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Editorial

Acianthus sinclairii on Stewart Island

by Ian St George

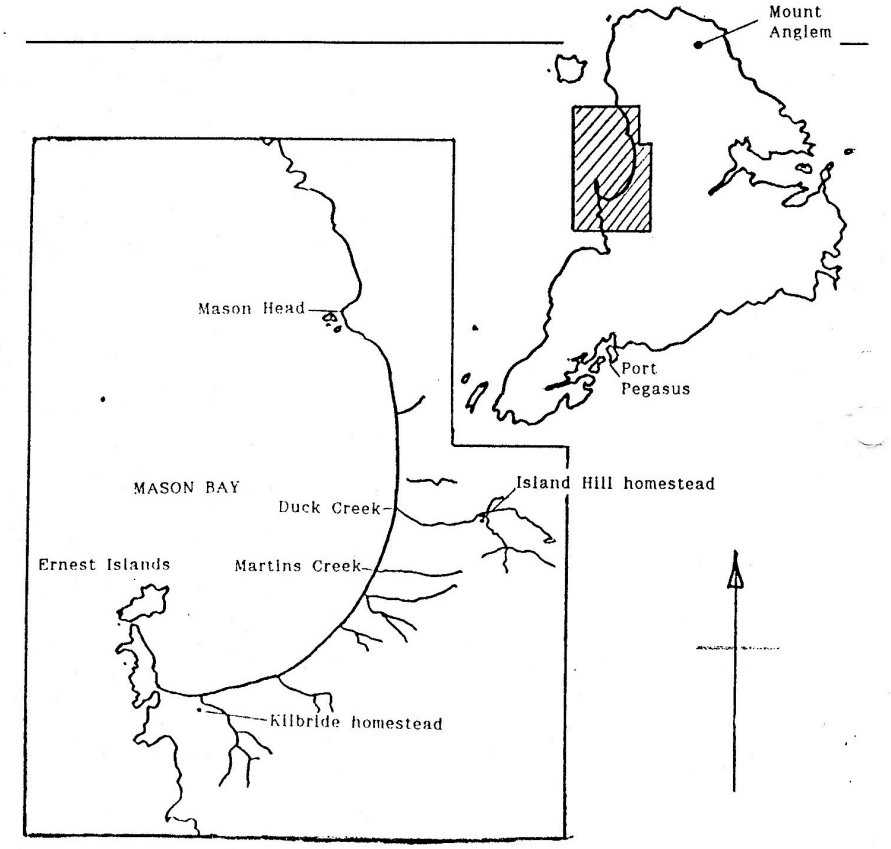
Acianthus sinclairii is common everywhere in New Zealand except, inexplicably, Otago and Southland. It has long been known from Stewart Island, but it was not until 1983, when it was found in a fen to the south of Dome Mire near Te Anau that it could reliably be stud to occur at all in the southern South Island.

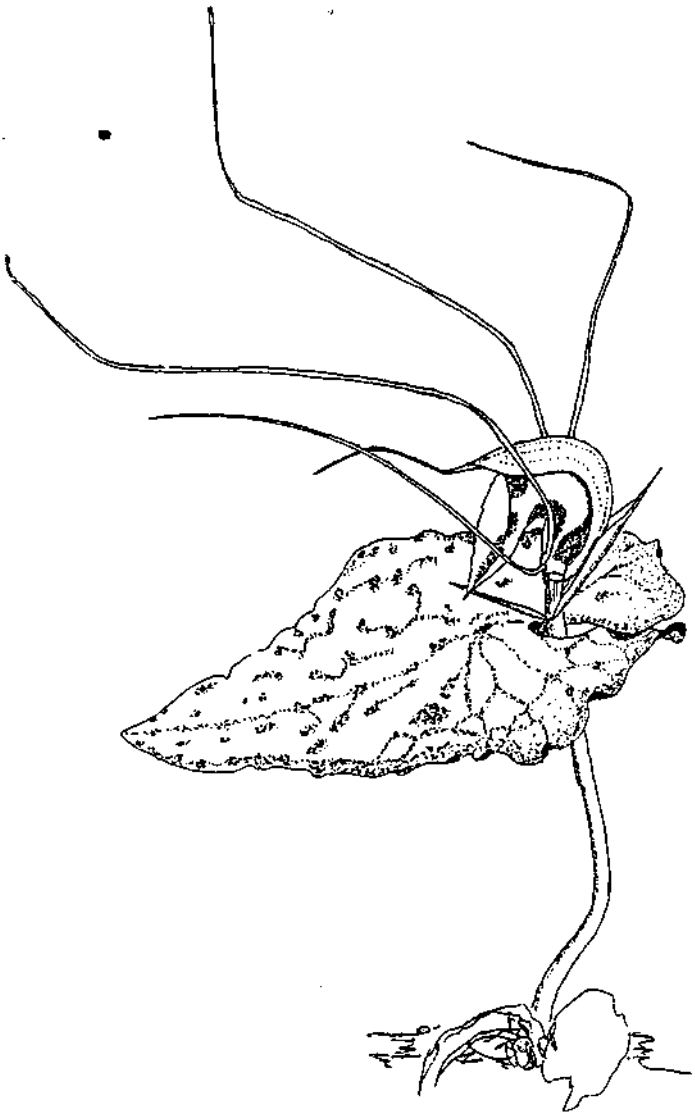
Sheila Natusch has pressed specimens in her scrapbook from Mason Bay, Stewart Island collected by Dolly Leask in seed on 8 May 1966 "between Martin's Creek and Island Hill. . . . they are very plentiful but difficult to get down here in flower.... Have found them flowering from May till early October" she wrote. The species has also been reported from the Mt Anglem track and Port Pegasus on the Island.

On 4 August two friends and I flew to Mason Bay in a private plane, landed on the old, now abandoned f Island Hill Station airstrip, whence I set off south through the scrub and bush to the headwaters of Martin's Creek. No tracks, but the white-tailed deer had kept the ground fairly open, and the going was easy.
Dendrobium and both *Earinas* were

everywhere, but no other perching orchids were to be seen. Corybas trilobus was in flower, C. acuminatus in bud (large, 5cm leaves, heavily mottled brown), and a single small patch of A. sinclairii, most plants bearing only leaves, but one with dried-off seed capsules - the first time I had seen it in the south.

There was a mile of sandhills to walk west to the beach, the occasional charcoal, oven-stones and shells of Maori middens witness to older occupation. It is an extraordinary beach - fourteen miles of a great westfacing scoop (some think the rim of an ancient meteorite crater) that collects all the ocean flotsam brought in by the prevailing westerlies - hundreds of fishermen's floats, rope, nets, plastic fish trays, crayfish pots, paper nautilus shells; a freshly dead gull accompanied unhappily by the footprints of a feral cat. An inhospitable place when the winds blow (a friend recollects only "horizontal hail"), but pleasant enou'*l the day we were there. The beach hard in many places, and a light plane can land safely. Ours had landed at the southern end, and it was a six mile trudge along the sand to reach it.





Corybas acuminatus from Mason Bay, Stewart Island

I looked in the bush behind the deserted homestead of the other (Kilbride) farm at the southern end of the beach, one of two sites on the Island where Bulbophyltum pygmaeum had been reported in the past, but without success.

A quick taxi along the sand, we were airborne, and fifteen minutes later were on the ground at Invercargill Airport.

A good day.

Original papers

Corybas cryptanthus (Hatch) in the Far North

by D.P. McCrae

Corybas (Salisbury) is a genus of tropical origin consisting of about 100 species. Distribution is from northern India and Southern China through the Malay Archipelago, Polynesia and New Guinea to Australia and New Zealand. Two species within the genus are saprophytes - Corybas saprophyticus (Schlechter) in new Guinea and *C. cryptanthus* (Hatch) confined to New Zealand.

Although Schlechter placed these two saprophytes in an entirely separate section, van Royen (1983) rejected that approach and placed *C. saprophyticu*s in section *Corybas* with *C. cryptanthu*s in section Steleocorys.1

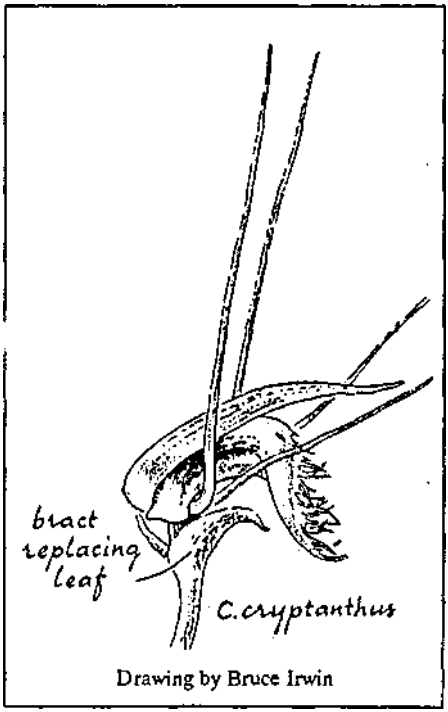
Corybas cryptanthus has been recorded in the North and South Islands but seldom collected and few specimens have been lodged in herbaria. Widely distributed, *C. cryptanthus* can be found in large colonies but tends to be rather local. Favoured habitat appears to be beech forest and stands of aged manuka and kanuka.

Unlike the usual chlorophyllous *Corybas* species, *C. cryptanthus* flowers below the leaf litter and can be difficult to detect. Flowers can be translucent or pinkish-translucent with red streaking. The base of the labellum is blotched creamy-yellow. The fine, fleshy branched rhizome extends horizontally through the litter layer.

The best time to locate this "spider orchid is in early summer when the' seed stem is elongated up to 150mm above the ground. The slender white or translucent and red streaked stems are unmistakable. Another aid to identification is the translucent bractlike scale at the base which replaces the typical green leaf of other Corybas species.

Some authors suggest that there is a food source connection with roots of associated trees via a fungal relationship (E.O. Campbell, 19722;

B.PJ. Molloy, 19833). In November 1989 a colony of *Corybas cryptanthus* was observed in the Te Paki Farm Park. Careful separation of a rhizome system from litter under manuka, however, showed no direct connection with soil1 or tree roots, features also noted by Hatch (1952).4 It could be suggested that the abundant mycelia, encouraged by the acidity, age and composition of the litter, provides the food source. Varieties of coral, dub, basket, puffball, false manuka truffles and other fungi also found this habitat to their liking. Growing intermixed were two other orchids, *Corybas cheesemanii* and *Gastrodia sesamoides*, both dependent on fungus-rich substrates.



Drawing by Bruce Irwin

Time prevented a wider search of the area, so a second visit was made in December 1989. More than three hundred seed stems were counted over a wide area. The only previous record of *C. cryptanthus* in Northland was Bruce Irwin and Owen Gibson's original discovery of the species near Warkworth in 1949. Based on the time of collection of the Type specimen from that site in 1950, the Te Paki colony was revisited on 7 July 1990. Plants marked in December 1989 were at advanced bud stage, and none were found in flower. On 19 August 1990 almost all of the plants excavated were found in flower with just a few in bud. Little is known of the longevity of flowers. The abundant seed set noted in the Te Paki colony in 1989 suggests that the species is autogamous (self-pollinating). Fungus gnats *(Myceptophila* sp.) are known to pollinate other spedes of Corybas. The high fungal infection of the litter in this area would undoubtedly attract these tiny insects. Ants and small weevils were observed on the litter.

The discovery of such a large colony of this orchid makes an interesting addition to the rich orchid flora of the Te Paki Farm Park.

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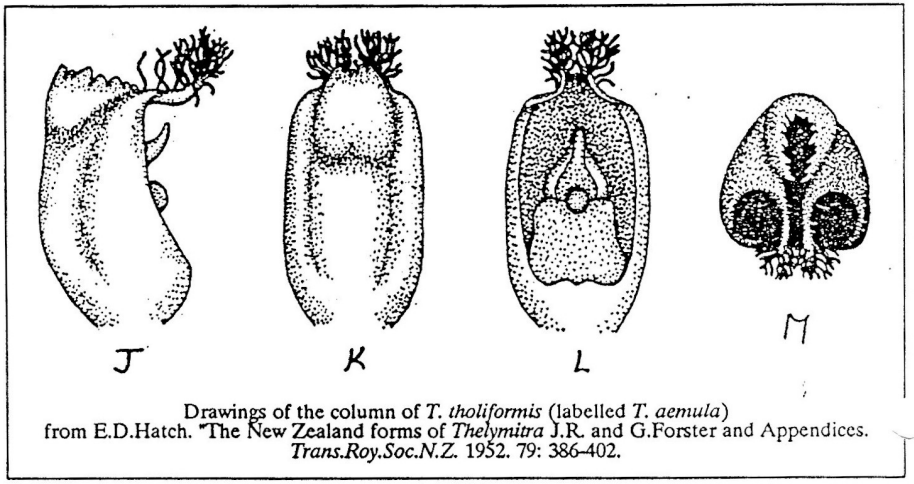
Notes on ***Thelymitra aemula, T. ixioides*** **and** ***T. tholiformis***
by E.D. Hatch

In 1940 I bought a block of land which had been cleared and burnt, adjoining my father's property in Laingholm. I planted this out in orchard and went into the army. When I came home five years later, the manuka scrub was head-high among the fruit trees and the ground cover included a goodly number of orchid species, among them two look-alike bright blue-flowered *Thelymitras,* one of which was definitely Cheeseman's *T. aemula.*

The other, now *T. tholifomis,* I assumed in my youthful ignorance to be a growth form of *T. aemula.* During the summer of 1950 (as I remember - it was a long time ago) Bruce Irwin paid us a visit and made drawings of the plant then in flower which was *T. tholiformis.* Still happ confused I used these drawings to illustrate *T. aemula* in my 1952 paper. The rest, including Lucy Moore's also erroneous identification of *T. tholiformis* as *T. intermedia,* is history.



Drawings of the column of *T. tholiformis* (labelled *T. aemula*)
from E.D.Hatch. "The New Zealand forms of *Thelymitra* J.R. and G.Forster and Appendices.
Trans.Roy.Soc.N.Z. 1952. 79: 386-402.

These two species, *T. aemula and T. tholiformis*, occur sporadically on the gum clay along the southern and eastern fringes of the Waitakere Ranges, *T. aemula* being the more common. The orchids grow singly or in groups, sometimes one species, sometimes both mixed together, as little as 40m apart. Two examples will suffice -

On Taumatarea on 2 November 1989 there were twenty-three plants of *T. aemula*, four of *T. tholiformis,* fifteen of *T. pauciflora* and only one of *T. longifolia*. Also *Microtis unifolia, Corybas cheesemanii, Orthoceras novae-zeelandiae, Pterostylis graminea* and *P. trullifolia.*

On the powerline section of the Parau Track on 9 November 1989

there were eight plants of *T. aemula* and six plants of *T. tholiformis. T. longifolia* and *T. pauciflora* were common, with *Microtis unifolia, Caladenia iridescens, C. minor,* and *Pterostylis trullifolia* also present.
T. aemula is recorded from Tauranga to the North Cape, but outside the Waitakeres and the far north, I have only three records for *T. tholiformis*. Paremoremo, Albany November 1950; Lonely Track, Albany November 1965; and Whakatiwai Scientific Reserve, Kaukapakapa 21 September 1985.
I only ever found *T. ixoid*es once in the Waitakeres, on the Kakamatua Ridge Track on 27 October 1969, a group of eleven plants, eight with spotted flowers, three plain blue; the column form and colour was identical in all. *T. ixoides* was frequent on the Auckland North Shore in the 1940s, from Birkdale to Silverdale, but has been wiped out, along with everything else, by the advance of civilisation.

Notes

¶ The Group's *Historical Series* has sold out, except for a few copies of No.1 *Colenso on orchids,* No.6 *Orchid extracts from the Matthews correspondence,* and No.7 *The Hookers on the NZ orchids.* These are available from the editor at the reduced price of $5.00 each to clear.

¶ John Dryden writes (17 September) from Taupo, "As a member of the Waipahihi Botanical Society I was a little surprised at the wording of the notice in the recent issue of the NZNOG *Journal.* I presume the 'Taupo Botanical Gardens' is intended to refer to the 'Waipahihi Botanical Reserve'. Hence I thought it might be helpful if I wrote a note to you setting out the status of the Reserve. The Reserve is administered by the Waipahihi Botanical Society, an incorporated society with a membership of about 800. The Board of the Society consists of eight members elected by the members of the Society plus one member appointed by the Taupo District Council plus one member appointed by the Taupo Branch of the Forest and Bird Society. The Society is financially independent and relies for funds on subscriptions, bequests and donations. The Reserve covers an area of about 80 acres and the work of maintaining the Reserve is carried out by volunteers. A weekly working bee is held and the working party usually numbers between twenty and thirty, mostly over 60.

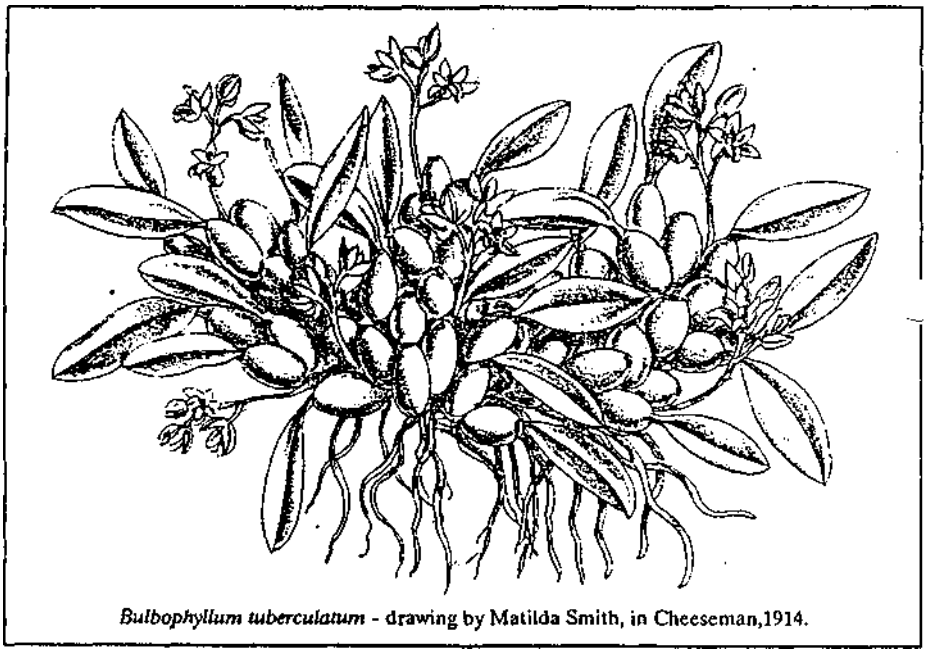
"I realise that our Chairman, Richard Clere has been in touch with Max Gibbs concerning the transfer of native orchids from Iwitahi to the Reserve.

The matter has been discussed by our Board and the Board is in favour of finding a site for the orchids in the Reserve.

"Last summer I prepared a small site in the Reserve and transferred a trailer load of material from the area about to be cleared at Iwitahi. A mass of *Corybas trilobus* has come up and some plants are at present in flower. *Chiloglottis cornuta* plants are just showing through the ground. Hopefully other species will follow."

¶ Philip Simpson, of the Science and Research Division of the Conservation Sciences Centre points out that what we have been calling "Ecological Districts" in the Mapping Scheme are in fact "Ecological Regions", so from now on mapping reports will refer to Regions by number.

¶Noeline Clements writes (18 September, from Whangarei), "Enclosed please find a list of species we have found recently.... Most of these orchids are spread through bush areas throughout the region *Calochilus paludosus* has only seen by us once locally. *Thelymitra aemula* is in several areas. Both *Bulbophyllums* are reasonably common, but most sightings of *B. tuberculatum* are 'windfalls'. Have seen them growing on both tanekaha and kauri in several bush areas - unfortunately those on the kauri will eventually be shed with the bark.



Bulbophyllum tuberculatum - drawing by Matilda Smith, in Cheeseman,1914.

We still have mixed feelings regarding publicising exact locations for orchids as several times specimens have been removed! I don't like even the common ones to be taken and won't say the name of the area where we have seen more unusual varieties.

"I'm quite happy for the enclosed information to be used in the orchid survey but would not like reserve names and orchid species found therein to be printed in the *Journal*."

"Ecological Region 6 (Eastern Northland): regenerating kauri bush. *Acianthus sinclairii* - fl. 6 June '88; *Bulbophyllum pygmaeum, B. tuberculatum* - leaves only on kauri and tanekaha 6 June '88; *Corybas cheesemanii* - fl. 6 June '88; C. *oblongus* - buds 20 July '88; C. *trilobus* - fl. 2 June '88; *Cyrtostylis reniformis* - buds 12 July '88; *Dendrobium cunninghamii* - fl. 16 Dec 89 on pohutukawa and tanekaha; *Drymoanthus adversus* - buds 2 June '88 on *Cordyline australis,* towai, pohutukawa, taraire, totara, whitey-wood; *Earina autumnalis* - fl. 4 March '89; *E. mucronata* - on totara, nikau; *Microtis unifolia; Orthoceras novae-zeelandiae* - fl. 14 Dec '88 - 'brown' fl. common, 'yellow* fl. few; *Pterostylis alobula* - fl. 6 June '88; *P. banksii*; *P. brumalis* - fl. 6 June '88; *P. graminea* - fl. 6 June '88; *P. mbricaulis* - fl. 6 June '88; *P. tndlifolia* - fl. 6 June '88; *Thelymitra longifolia.*

"Regenerating kauri/taraire bush. *Bulbophyllum tuberculatum* - fallen specimen 30 July '88 - fl. buds and seeds (immature); *Corybas* "aff. unguiculatus" - fl. and seeds 30 July '88 (fls. normal coloured plus a few 'albino' specimens) - common in this bush but scattered in other areas.

"Kauri region. *Calochilus paludosus* - fl. 30 Oct '89; *Thelymitra aemula* - fl. 7 Nov '89; *Caladenia.*

"Roadside scrub. *Thelymitra pauciflora*; *T. pulchella* - fl. 10 Nov '89.

"Regenerating kauri. *Corybas acuminatus* - fl. 31 Dec '84, 9 Oct '88 in different areas."

Thanks for the report, a valuable addition to the Mapping Scheme. The names of localities within the Region have been deleted - Ed.

¶ Nancy Adye sends a report from September sightings near Gisborne.

Bulbophyllum pygmaeum
drawing by E.D. Hatch senior
(Leaf peduncle and flower, greatly enlarged; G leaf and pseudobulb; H labellum from side; J column from side)

"Ecological Regions 20, 22: *Corybas trilobus* - some fls. E.R. 20: *Corybas macranthus* - some fls; *Acianthus sinclairii* - some fls, mostly seed;

Drymoanthus adversus - on titoki, kamahi and rewarewa - buds and seeds ' . (the *Drymoanthus* were unbelievable - small plants but 43 on one tree (a branched kamahi) and we have found over 100 plants in all and most within five feet of the ground]; *Bulbophyllum pygmaeum* - mostly leaves, 2 dried corollas (*B. pygmaeum* too was thick between ankle and knee height on some rewarewa saplings and also more diffuse on kamahi. It was on thirteen trees that we counted. I have only found it on a fallen tree in E.R.13 before; *Pterostylis trullifolia - 2* fls, seed heads; Earina autumnalis - on kamahi and old puriri stump; *E. mucronata* - on *Cordyline australis* - also E.R.19."

Conservation comment

Tim Funnell writes (5 September) from Hastings -

"In *Journal* No 34 you called for 'members views and comments on the conservation aspect of orchids', so after rereading the two articles by Max Gibbs and Doug McCrae I decided to put pen to paper.

"I agree that orchids should not be removed from the wild unless under the threat of destruction. However, can exotic pine forest be called wild? Pine plantations are planted only to be cut down after a number of years. I feel that prior to felling (i.e. forest floor destruction) interested groups should be allowed to remove plants that interest them. I don't mean just into reserves like Iwitahi, but that people should be able to cultivate them themselves. If these plants are only to be grown in green/shade houses and gardens, this is better than allowing a large portion of plants to be destroyed during felling and replanting. I will stand to be corrected, but the area that was to be felled at Iwitahi last year was to be replanted in *Pinus radiata,* not *P. nigra;* does anyone know if orchids will grow in a carpet of radiata pine needles?

"I was unfortunate in not being able to attend the native orchid weekend at Iwitahi last year. However I was given three plants from that area - a *Chiloglottis cornuta, Calochilus. robertsonii* and an *Adenochilus gracilis.*

Of these three plants only the *A. gracilis* has not shown any signs of new growth under any growing conditions, but only time will tell if this plant will survive. Some of those who took plants that weekend may have had better success than I have, while others may not have been so fortunate. So I think one should be allowed to grow native plants so long as the plants are

under the threat of destruction. This will go a long way to ensure the

plants' survival under cultivation, if not also in the wild.

"What I have said will probably throw the cat amongst the pigeons, but I think a sensible approach is needed. I don't mean that people should now rush out to the nearest pine plantation digging up orchids. What Taupo Orchid Society and all those who had a hand in setting up the Reserve at Iwitahi have achieved is great, and hopefully in the future we will be able again to collect orchid plants for ourselves out of what's left after the transfer of plants into reserves."

Drawing by Bruce Irwin

Our Conservation Officer, Doug McCrae, replies -

Tim Funnell indeed has a sensible approach. *Pinus* plantation forest is largely artificial habitat for orchids. And it is planted to be cut down eventually. Subject to permission from the owner of any private land, it is legal to remove plants. Iwitahi is a prime example where this is highly desirable. At the time of last year's field days, permission had been granted for anyone to take plants from the blocks in which trees were to be felled in the near future.

One member of the Group objected to plant removal because of the presence of a large number of nonmembers of NZNOG who may have mis-interpreted the recovery operation as a precedent for wholesale removal of orchids from the wild in general. This was a valid point. It was disturbing to hear afterwards that some participants at the field days were observed removing *Calochilus robertsonii* from areas not under threat - particularly from under the eucalypts' on the roadside bank opposite the Camp. *C. robertsonii* is a threatened species with full protection under law. All species within the genus *Calochilus* have a strong mycorrhizal dependency and cannot be maintained in cultivation. Discretion should be used when issuing invitations to nonmembers of NZNOG for participation in orchid recovery operations.

With regard to Tim Funnell's query about the potential of Pinus radiata: my observations indicate that "mature" *P. radiata* forest (20-25 years) does not provide

particularly good orchid habitat. Cloned or seed-selected trees are now used in plantations and these are usually planted at their final spacings. Unlike *P. nigra,* the needles of *P. radiata* do not fall so copiously and in their short life span these trees do not form such a deep litter. It would appear that the mycorrhizal fungi, so abundant under *P. nigra* at Iwitahi, either differs or is far less abundant under *P. radiata*. In the earlier plantings in Aupouri Forest (Northland) a close planting and a heavy thinning regimen was utilised. Little light penetrated through the dense foliage until thinning at between three and seven years. High-pruning was not a part of the early regimen. As the stands aged, areas that were unsuitable for planting and "holes" where the odd tree had succumbed to drought or wind, provided enough light for only small numbers of a few common species to grow (*Caladenia minor, C. alata, Microtis* spp., *Thelymitra* "aff. *longifolia", T. pauciflora*). These orchids tended to grow more on the bare ground in better light than in the litter under the trees. The difference between *P. radiata* and *P. nigra* can be seen in adjacent blocks at Iwitahi, although the exceptionally deep litter under *P. nigra* is partially the result of the high death rate of standing and fallen trees.

In Australia, native orchid societies conduct recovery "digs" when orchids are threatened by land development. Almost all members of these societies grow the orchids collected in this way. At the same time, they are vigorous in their defence of protected areas.

In New Zealand, native orchids are not propagated and sold commercially. Iwitahi provides a rare opportunity for growers to obtain legally and experiment with, a reasonable selection of species.

There is absolutely no point in leaving them to the bulldozer. The recent NZNOG publication The New Zealand orchids - natural history and cultivation provides information on the orchids that have horticultural potential and those that are difficult or impossible to maintain in cultivation. In general, rhizomatoid species and others with a strong mycorrhizal dependency are unsuitable for pot culture. (This is why Tim Funnell's *Adenochilus gracilis* specimens are not thriving). Some may re-establish when transplanted to suitable wild or garden habitat, but before this is attempted, some knowledge of their ecological requirements is essential. Perhaps NZNOG should consider field days, trips and workshops in various regions. Local enthusiasts could discuss conservation in their areas and share experiences in cultivating native orchids. Despite the success of the NZNOG Mapping Scheme, information on the distribution of species throughout the country is not totally conclusive. To help fill the gaps, these groups could also get together for surveys of thc various Reserves within their regions. And instead of just listing the orchids seen, information about the ecology of species and their habitat could also be noted. This information is important for conservation. Before NZNOG makes an approach to the Department of Conservation for protection for any species, we must ensure that its numbers and distribution have been accurately assessed. This can be accomplished

only through comprehensive coverage of potential habitat.

Enthusiasts in the various provinces could consider getting together for an informal meeting. Members of these groups who have local knowledge could take turns in leading field trips. Any members from each of the provinces who would like to volunteer as a coordinator should contact the NZNOG Conservation Officer (Doug McCrae, 15 Glendon Ave, Avondale, Auckland 7). Duties of a coordinator would be collation of information gathered on fieldtrips and passing this on to the NZNOG convenor for the Journal.

A current list of members of the NZNOG can be found in Journal No. 34, June 1990, ppl5-16.

Historical reprints

Pterostylis tristis (?) near Outram in 1882

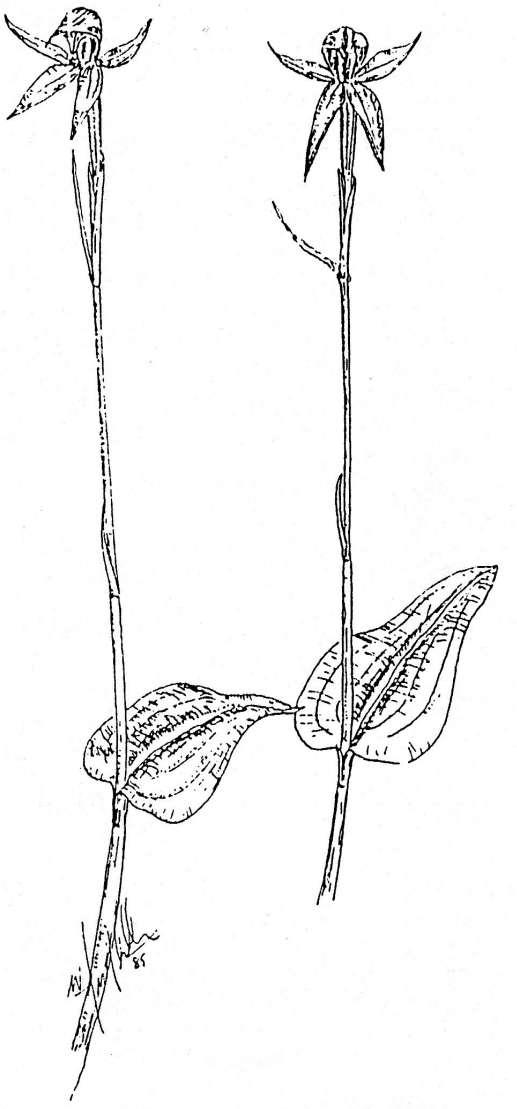
In the short-lived *Journal of Science* (p 48), the Dunedin Naturalists' Field Club reported in 1882 that Mr S. Fulton had found *Pterostylis aphylla* near Outram - Cheeseman realised their mistake, and identified the plant with *P. mutica,* though many of the early reports of the latter have since oroved to be what was until recently thought to be *P. cycnocephala*, now tagged *P.* "aff. cycnocephala" in New Zealand. *"P. mutica"* in New Zealand has been identified as *P. tristis* (Colenso, 1886) by Brian Molloy. True *P. mutica, P. aphylla* (and probably *P. cycnocephala*) are different Australian species. Confused? Spare a thought for the taxonomists - *they* have to sort it all out.

> The spring meetings of this Club have not been so well attended as usual, but the individual members have been doing good work, particularly in the department of entomology. Six meetings have been held, and excursions made to the various localities in the neighbourhood of Dunedin. Three plants not hitherto found in the district must now be included in the Club's lists, viz., *Cotula australis*, Hook, J., and *Polycarpon tetraphyllum*, L. (introduced), both of which occur abundantly at Purakanui; and the rare *Pterostylis aphylla*, Lindley, found by Mr. S. Fulton near Outram. Two considerable collections of

The first time Adenochilus gracilis was reported in the South- Island

That naturalist, politician, teacher, and student of the pollination of the New Zealand orchids, G.M. Thomson, related making the first South Island identification of the slender forest orchid *(Adenochilus gracilis)* near Lake Hauroko in the same issue of the *Journal of Science,* pp 71-2.

ADENOCHILUS GRACILIS (Hook, F.)—This rare and curious orchid appears to have been found hither to only in the North Island, and at one locality. In Hooker's Handbook of the FI. of Nov. Zeal, the only remark as to habitat is : " Bay of Plenty, Colenso and in Mr. Colenso's paper on the Botany of the North Island, in Vol. I. of the N.Z. Inst. Trans., the plant is recorded as found near Lake Waikare. With these exceptions, no mention of its occurrence has been made in any New Zealand publication. It was with much pleasure therefore that I found the plant this last January, when botanising in the neighbourhood of Lake Hauroto (Howloko), in the south-eastern corner of the South Island. It grows in the dense Fagus forest which extends from the Waiau river westward to Preservation Inlet, and is associated with *Caladenia m*inor. From its small size, and its growing among dense patches of soft green moss, *Nertera* and *Corysanthes*, it is very easily overlooked, except when in flower. It is interesting to find that this curious generalized form has so wide a range. From the fact of its being found in. two so widely separated localities, it is probable that its occurrence in intermediate regions has been overlooked. Mr. Petrie informs me that he believes it occurs in the forest at the head of Lake Wakatipu, but he has only seen the leaf. G.M.T.



Adenochilus gracilis: drawing by Max Gibbs from his book
An appreciation of New Zealand native orchids on the Central Volcanic Plateau

"All those I have spoken to who have seen *New Zealand orchids* agree it is an excellent production, covering material not previously published, and congratulate you on it. I was particularly interested in the biographical notes, and the structure of orchids, something I am trying to become more familiar with.... I have not the facilities nor the inclination for growing our native orchids, but I am sure the chapters concerned will be valuable for those who do. All-in-all a very worthwhile production" - Val Smith.

"We are enjoying our copy of the newly released *NZ orchids* book - thank you very much for increasing our knowledge in this way." - Noeline Clements.