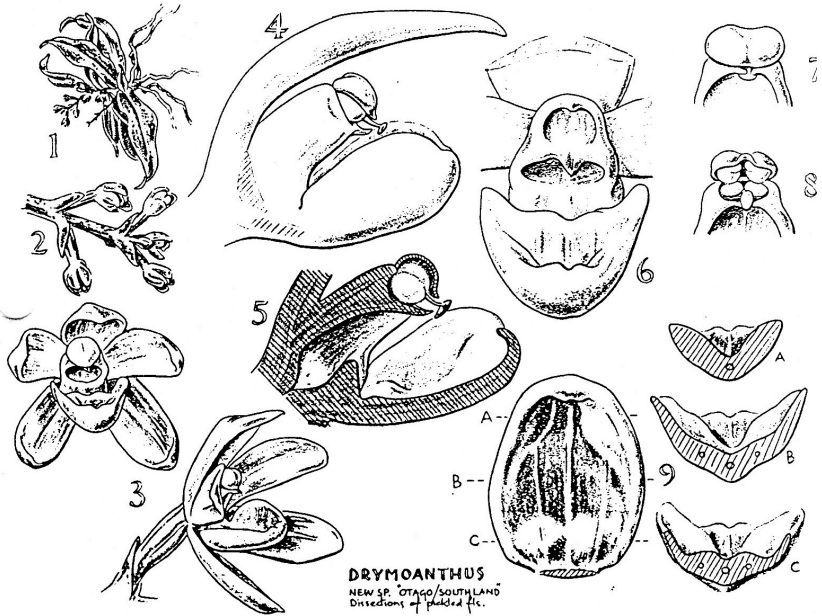
Drymoanthus adversus is described by Dan Hatch and illustrated by his father,³ by Lucy Moore and illustrated by Bruce Irwin.⁴ Dorothy Cooper has drawings of dissections of the flower that show some detail⁵ A.W. Dockrill, who had placed *D. adversus* in *Drymoanthus* rather than *Sarcochilus*, has detailed drawings of dissections.⁶

The plant described and shown by all four matches the plentiful *D. adversus* in south Westland - and, I presume, the common one further north, though I have never seen northern specimens. These flowers are well marked with purple, have a more or less complete transverse bar across the labellum, and the plant has shiny dark green leaves, sometimes spotted with purple. The eastern Otago flower (and the Southland one) is pale yellow-green, has no transverse bar in the labellum, not even thickenings on the lateral lobes of the labellum, and the plant has leathery and dull green-yellow leaves, always spotted with red-purple. The flowers are soon fertilised - pollen and parts of small insects are found sticking to the stigmatic cavity, and the anther cap and pollinia are removed in fertilised flowers.

Hooker may have examined this plant ("Flowers minute, yellow-green... Lip subquadrate, obscurely lobed" - no mention of a transverse bar) though his specimens were from the north.⁷



Ian St George



DRYMOANTHUS
NEW SP. OTAGO/SOUTHLAND
Dissections of plucked fls.

J. Bruce Irwin

Cheeseman ("Leaves... often spotted with purple.... Flowers... often spotted with purple.... Lip... with a fleshy gland on each side") must have examined the northern plant.⁸ Colenso's *Sarcochilus breviscapa* (later placed in *Sarcochilus adversus* by Cheeseman) appears to have been the northern one too?

Nicholls has a plate of *Drymoanthus minutus*, a plant endemic to Queensland, but his drawings show differences from the Otago *Drymoanthus*. On the other hand Lucy Moore wrote of *D. adversus*, "The best character differentiating it from *D. minutus* seems to be the presence of the large internal thickenings on the inner sides of the labellum."¹¹ These are absent in the Otago *Drymoanthus* too, though Brian Molloy writes that the Otago *Drymoanthus* is certainly not *D. minutus*. Halle has a description and plate of the New Caledonian *Drymoanthus minimus*, but it appears to be a smaller plant¹²

G.M. Thomson again (this time from his notebook of 22 October 1879 - I am writing this on 27 October 1988)

"Johnstone brought up specimens from the rocks at Sawyer's Bay of *Sarcochilus adversus*. This singular little orchid, though remarkably inconspicuous is quite incapable of self-fertilisation. The flowers are produced on few-flowered racemes not exceeding an inch in length. They are much more regular than the majority of orchids, greenish in colour, with a few purple markings and not exceeding 1/10 of an inch in diam. They are also produced more or less under the leaves. On the other hand they are slightly fragrant, and secrete a considerable amount of honey at the base of the column and the fleshy, ridged labellum. The pollinia are united into two almost globular masses attached by a caudicle to a broad, flat disk; when removed from the anther the disk contracts and causes the pollinia to be depressed to a nearly horizontal position. This depression is almost identical with that occurring in *Orchis mascula* as described by Darwin, but there is a slightly different action in this that the two masses of pollinia separate slightly at the same time. The whole operation does not occupy more than 10 seconds. From the great depth of the stigmatic cavity, it seems utterly impossible that self-fertilisation could take place."

What we seem to have here is a southern variation from the "typical" form of *D. adversus*. What is your *Drymoanthus* like?

References (*Drymoanthus*)

1. Dalrymple H.K. *Orchid hunting in Otago*, New Zealand. Dunedin, Coulls Somerville Wilkie, 1937. Watercolour p2, text p17.
2. NZNOG Newsletter 1983. 6: p2.
3. Hatch ELD. The epiphytic orchids of New Zealand and a new species of *Pterostylis* from Mount Egmont. *Trans.R.S.N.Z.* 1960. 78: p104.
4. Moore L.B. and Edgar E. *Flora of New Zealand* Vol II. Wellington, Government Printer, 1976. pp166-7.
5. Cooper D. *A field guide-to New Zealand native orchids*. Wellington, Wellington Orchid Society, 1981. pp93-6.
6. Dockrill A.W. Australasian Sarcanthinae. Sydney, ANOS, 1967.
7. Hooker J.D. *Handbook of the New Zealand flora*. London, Reeve and Co, 1867. p263.

8. Cheeseman T.F. *Manual of the New Zealand flora*. Wellington, GovernmentPrinter, 1906. p667.
9. Colenso W. A description of a few new plants from our New Zealand forests. *Trans. N.Z.I.* 1881. XIV: pp332-3.
10. Nicholls W.H. *Orchids of Australia*. Melbourne, Nelson, 1969. t476.
11. Moore, 1976. pl67.
12. Halle N. *Flore de la Nouvelle Caledonie Vol 8, Orchidacees*. p361-3.

Notice

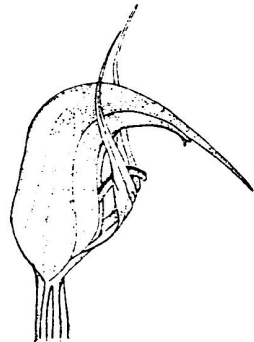
Conservation Officer wanted for NZ Native Orchid Group

◆ Now that we are affiliated to the Australasian Native Orchid Society (ANOS) we have been asked to appoint a Conservation Officer whose responsibilities will be to create a list of the most endangered orchid species; publish a conservation booklet including coverage of what we are doing to conserve NZ species, conservation issues and general information including a checklist of government agencies that might need to be involved, and an outline of relevant NZ laws related to the conservation of flora; and make suggestions to ANOS on current issues and priorities for the year. Volunteers please write to the editor.

Notes

◆ Humboldt Cottage is close to Mount Aspiring National Park, 20km beyond Glenorchy at the head of Lake Wakatipu. For those who enjoy a tranquil setting, walks (several of the great tramps begin nearby), fishing or just orchid watching, the cottage has three twin bedrooms, two bathrooms, full kitchen and laundry facilities, and TV/video. Rates are \$60 per night (+GST) for a couple, and \$16 for each extra person. Enquiries to Trish and Russell Hamilton, Routeburn Station, Private Bag, Queenstown, phone (0294) 29921.

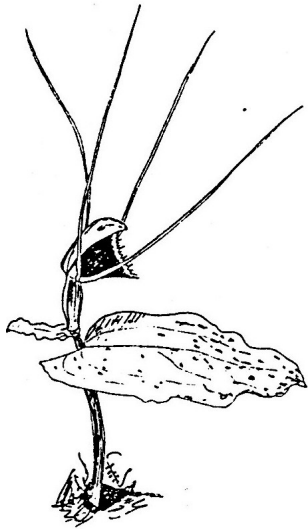
◆ Gordon Sylvester visited Kapiti Island on 16 October. He writes, "I observed the following native orchids - all were beside the track and easily visible: *Pterostylis banksii* in flower and bud, reasonably common; *P. alobula* in seed, plenty of very young plants about; *P. cardiostigma* only one plant in bud - should be in flower early November; *Pterostylis* unidentified, a single specimen which I have seen elsewhere, resembles *P. graminea* in the size and colour of the flower, and the leaves resemble an immature *P. banksii* in shape, five leaves changing shape upwards, the uppermost overtopping the flower; *Corybas trilobus* extensive colonies of vegetative growth, no flowers seen; *Acianthus sinclairii* in seed, occasional colonies only."



◆ NZNOG has made application to the Auckland Environmental Centre for a grant to survey in the field and in the archives the natural history of the

orchid flora of that critically important orchid habitat, the North Auckland peninsula. If the grant is approved a publication will follow.

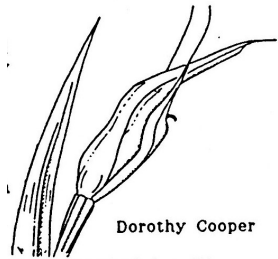
◆ Our subgroup in Taupo has also applied under the Environmental Grants Scheme for funding to survey the pine forest between Iwitahi and Rainbow Mountain, to locate and recover rare and unusual native orchids from the path of logging, and to enhance public awareness of native orchids. Particularly important orchids in the region are *Calochilus robertsonii* and *Chiloglottis gunnii*.



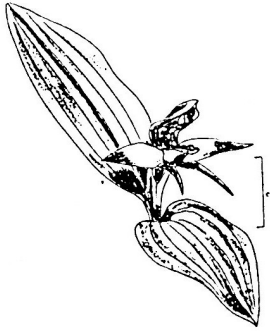
◆ Mary King of Morrinsville writes, "In late October, I found an isolated group of *Corybas oblongus* on a shady bank on the Buck Rock track at Waiorongamai in the Kalmal range. The leaves were the largest I have ever seen on *C. oblongus* and speckled with brownish markings. There were five in full flower and several more in bud. I haven't previously seen any in this area, although *C. trilobus*, *C. rivularis* and *C. macranthus* are more plentiful. In early November I found a large but isolated colony of *C. oblongus* with smaller leaves and flowers, and a smaller group of the same, in the Waltawheta valley, also on the Kaimai range, near Walhi. All these were in fairly sheltered positions. In November '87 I saw a group of at least 60 plants along the Ridge track on the Kalmal, between the Junction of the Tuahu and Thompsons tracks. These would be sheltered from the prevailing westerly winds, but still in an exposed position. These leaves and flowers were much smaller. All were growing on vertical banks 60cm to 1m above the track levels. *C. oblongus* seems to keep in tight isolated groups, not scattered like other species.

◆ Jean Mowbray listed orchids found on the "Puffer" track, 14 December 1986: *Aporostylis bifolia*, *Caladenia carnea* (+ red form), *C. lyallii*, *Chiloglottis cornuta*, *Corybas oblongus*, *C. rivularis*, *C. macranthus*, *Dendrobium cunninghamii*, *Earina autumnalis*, *E. mucronata*, *Gastrodia sesamoides*, *Microtis unifolia*, *Prasophyllum colensoi*, *Pterostylis banksii*, *P. cardiostigma*, *P. graminea*, *P. foliata*, *P. plumosa*, *Thelymitra dentata*, *T. formosa*, *T. longifolia* (+ pink form), *T. pauciflora*, *T. pulchella*, *T. venosa*, *T. decora* (*T. hatchii* not found, although present in previous years).

◆ New member John Dodunski writes, "It is always a pleasure seeing New Zealand natives in the wild, and I am always for keeping them that way. I personally believe that there are still a large number of unnamed species around in our native bush. One particular one I know of seems to fit the description of one mentioned in John Johns and Brian Molloy's book - *Pterostylis* sp. ("Days Bay"). This is found on a popular walking track in the Kaltake Ranges. It is a large plant but I have never seen the flower open fully..." It never does open fully, John: see Dorothy Cooper's paper "*Pterostylis cardiostigma* D. Cooper sp.nov. - a new species for New Zealand". *Orchadian* 1983, 7: p216.J - Ed.



Dorothy Cooper



◆ Jean Mowbray writes (7 December) from Wellington:

"*Chiloglottis cornuta* was the first native orchid I ever found.... A couple of years ago Colin Ogle told me of finding *C. cornuta* on his property (an east-facing hillside) but had not found it around the area before. It came up among sawdust which he had obtained from a mill in Pauatahanui, and he wondered whether the seed had been imported this way." *I am sure It was - C. cornuta has perhaps adapted best of all the natives to exotic pine forest, and often appears on pathways and in gardens covered with pine chips - Ed.*

◆ *Pterostylis foliata*, like *Drymoanthus adversus*, seems to be rare in Otago. 1988 was the first time I had seen it - at Shag Point in drought-stricken North Otago in November, a solitary flower with two rosettes nearby, and another flowering stem that had been eaten off. I returned a week later and that flower too had been eaten: the North Otago rabbits were hungry this season, when most orchids have been a fortnight early. Otherwise the best finds for me in Otago this summer have been *Gastrodia minor* under gorse; and *Thelymitra formosa* (3 plants); both in the Twelve Mile Creek-Lake Dispute area near Queenstown (surely the southernmost record of *T. formosa* - at 600m altitude among plentiful *T. hatchii* and *T. venosa*). This is a rewarding orchid area, based on a band of marine Oligocene strata - known locally as the Moonlight Fault - which no doubt lends alkalinity to the soil from its limestone and fossil shells. There is a colony of *Corybas macranthus* there with the longest dorsal sepal I have ever seen. - *Ed.*



◆ Trevor Nicholls reported *Gastrodia minor* and *G. cunninghamii* under his rhododendrons in 1987. This season (6 December) he writes, "The first of my *Gastrodia* appeared (*G. minor*) about 23 November. I had 76 plants with 1-9 buds. These have been slowly opening since 26 November - insofar as they do open! I only noticed the brown asparagus spear of a solitary *G.*

cunninghamii about 4 days ago. It has migrated about 9 inches from where it was last year. This is partly why I missed it. The other reason is that it is camouflaged by the twigs of a miniature rhodo. I am planning to do a crawl around the rhodos in the Botanical Reserve to see if they are there also."

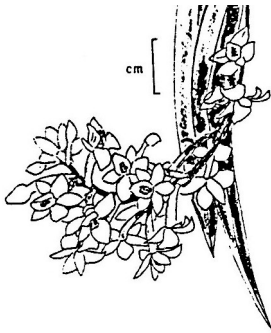
◆ Doug McCrae writes, "Readers familiar with the Kaimaumuau Scientific Reserve, a wetland north of Kaitaia, may be interested to learn that on 4 October almost the entire vegetation cover of the Reserve was destroyed by fire. The wildlife values were high and many species, including the fern bird, are seriously affected. While some of the orchids may benefit from fire, of concern will be the undoubted proliferation of exotic nasties like hakea, acacia and gorse."

◆ Auckland Institute and Museum has acquired the glass negatives of photographs taken by Frank Blackwell. He was the brother of Ellen Blackwell, co-author with R.M. Laing of the classic *Plants of New Zealand*

(first ed. 1906), and took many of the monochrome photographs. Among the treasures are plates of *Pterostylis banksii* and *Corybas macranthus* similar to those used in the book. (For a fascinating account of the Blackwells, see Dick Scott, *Seven lives on Salt River*. Auckland, Hodder and Stoughton, 1987). The Museum Botany Department is also currently cataloguing H.B. Matthews's orchid plates.

◆The Australian Orchid Foundation announces its first Australian Orchid Field Conference, "somewhere north of Cairns" in north Queensland, to follow the 13th World Orchid Conference in Auckland, 29 August to 6 September 1990. To be better informed or to offer a paper write to Mr Len. Lawler, Hon. Sec. A.O.F. Research Ctee, PO Box 58. Atherton, Queensland 4883.

◆The AOF has a number of publications for sale - the English translation of Schlechter's *Orchidaceae of German New Guinea* at A\$160 (1200 pages, 1600 species), Lavarack and Gray's *Tropical orchids of Australia* at A\$49.96, ANOS's *The cultivation of Australian native orchids* at A\$9, David Jones's new and quite magnificent *The native orchids of Australia* at A\$69.96, and others - write for a list - Australian Orchid Foundation, 107 Roberts St, Essendon, Victoria 3040. :



◆ Tim Funnell writes of finding a *Microtis* at Matata, west of Whakatane, on Henepuru Rd, along with *Thelymitra longifolia*. The *Microtis* did not appear to be *M. unifolia*, and he guesses it must have been *M. parviflora* - on a damp shaded clay bank. Behind Lake Rotoma they saw *Earina mucronata* and *E. autumnalis*, and at Whitianga Bay on the East Coast, *Pterostylis graminea*. (Thanks, Tim, these are our first mapping reports from Districts 14 and 19 - Ed). In response to items in the last Newsletter, Tim writes that he has seen spider webs strung across *P. graminea*, and that his mother puts banana skins on the top of her orchid mix as a fertiliser.

◆Max Gibbs: 20 November - "Large areas of *Caladenia iridescens* were in full bloom at Iwitahi. The other *Caladenias* were only in bud. Some patches of *C. iridescens* had between 30 and 50 plants per square metre and covered 40 to 60 square metres." 16 December - "On Dec 4 we had arranged to take the local Forest & Bird Society to Iwitahi to see the orchids and to see how our transplantings were going. It was a brilliantly fine day and we ended up with about 90 people including orchid society members from Hamilton, Tokoroa, Tauranga, Rotorua, Taupo and Napier. The weather made for fine orchid viewing and the visitors were impressed particularly with the transplantings as these were all doing well. We received many offers of help with surveys and transplanting operations. I have been out to Iwitahi nearly every Sunday now for several months and this year is quite different from last year. Many of the orchids have flowered earlier and some not at all. The colony of *Chiloglottis gunnii* threw only three flowers and these were quickly eaten off. The plants under the exclusion cages had escaped grazing but had not flowered either. It is as though this year was a dormant year for the whole colony..

Do we know if native orchids have a rest year in their flowering?"

◆Sandra Jones writes (2 January), "*Yoania australis*. How did others' *Yoania* hunting go this year? On 1 January 1989 I returned to the spot in a patch of taraire bush at Karekare (Auckland) where I had counted 16 flower stems on 6 January 1986 (see NZNOG Newsletter 13, March 1986) but could find only two

flower stems. When the colony was originally discovered on 28 December 1983, only one flower stem was seen. Obviously some years are better than others for *Yoania*. It would be interesting to know if the pattern is the same in other areas."

◆ Val Smith writes "My native orchid highlights this year have included seeing two tiny patches of *Bulbophyllum pygmaeum* on dead branches brought down by Cyclone Bola in the Kaitake Range of Egmont National Park; finding what I believe is my first *Pterostylis montana* - one plant only, in flower on 14 December, at the track edge between Egmont National Park boundary and the end of Mangorei Rd, Pouakai Range (plant 1, NZNOG Newsletter No 25)." Val makes a very sensible suggestion - if you know of any orchid outings in your area (Botanical Society, Forest and Bird, NZNOG etc) where visitors would be welcome, let us publicise them. Many members, given enough advance notice (and NB, we are a Quarterly Newsletter) would arrange a holiday to coincide, iwitahi, Kaitaia and the Longwoods were really very valuable experiences for many of us - Ed.

Mapping

The New Zealand Native Orchid Group's Mapping Scheme is supported by Lottery Science.

Here is an excerpt from a paper entitled "The greenhouse effect and wild orchids in South Australia" by Bob Bates (reproduced from NOSSA Journal 1988, 12. 8: 79).

"In South Australia the most serious effect will be lower winter rainfall in the west and north. This will mean that since orchids are dependant on reliable winter rainfall, the distribution of most species will shrink southward.

A study of rainfall records over the past 50 years has shown that the predicted climatic changes have already begun. The serious drought on the West Coast and adjacent north this year reflects this. The Gawler Ranges are having their driest year on record. My own observations made over just twenty years indicate the orchid loss. In the 1960s *Prasophyllum occidentale* was abundant in the Gawler Ranges. It is now almost extinct there. In 1984 there were none. Similarly orchids have disappeared over most tracks of the north. The number of orchid species in the Gawler Ranges has halved in twenty years, been reduced by one quarter in the Wilpena Pound and some five species have disappeared from the Alligator Gorge area since 1964 when records began. Some of the species lost did not occur elsewhere so extinction has already started. As most orchid populations in the areas are small already, we can expect an increase in the rate of loss."

I believe this has application to the NZNOG Mapping Scheme: we too will suffer orchid loss as a result of the greenhouse effect, so we really do need to know what we have now. Detailed Region and District maps are enclosed, together with new mapping forms for you to copy. *Please* fill in your mapping forms at every opportunity and send them to the editor.

A list of species follows - together with the District numbers where each has so far been reported. There are gaps that only you can fill.

Acianthus fornicatus var. *sinclairii*) 4, 9, 10, 11, 13, 16, 36, 38, 39, 46, 80,
Adenochilus gracilis 16, 18, 26, 49, 61, 66, 69, 70, 72, 73, 77, 79
Aporostylis bifolia 10, 16, 18, 26, 38, 46, 48, 49, 61, 63, 66, 66, 68, 69, 70, 73,
74, 77, 78, 80, 83,
Bulbophyllum pygmaeum 9, 10, 11, 13, 24, 26, 38, 46, 72, 77
Bulbophyllum tuberculatum 12,
Caladenia alata 4,
Caladenia carnea (was *Caladenia carnea* var. *bartlettii*) 16, 24, 38?, 46, 49?,
55?,
Caladenia catenata (was *Caladenia carnea* var. *exigua*) 16, 66, 69, 80, 83,
Caladenia iridescens (was *Caladenia carnea* var. *minor forma calliniger*) 9, 10,
13, 16, 18, 38, 46,
Caladenia lyallii 16, 18, 26, 38, 46, 66, 60, 65, 68, 69, 70, 73, 77.
Caladenia minor (was *Caladenia carnea* var. *minor*) 4, 10, 70, 72, 73, 77,
Calochilus herbaceus (*campestris*) 4,
Calochilus paludosus 4,
Calochilus robertsonii 11, 13, 16,
Chiloglottis cornuta 9, 10, 11, 12, 13, 16, 24, 25, 27, 28, 30, 38, 46, 47, 49, 61,
52, 53, 65, 66, 68, 69, 70, 72, 73, 77, 78, 79, 80, 83,
Chiloglottis formicifera
Chiloglottis gunnii 16, 62,
Corybas acuminatus (was *C. rivularis*) 9, 10, 13, 16, 24, 38, 46, 61, 72, 77, 83,
Corybas carsei (was confused with *Corybas unguiculatus*) 9, 11, 4,
Corybas cheesemanii (was confused with *Corybas aconitiflorus*) 9, 10, 38, 46,
Corybas cryptanthus 47, 65,
Corybas macranthus 9, 10, 13, 16, 25, 36?, 38, 46, 49, 51, 65, 66, 69, 70, 72,
77, 80,
Corybas oblongus 4, 9, 10, 13, 16, 25, 38, 46, 51, 69, 70, 72, 77, 78, 80, 83,
Corybas rivularis (was *C. orbiculatus*) 9, 10, 13, 16, 25, 38, 46, 51, 55, 66, 69,
72, 77, 83.
Corybas trilobus 5, 8, 9, 10, 13, 15, 16, 24, 26, 27, 30, 31, 36, 38, 39, 46, 47,
49, 51, 53, 56, 66, 66, 68, 69, 70, 72, 73, 76, 77, 80.
Cryptostylis subulata 4,
Cyrtostylis oblonga (was *Acianthus reniformis* var. *oblonga*) 9, 10, 38,
Cyrtostylis reniformis (was *Acianthus reniformis* var. *reniformis*) 36,
Dendrobium cunninghamii 10, 11, 13, 21, 24, 25, 38, 69, 70, 72, 77,
Drymoanthus adversus 10, 11, 13, 14, 24, 25, 36, 38, 70, 72, 77, 79,
Earina aestivalis
Earina autumnalis 10, 11, 12, 13, 16, 21, 24, 25, 38, 46, 69, 70, 72, 77, 80,
Earina mucronata 4, 9, 10, 11, 12, 13, 16, 16, 21, 24, 26, 36, 38, 46, 66, 69,
70, 72, 77, 80,
Gastrodia cunninghamii 10, 13, 16, 38, 49, 61, 65, 67, 65, 66, 69, 70, 73, 77
Gastrodia minor 9, 16, 16, 65?, 66, 69, 78,
Gastrodia sesamoides 10, 38, 73, 78,
Lyperanthus antarcticus 38, 61, 63, 66, 67, 69, 70, 72, 77, 83,
Microtis oligantha 16, 61, 65, 66, 69, 78,
Microtis parviflora 4, 16, 16, 19,
Microtis unifolia 4, 9, 10, 11, 12, 13, 16, 18, 24, 26, 31, 36, 38, 46, 65, 66, 66,
69, 70, 72, 77, 78, 80.
Orthoceras strictum 4, 9, 10, 11, 12, 13, 16, 18, 26, 31, 38, 46,
Paracaleana minor

Prasophyllum colensoi 4, 13, 16, 18, 25, 38, 48, 51, 55, 63, 66, 69, 70, 72, 73, 77,
Prasophyllum nudum 10.
Prasophyllum pumilum 4, 9, 10, 46.
Prasophyllum patens 10, 15, 18,
Pterostylis alobula 9, 10, 11, 13, 16, 16, 24, 38, 39, 46,
Pterostylis areolata 55, 69,
Pterostylis australis 38, 46, 49, 66, 69?, 701, 72, 78, 80.
Pterostylis banksii 9, 10, 11, 12, 13, 16, 18, 25, 36, 38, 39, 46, 49, 51, 55, 65,
66, 69, 70, 72, 73, 77, 78, 80,
Pterostylis brumalis 9, 10,
Pterostylis cardiostigma 16, 18, 25, 38, 39 *Pterostylis cycnocephala* 65, 56, 66,
67, 69,
Pterostylis foliata 38, 46, 65?,
Pterostylis graminea (var. *graminea*) 9, 10, 17?, 19, 36, 38, 53, 65, 69, 70, 72,
78,
Pterostylis graminea (var. *rubricaulis*) 9, 10, 13,
Pterostylis humilis 25,
Pterostylis irsoniana 25, 46, 55.
Pterostylis micromega 18, 80,
Pterostylis montana 24, 38, 51, 55, 65, 69, 70, 78,
Pterostylis nana
Pterostylis nutans
Pterostylis oliveri 63.
Pterostylis patens 16, 25,
Pterostylis plumosa 4, 9, 38,
Pterostylis tristis (was confused with *Pt. mutica*) 55, 56,
Pterostylis trullifolia 9, 10, 11, 13, 38, 46,
Pterostylis venosa 25, 51, 69, 70, 77, 78,
Spiranthes sinensis 13, 71,
Thelymitra aemula 4, 9, 10, 13,
Thelymitra carnea 4, 9, 10, 13, 46, 49,
Thelymitra cyanea (was confused with *Thelymitra venosa*) 16, 18, 38, 46, 55,
65, 66, 69, 70, 72, 77, 78.
Thelymitra decora 13, 16, 18, 38, 39, 46,
Thelymitra formosa 10, 13, 18, 38, 46, 65,
Thelymitra hatchii 13, 18, 26, 38, 46, 63, 65, 66, 65, 69, 70, 72, 77, 78.
"Thelymitra intermedia" is possibly a hybrid between *T. longifolia* and *T.*
ixiodes. 9.
Thelymitra ixioides 4, 10, 18, 13, 38, 46,
Thelymitra longifolia 4, 9, 10, 12, 13, 14, 16, 18, 24, 25, 36, 38, 39, 46, 61, 65,
66, 66, 66, 69, 70, 72, 73, 77, 78, 80, 83.
Thelymitra matthewsii 3,
Thelymitra nuda
Thelymitra pauciflora 4, 9, 10, 13, 16, 18, 38, 46, 56, 66,
Thelymitra pulchella 4, 10, 17?, 18, 38, 46, 55, 65, 66, 69, 70, 77, 78,
"Thelymitra dentata" is probably a hybrid between *T. pauciflora* and *T.*
pulchella. 17?. 38, 46.
Thelymitra "pink whiskers" 4,
Thelymitra "rough leaf" 4,
Thelymitra "Shag Point" 69,

Townsonia viridis 18, 38, 46, 49, 63, 77, 83,
Yuania australis 9, 10, 46,

Historical reprint

Henry Carse mentions Matthews's discovery of *Thelymitra matthewsii* in the following excerpt from his paper, "Flora of Mangonui County" (*Transactions of the New Zealand Institute* 1910. 43: pp203-6, reprinted courtesy of the Royal Society of New Zealand).

There are twenty-one genera of orchids in New Zealand, divided into fifty-seven species. Of these, four species are epiphytic, as are most of the orchids of the tropics, and the rest are terrestrial. Our orchids do not by any means equal their tropical congeners in gorgeousness of colouring or eccentricity of form, though many of them are beautiful, but, as a rule, small. Of the twenty-one genera, we have eighteen in this district; of the fifty-seven species, we have thirty-five.

Botanists are greatly indebted to Mr. R. H. Matthews, of Kaitaia, for the careful and useful work he has done in this section of botany. To Mr. Matthews is due the discovery in the Mangonui district of *Bulbophyllum tuberculatum*, *Thelymitra ixioides*, *T. intermedia*, *Pterostylis micromega*, *P. barbata*, *Caleana minor*, *Calochilus paludosus*, *Caladenia minor* var. *exigua*, *Chiloglottis formicifera*, *Corysanthes Cheesemanii*, *C. Matthewsii*, and *Gastrodia sesamoides*.

The epiphytic orchids which are, as a rule, found on the branches of tall forest-trees are *Dendrobium Cunninghamii*, a diffusely branching plant, with stems like miniature bamboos, narrow leaves, and white or pinkish flowers; *Earina*, two species, with rather heavily scented flowers; *Bulbophyllum*, two species, both tiny plants, with leaves issuing from pseudobulbs, from the base of which grow the flowers. Of these, *B. tuberculatum* is much more rare than the other. *Sarcochilus*, a rather thick-leaved plant, is plentiful on the upper branches of trees, and not infrequently on the trunks.

The terrestrial species are found in various situations. *Spiranthes* occurs in swamps in several localities. *Thelymitra*, of which there are eight or nine species in New Zealand, is represented in this district by five or six species (I understand a new species was discovered by Mr. Matthews this year). Most of these are moorland-plants. The flowers of this genus are less like the generally accepted idea of orchids than any other. The genus "is remarkable from the lip being quite free from the column and resembling the petals and sepals, so that the perianth has little of the irregular appearance of an orchid, but rather resembles that of an *Ixia* or a *Sisyrinchium*". Of the *Thelymitrae* the

most showy and one of the most common is *T. pulchella*, easily distinguished by the large blue-purple flowers. *T. ixioides* and *T. sp. nov.* are the rarest of the genus. What I take to be Berggren's *T. intermedia*, is not uncommon on old clay landslips and hillsides.

Orthoceras, which is not uncommon on dry banks, is rather a curious-looking plant. The flowers, which grow in the form of a spike, bear a general resemblance to a number of grasshoppers climbing up a stick. *Microtis porrifolia*, a common orchid in almost all situations, bears a close resemblance to the next genus, *Prasophyllum*, of which there are two species in the district. Both are moorland-plants, and not uncommon. I think the one now included under *P. Colensoi*, will prove to be a different species. Mr. Cheeseman, referring to it in a letter, says, "Your plant is not quite identical with the southern plant, but until a very careful comparison can be made of the structure of the flowers . . . they are best kept together."

Caleana minor, a rare plant, is found on barren-looking moorland near Kaitaia. "A most remarkable little plant. The column is horizontally placed, forming a broad pouch; the lamina of the lip, when at rest, is elevated by the slender elastic claw, and swings directly above it. When an insect alights on the lamina it overbalances, shutting up the insect within the concavity of the column."†

The flowers of *Pterostylis*, of which we have five out of the eleven species found in the Dominion, are also insect-traps; they are in form like boat-shaped hoods. *P. Banksii* and *P. graminea* are common in forests, and *P. trullifolia* plentiful on moorlands and dry open ridges in the bush. *P. micromega* is a rare swamp-orchid; *P. barbata*, another rare plant. So far the latter two are only known in this district near Kaitaia. *Acianthus*, a very small plant, is one of the commonest orchids we have; it is usually found in humus in the bush.

Cyrtostylis, a small delicate orchid, is not uncommon; usually on dry ridges.

Calochilus paludosus is another rather rare orchid; Kaitaia is one of the six places in the Dominion from which I has been reported. On clay hills from Kaitaia to Fairburn occurs a slender form of *Caladenia minor*, which Mr.

Cheeseman has distinguished as var. *exigua*. Another of Mr. Matthews's discoveries was *Chiloglottis formicifera*, previously only known from eastern Australia. *C. cornuta* also occurs, but is not common.

Of *Corysanthes*, six of the seven species occur. The flower resembles a helmet in shape, and is, as a rule, of a deep-purple colour: 'They are all shade-loving plants. In the Manual *C. Cheesemanii* is reported from "Kaitaia; vicinity of Auckland; Westport." This is a small plant, easily overlooked, and probably not uncommon in open bush and scrub throughout.

I found a few specimens at Mauku, in Manukau County; it occurs also in Fairburn, but is rare. Of *C. Matthewsii*, originally found at Kaitaia, I

have specimens gathered by Mr. A. Thompson at Aponga; it is not uncommon on mossy slopes near Fairburn. *C. oblonga* is not uncommon on clay banks and slopes. *C. rivularis*, in my opinion the handsomest of the genus, is very local; so far I have only seen it in one spot in Mangonui County, between Fairburn and Peria. *C. rotundifolia* is plentiful, though rather local; its favourite habitat is on banks of bush-creeks, or on rocks in the bed of the creek. *C. triloba*, which in many places is common, is rare in this district; Mr. Matthews found two or three specimens, young plants only, near Kaitaia. *Gastrodia sesamoides* was found by Mr. Matthews near Kaitaia and Tauroa, the only places in Mangonui County from which it has been reported. • ~

* Manual of New Zealand Flora," p. C68.

† Ibid., p. 677.

Editorial

The international debate on cultivation and propagation of endangered orchids as a means of conservation appears to be hotting up. Kew's Orchid Research Newsletter No.12 reports that a European government is formulating a proposal to make the international trade in *Paphiopedilum* illegal. The editors ask, "Is this a wise move?" The Indian Government has now banned the export of orchids from India, except in flasks. The editors ask, "Has the Indian Government gone too far?"

They remind readers of the proposal put forward at the last World Orchid Conference by the Conservation Committee of the International Orchid Commission, to set up a system of "certificated orchid nurseries" whose work assists the conservation of wild species. "Surely the recognition of the human element in the balance of ecology must be recognised by governments and scientific authorities? Extreme reaction, such as that described above, can be counterproductive."

Evidence of the success of that human element comes from the Sainsbury Orchid Conservation Project, reported in the same issue. Seedlings of *Cypripedium calceolus*, the European Lady's slipper, all but extinct in the U.K. and endangered everywhere, have been raised to the two-leaved stage, and a number are established in compost in a greenhouse. Seed-raised plants and protocorms of other rare European orchids are progressing well in culture. Granada TV showed a documentary film about the project in the U.K. in January.

"Many of us think," writes Joyce Stewart, "that our conservation-oriented projects, flooding the market with nursery-raised seedlings for example, should not be put at risk by an ill-advised attempt to introduce more legislation."

The sale of plants collected from the wild can endanger rare species and cannot be condoned. The sale of plants grown from seed or cloning can save rare species in the wild and should be encouraged.

The trouble is, it's often hard to tell which you are buying. A conundrum, this: food for deep and carefully considered thought. A timely opportunity, perhaps, for reflection about our attitudes that in the past have dismissed cultivation as a valid part of conservation.
