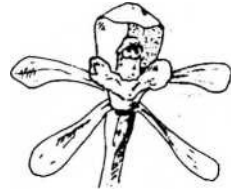


New Zealand Native Orchid Group

Newsletter No 23.
September 1987.

Editor : Ian St George
45 Cargill St
Dunedin



Editorial

Orchid hunting in farthest England - Part 3.

Legislation to protect Britain's endangered plants came with the Wildlife and Countryside Conservation Act of 1981. Thus a penalty of 1000 pounds for each plant be imposed if you intentionally

- ◆ pick, uproot, destroy or sell any of the 62 very rare plants under special legal protection
- ◆ collect or sell their seed
- ◆ dig up any wild plant without the permission of the owner or occupier of the land
- ◆ plant or otherwise cause to grow in the wild some species not native to the country.

Now further protective legislation is being considered by the British Parliament, but there are problems.

While environmental groups are pressing for compulsion, the government appears to be committed simply to persuasion. Landowners are asked to accept compensation for not developing key sites: In effect they are paid to do nothing - all they have to do to get money is to threaten to destroy a site, according to a 1986 report.

Many people were enraged In 1985 when In Scotland a botanically sensitive area of farmland was bought by a City syndicate. The land was quite unsuitable for forestry, but the company immediately announced its intention to plant pine trees, and as quickly applied for compensation not to do so. The question becomes one of political philosophy: may a landowner do as he wishes on his property, or should he regard himself rather as its custodian, on behalf of all of the people, for the time of his tenancy?

Meantime Nature Conservancy Trusts are active. David Lang, a Lewes, Sussex veterinary surgeon and author of the book *Orchids of Britain* says that vets are well placed to spot threatened plants on farmland. Then the best approach is to get on side with the farmer, help him develop a sense of pride that he possess something rare and beautiful, reassure him that Its preservation will not cost him anything, and then, if it is possible, persuade him to share or hand over management of a sensitive area to the Trust. The Trust will advise about the right amount of grazing, pest control, fertilisers, weeding, drainage and so on, to encourage the plants. David Lang manages a site surrounding an old chalk pit where several orchids grow, and leads a management team that he has handpicked for their expertise In a variety of relevant disciplines.

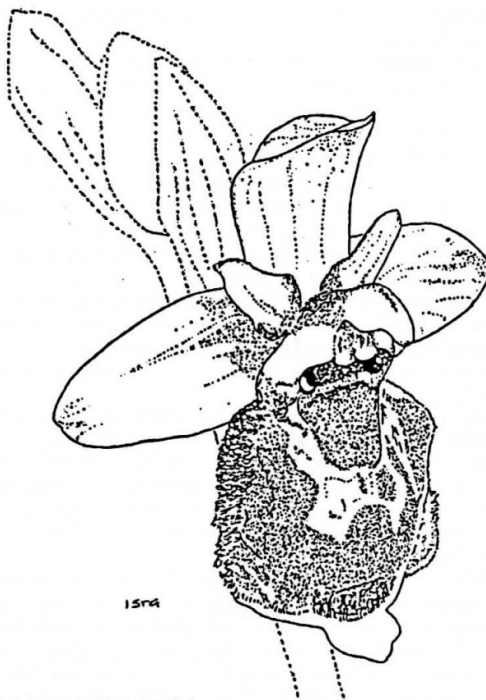
He is typical of a cadre of quietly determined people whose anxiety about the destruction of wild plants (and animals) has led to change. Their character is neither that of the stereotyped British naturalist (eccentric, flighty, impractical), nor that of the stereotyped protester (young, loud, angry): these people are knowledgeable, articulate, and reasonable. They are also quietly insistent enough for the logic of their cause to persuade others that saving rare plants makes good sense. The growing interest in rare plants has itself been a mixed blessing though. Too

many visitors can wreck a habitat; they trample young plants, or simply compact the soil so that seedlings will not thrive. Some places are therefore kept secret. If you ask to be allowed to visit the English Lady's Slipper you will not be refused; the local Nature Conservancy Council will simply deny all knowledge of the site. When I phoned to ask for the exact location of the Military orchid, my contact had already left for the site, and nobody else could, or would, tell me where it was - fortunately my map reference was enough. When we joined a party to visit the Late spider orchid there were just too many of us - the vegetation around the three flowering specimens was flattened. There is a Catch 22 here - there seems little point in saving plants if nobody is allowed to see them. And yet if too many people see them, the plants may be damaged or destroyed.

In a valley below the Eiger in Switzerland last year we braved horseflies, sandflies, and, it seemed, every size and shape of stinging and biting brute between — the New Zealander should leave the short pants at home when tramping abroad - because several hundred Slipper orchids grow there. A British expert swore me to secrecy and told me to "Drive to Lauterbrunnen, take the train to Wengen, the walkway to Biglenalp, go down across the bridge, up between the two cowsheds, through ..." - I shall say no more.

Dozens of people had been given the same secret Instructions though, for there they were, wandering about, trampling young plants in their eagerness to see and photograph the adult plants and flowers. Yet if entry is forbidden, who is to benefit? It's a problem.

Could we let it happen in New Zealand? Doug McCrae addresses the question in an article (written after my first editorial and before he had read this and the last one) below.



The Late spider orchid

Notes

◆ Congratulations to Dan Hatch who will deliver the Lucy Cranwell Lecture at a one day symposium on the Botany of Auckland, organised by the Auckland Botanical Society to celebrate its 50th jubilee, on 3 October, at the University Conference

Centre; his lecture will be entitled "The small green orchid". Those interested should write to the Secretary, 14 Park Rd. Titirangi, Auckland 7.

◆The New Zealand Botanical Society's Newsletter of June 87 notes that specimens of *Bulbophyllum tuberculatum* have been retrieved from recent windfalls in the Awaroa Scenic Reserve, Hauturu, Kawhia and under matai/kahikatea forest in the Awaroa Wildlife Management Reserve, Lake Whangape. The orchid seems locally common on rimu/tawa forest and matai/kahikatea forests of the region. Good news indeed.

The cover of the same issue shows Hugh Wilson's excellent drawings of *Pterostylis* species from Stewart Island.

◆A letter printed in the Native Orchid Society of South Australia *Journal* reads (in part), "As a visitor to the 'Orchids 86' show, I was horrified by the Perth Orchid Society display of cut native orchids. Thousands of wild orchids including some other orchids so rare they have not been named had been picked and jammed "Together in bunches. That display should never have been accepted...."

◆Lyn Young, Mosgiel, writes, "The prechristmas trek to Swampy Summit took place on 21 December 1986. We met at the foot of the Skyline Walkway and proceeded to the Summit at over 2000ft - at this altitude the climate is classed as subantarctic. In winter mostly wreathed in clouds, mist, and squalls of rain, hail and snow. The plants are all stunted, predominantly mountain tussock, with peat and living sphagnum bog, dracophyllum, and wild Spaniard the tallest. Mosses, sedges, small ferns, grasses, and of course the orchids, are interspersed. *Pterostylis montana* was very evident, all in flower; *Caladenia lyalli* also in flower, in large numbers; *Aporostylis bifolia* only in bud in the sphagnum, but flowering in drier places; the plants in moist places had dull green, long hairy leaves and stems, while the ones in drier areas had shorter broader leaves, decidedly less hairy, and considerable reddish blush in the shiny green; they all maintained the roughly 3:1 ratio of leaf length, with 10cm leaves in the moist areas and 6cm in the dry. *Lyperanthus antarcticus* in bud and quite common; *Chiloglottis cornuta* in flower, not so common here; *Thelymitra longifolia* in bud, other *Thelymitras* not flowering and unidentifiable, but all common. *Prasophyllum colensoi* in flower. Swampy Summit is only 20km from Dunedin, and with its peculiar subantarctic climate and proximity it makes an interesting half-day excursion. No great athletic prowess needed, drive all the way, find all the species within 100 metres of the car. Our flowering period for each species is very short - only about two weeks for each - so we have to time our visits exactly. This year the grasses on Swampy are luxuriant, and most of the orchids (which grow in open spaces in short grass) will not compete; this year all the orchid plants seem stunted - *Caladenia lyalli*, normally 25cm at this altitude, was only 12cm; *Pterostylis montana*, usually 12cm, only 6cm".

◆Phil Chandler, Wellington, reports on a trip on 20 April on the circular track, Williams Park, Days Bay, "We found *Earina autumnalis* not in bloom, *E. mucronata* with an occasional flower - both species plentiful; *Dendrobium cunninghamii*, a fair number of plants; *Drymoanthus adversus*, quite a few plants; *Bulbophyllum pygmaeum*, only one patch that had died out with about four small pieces on the outer edges still green and apparently surviving. The other find was two patches of what I think were *Pterostylis trullifolia*; there were rosettes of four or five more or less heart shaped leaves 5 to 7mm broad and what I think are flowering stems starting to grow - about 50mm high; both patches in pines at lower levels".

◆Dean Pendrigh writes from Christchurch: "Orchid finds 1986-7 : View Hill carpark area 16 November: *Pterostylis cynocephala* in flower, some in bud; plants had 2-5 fls. *Pt. tristis* In fl; plants smaller and browner. *Thelymitra hatchii*, *T. pauciflora*, *T. longifolia* all In bud. *Chiloglottis cornuta* fls almost open. Lake Daniels 13

December: *Pt. australis*, *Pt. irsoniana*, *Pt. montana* all in fl. *Gastrodia cunninghamii* fls still developing - one plant had 43 fls. *T. longifolia* in bud. *Adenochilus gracilis* most finished but some still in full bloom. *C. cornuta* past flowering. Lots of leaves of (?) *Corybas trilobus*, and another *Corybas* sp. Tarn Nature Walk - Lewis Pass: *Prasopphyllum colensoi* - some in fl, others had fl stem emerging from leaf. *Aporostylis bifolia* in bud growing in sphagnum moss. Darkies Tce Rd 26 December: *Orthoceras strictum* in fl - only two plants this year cf. last year. *Microtis unifolia* in fl. *Thelymitra* sp. - past flowering. *G. cunninghamii* in fl. Truman's track 27 December: *Drymoanthus adversus* growing on branches of fallen rata. Tiropahi track 28 December: *A. gracilis* in seed growing on sphagnum. *A. bifolia* fl, in sphagnum. *Corybas* sp., *Earina autumnalis* and *E. mucronata*, *D. cunninghamii*, no fls. *T. pulchella* - blue fls with dark blue stripes growing in pakihi. *T. venosa* - blue fl with darker blue stripes, no cilia, also in pakihi. Four Mile Rd, Charlestons, blue and pink flowered *T. venosa*. Over 65 plants of *T. pulchella* in fl on a hot dry south-facing bank about 4x2m - even more plants past flowering. Peel Forest 10 January: *T. hatchii* in fl. *A. bifolia* in fl under *Dracophyllum* scrub."

◆ PC Reece writes in the March 1987 *Journal* of the Native Orchid Society of South Australia: "... *Spiranthes*, this time a pure white colour form and it was noted that both clockwise and counterclockwise spirals occurred in full flower". The white form grows here too - Bruce Irwin showed me a slide from Rainbow Mountain, Rotorua



The Chinese word for *Spiranthes sinensis* is "ni" ("fragrant ribbon-grass"), and SC Chen (who did the calligraphy for the word ni - copied from his paper on Chinese orchids in *Orchid biology II, reviews and perspectives* edited by J Arditti) quotes enigmatic words from the 10th-6th century B.C. *Shih Ching* ("The Book of Songs"): "Saying that there is pottery on the road, and fragrant ribbon-grass on the mound, Who had deceived my darling? I am worried and on the alert".

◆ New member Thom Pendrigh is concentrating on the Oxford area of Canterbury, locating and mapping the positions of orchids from the Waimakariri River northeast to Mount Grey. which contains the View Hill Reserve. The area is the type locality for *Thelymitra hatchii*, and Lucy Moore described the area in her "An orchid walk In North Canterbury".

Review

◆ Collin and Dorothy Woolcock's *Australian terrestrial orchids* (Nelson, Melbourne 1984) is a delight. Collin Woolcock took up botanical illustration after he retired, and he has been successful - an exhibition of orchid paintings, and illustrations in many publications, including the *Orchadian*. His pen drawings are skilled, but his paintings are beautiful: he strikes exactly the right balance between art and science, as only a very good botanical illustrator can. Several of the familiar terrestrials we share with Australia are portrayed here, but there are endemic Australian species that will set you thirsting for a trans-tasman excursion. The text is apt if brief, and common names are given.

Notices

◆ The Kaitaia Orchid Society presents its First Annual Native Field-days, 7-8 November 1987. With assistance from local NZNOG members, Brian Molloy will lead guided field trips on both days. Saturday will be spent at Kaimaumu Swamp, north of Kaitaia, viewing *Calochilus campestris* and the many other species known from there. Ahipara Gumfields wilderness will be Sunday morning's venue. There are large numbers of terrestrial species here and there are spectacular views of Ninety Mile Beach and the coast. Social on Saturday evening at Forest nursery. Smorgasbord (BYO) provided together with a slide show and address by Brian Molloy. Apart from a small charge for smorgasbord there will be no charge for the weekend.

Everyone welcome. For more details contact D McCrae, Parau, RD 3, Kaitaia. Phone 509 Peria.

◆ Copies of *Orchids of Western Australia - cultivation and natural history* are available at A\$6.50 plus postage from the Australasian Native Orchid Society, PO Box C106, Clarence St, Sydney.

Articles

Native orchid conservation

— a personal view

by Doug McCrae, Parau, RD 3, Kaitaia.

Many of you would have been familiar with the extreme measures needed to protect Europe's diminishing number of native orchids as Ian St George has described. He poses the question, "Could we let it happen in New Zealand?" The threat to Europe's native orchids is mainly the result of large populations, and having been "developed" for hundreds of years, relatively little habitat remaining. New Zealand is a "young" country in a land development stage, so pressure on our orchids is mainly from habitat loss. The second major threat is from population, but this is confined mostly to areas adjacent to large cities.

The formation of a government Department of Conservation will be very useful, as will recent trends away from swamp and hill country development for agriculture. But a lot of damage was done in the few years prior to 1984, when such development was heavily subsidised by government. In my own district a lot this land is now - and always was - uneconomic to farm and is now reverting to gorse and manuka scrub (mostly gorse). The one thing no longer present is the orchid. There are at least three species now extinct from this county; one, a yellow *Thelymitra* reported by Mr Ross Michie of Kaitaia, had never been brought to the attention of any orchidologist or professional botanist. There will always be conflict of interest when it comes to land use. Inevitably, "trade-offs" have been common. A good example of this is the Kaimaumu Swamp, north of Kaitaia. The southern catchment of this swamp, as well as supporting a number of existing farms, is being mined for gums and resins. The process involves removing all peat to a depth of some metres, processing it, and replacing it afterwards. This area is the home of the recently rediscovered *Calochilus campestris*. It has not been thoroughly botanised for this orchid, of which only seven plants are known.

The northern catchment (Motutangi) has been mostly reserved. However, subsequent to defining a boundary to this reserve, three rare/endangered orchid

species have been recorded from the Crown farm development Immediately adjacent to it. *Cryptostylis subulata* was there in large numbers after rotary hoeing had chopped up the roots of the plants (the species grows from root nodes). Once in large numbers, *Spiranthes sinensis* (new subspecies) has now gone, and a "new" *Thelymitra* sp. is all but extinct. I was unsuccessful in an attempt to have the reserve boundary moved a short distance to accomodate the large number of *Cryptostylis* plants. The *Thelymitra* sp. and rapidly disappearing *Spiranthes* were not noted until some time later.

This lack of effective botanical survey prior to clearance, for Crown development has seen the demise of many orchids. Orchid mapping and specific site records will be invaluable in the future. There has been a shortage of botanists, especially those with a good knowledge of the orchids, employed by government in the past. Perhaps it might be a good idea for regional botanists who are working in orchid country to call on the services of knowledgeable orchidists. It should be remembered that orchids in different parts of New Zealand face different threats, and that a much wider perspective of those differences than has been evident in the past is required. In Northland the land is generally of low fertility and the weather is extreme. Consequently the development has been slower and much later than in most other parts of the country. In recent times the threat to its orchids has been the bulldozer, fire and logging destruction of native forest remnants. Conversely, the biggest threat to orchids near Auckland or Wellington comes from light-fingered folk who frequent the magnificent ranges of hills on their borders.

Each area has its own specific conservation problems. Today, most of you will have noted that there is a general trend amongst the population to a better understanding and appreciation of the native flora. The confrontational approach to conservation, whilst necessary at times in the past, is now almost outdated and required only occasionally at corporation policy level. It has been my experience that landowners, when approached in a congenial manner, will almost always be conducive to conservation on their patch. The level of conservation may be a little contentious, but the desired effect will generally be realised. The traditional "greenies" approach has in the past immediately aroused "fire and brimstone" in many landowners.

As a last resort plants should be salvaged from inevitable destruction. Some people obtaining plants in this way may lack the knowledge or be unable, for whatever reason, to cultivate them. If so they should have them transplanted by knowledgeable native orchidist to a suitable "safe" new home. This need not necessarily be another natural native orchid habitat, but could be public gardens which have a good range of habitat, e.g. Pukekura Park, New Plymouth; Botanical Gardens, Taupo; Eden Garden, Auckland; and no doubt many more. Some already have a good range of orchids. Places such as these could present native orchids to people without their having to venture into natural habitat, with the inherent risks to plants.

As concerned native orchidists we all have a duty to do all we are able to conserve habitat and plants. I for one do not look forward to camping out all night in inclement weather, surrounded by tripwires, chained to the trunk of a *Thelymitra* and beating off all comers with last year's flower stalk!

If we all do our work It won't happen In New Zealand!

Terrestrial orchid seedlings, anyone?

by Warren Stoutamire,

Biology Dept, University of Akron, Ohio 44325, USA.

Have any members of the New Zealand Native Orchid Group tried raising native orchids from seeds, using the sterile techniques used for horticultural orchids? This might be a very useful area to investigate for several reasons. It can give increased understanding of the early growth stages of orchids and their ecological requirements; it may allow some species to be grown in quantity; and it might provide material for reintroduction as well as reduce the temptation to dig endangered plants. Basic procedures are not complex and are described in several texts and journal articles. I have found that some terrestrial orchid seeds germinate and grow readily, while others grow poorly and usually die when transplanted from their sterile bottles, or do not germinate at all.

My seeds have all come from Australia but many of the same genera and some of the species occur in New Zealand and should behave similarly in laboratory conditions. Seeds of many terrestrials lose viability within a few weeks and should be freshly collected if possible. I have germinated terrestrials on several artificial media, with varying success, depending on the species. Dr Arditti (1982) presents a good review of orchid seed culture methods and media. Even the uncomplicated older media, such as those of Knudson, may be adequate for some orchids.

I surface sterilise seeds in a filtered aqueous solution of calcium hypochlorite although a diluted household bleach (5% diluted to 1%) is just as effective and easier to prepare. Seeds are shaken in one of these solutions for twenty minutes and transferred to sterile media, using aseptic technique.

Inoculated bottles or flasks are examined daily for two weeks for the presence of contaminating fungi or bacteria. If these appear (and they certainly will) remaining uninfected seeds can often be transferred to another flask leaving the contaminants behind. After the quarantine period is over flasks are kept in the dark until seeds show obvious signs of swelling and germinating. When *Pterostylis*,

Thelymitra, *Orthoceras*, *Prasophyllum*, *Microtis*, *Calochilus* and *Caladenia* seedlings begin to produce a small shoot at one end of the protocorm the bottle should be moved into a well lighted area. Fluorescent lights work very well.

Seedlings of most species develop slowly and may not require transfer to new media for up to a year. Some *Thelymitra* seed samples have high rates of germination and seedlings may become crowded, requiring more frequent transfer to fresh media.

When roots appear, the seedlings may be transferred to soil and this step is where most plants are lost. Humidity must be kept high for several weeks until the roots become established but the high humidity also encourages pathogens which can quickly wreck a pot of seedlings. *Thelymitra* and *Pterostylis* plants flower here two to three years after seed germination. The only *Caladenia* which has flowered here, *C. carnea*, bloomed in its second year of growth while still in the flask.

Caladenia, *Prasophyllum* and *Calochilus* species grow in flask but usually die quickly when removed. The work of Warcup and Clements in Australia suggests that mycorrhizal fungi must be present for successful growth and the transplant problem here is undoubtedly exacerbated by absence of appropriate fungi. I have inoculated soils with debris taken from around seed-producing plants but this has not led to increased survival. Sterilised soils are now being pre-inoculated with natural soil debris and seedlings will be later transplanted from flasks. Many

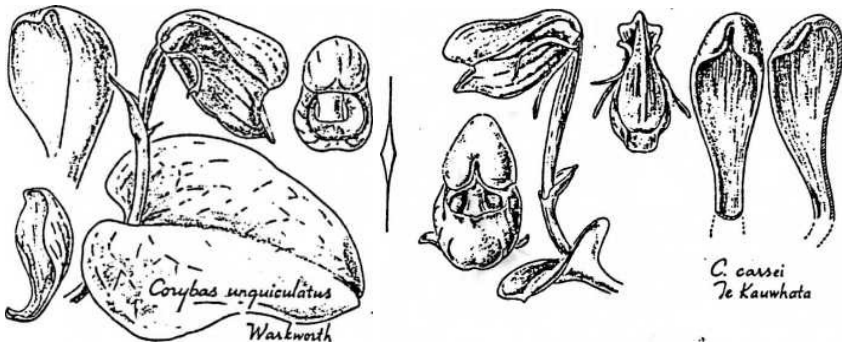
months will pass before I can determine the effectiveness of this. Specific orchid mycorrhizal fungi should be used but these have not been available.

Vigorously flowering, free living plants are the goal. Arriving at this goal will require solving many physical and biological problems. I would welcome contact with anyone in the New Zealand Native Orchid Group who is currently exploring the subject of seedling growth and establishment in terrestrial orchids, with this goal in mind.

Reference

Arditti J, S, Cleients, C East, C Eaaley, C Eishiura, E Erast, 1982. *Orchid seed germination and seedling culture a manual*. Pages 243-370. In J. Arditti, ed. *Orchid biology. II. Cornell University Press, Ithaca. New York.*

Corybas carsei
compared with *C. unguiculatus*
by Bruce Irwin, Tauranga.



The accompanying illustration concentrates on the most significant difference between the two - the shape of the tip of the dorsal sepal. Cheeseman in *Flora* 1925 stated "...extreme tip incurved and emarginate and slightly thickened and papillose". That description fits the plants from Te Kauwhata though emarginate seems to understate the "hare-lipped" appearance. Later writers seem to have overlooked this feature, concentrating instead on the labellum. Those writers generally had to depend on pressed or pickled plants, and even if they had seen one species live, they probably had not seen both.

I have made careful drawings of three fresh flowers of each species, but because *C. carsei* flowered three months later than *C. unguiculatus*, direct comparisons were not possible. For that reason and because of the small numbers sampled, apparent differences relating to the column have been omitted from the following tabulation in the meantime.

C. carsei (Te Kauwhata)*Dorsal sepal*

Apex deeply cleft and margins inturred.

Margins thickened towards apex.

More or less equals labellum in length.

Towards apex, outer surface minutely papillose.

Labellum

Midlobe & front margin of lateral lobes two to three times thicker than rest of labellum.

This thicker area towards apex carries backward facing hairlike calli which end abruptly at the inner edge of the thickening and diminish in length towards apex. Short appressed backward-facing calli also present along the raised midline of labellum nearly to column

Lateral lobes of labellum meet aside to form a tube.

Apparently butted - not overlapped - Easily separated.

C. unguiculatus (Warkworth)*Dorsal sepal*

Apex not cleft - obtuse to acute - often infolded over lateral lobes of labellum giving appearance of shallow sinus.

Not so thickened.

On mature flowers distinctly shorter than labellum. May be almost equal in bud.

Apex not papillose.

Labellum

No thickening noted

Long prominent backward-facing cilia only on raised midline of labellum, from near apex to about 3/4 column length, where they end abruptly. Some flowers may have a very few short cilia (or calli) close to nerves of midlobe.

Lateral lobes distinctly overlapped to form a tube. Not easy to separate.

Townsonia viridis (Hook, f.) Schlechter by ED Hatch. Laingholm.

This plant was first found by Ronald Gunn (of *Chiloglottis gunnii* fame), near the base of Mount Wellington In Tasmania, in October 1939, and specimens were later sent to JD Hooker at Kew.

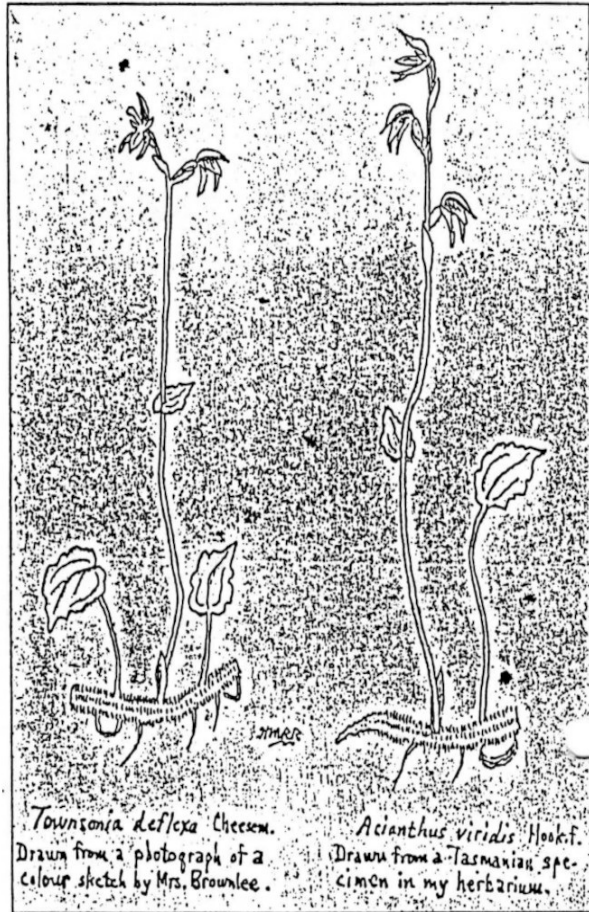
In the Flora

Tasmaniae 2: 1860. p372.

Hooker described it as *Acianthus viridis*. In November 1904 W. Townson found it near Westport In Nelson and sent material to Cheeseman at Auckland.

Cheeseman in his turn founded the genus *Townsonia* and described *Townsonia deflexa* In the Manual NZ Flora Ed.1: 1906. pp691-2, and Illustrated and further discussed it in the *Illustrations NZ Flora* 2:

1914. t198. In *Fedde. Repertorium Spec. Nov. etc.* 9: 1911. p250 Schlechter transferred the Tasmanian species to *Townsonia*. and in the *Victorian Naturalist* 50: May 1933, p 106, t.19 HMR Rupp concluded that the Tasmanian and NZ plants were identical and that there was only one species, *Townsonia viridis*. The illustration was drawn for me by Rupp in 1944, and copied from the plate in the *Victorian Naturalist*.



Rarities in the south

by Ian St George, Dunedin.

Janette West found *Pterostylis areolata* in the Taieri River Reserve, flowering in late November 1986 at the edge of the bush - the first sighting in Otago for years - *Flora of NZ* lists "possibly Otago" in its distribution. *Flora* also records *Pterostylis foliata* from Otago, and it is certainly listed in Petrie's (turn of the century) papers - from Signal Hill In Dunedin and at Tuapeka Mouth - but as far as I am aware nobody has seen it recently. Bruce Irwin recalls *P. tristis* from Sandymount on the Otago Peninsula, but I fear it is gone - repeated searches have been fruitless there - this year I will try the Horse Range north of Dunedin, where it has been reported in the past, but I think a lot of the early reports confused *P. tristis* with *P. cyenocephala*. *Pterostylis banksii* var. *banksii*, one that has the very curved dorsal sepal of var. *patens* (though not the "inflated" flower), and *P. australis* all grow in one colony on the Cascade track (by the Milford Sound road) - are they really different species? Our common tussockland *Pterostylis* is probably undescribed - a pale green plant similar to *P. montana*, but with some critical differences. .

Acianthus sinclairii remains elusive in the south - on Stewart Island Hugh Miller has seen it at Port Pegasus. Sheila Natusch has pressed specimens collected by Dolly Leask from Island Hill (flowering May to October), and others have seen it on the Mt Anglem track, but in mainland Otago and Southland I am aware of only one report - from Dismal Swamp (aptly named) near Te Anau by Dr Burrows; he has also mentioned *Corybas cryptanthus* at Shallow Bay on Lake Manapouri ("also Manapouri" says *Flora of NZ*), but I have looked there often and in vain. *Townsonia viridis* was found by David McNaughton, Jim Forrest and Gordon Watson a few years ago in the Longwoods near Invercargill, and apart from a specimen in the Otago University Botany Department herbarium from Cascade Creek I know of no other recent sightings.

Gordon Watson and David McNaughton found *Gastrodia sesamoides* in the Waituna bog near Invercargill, and Hugh Wilson records the plant from Stewart Island.

Bulbophyllum pygmaeum appears to be confined to the west - I have found it only at Lake McKerrow and Martins Bay. *Drymoanthus adversus* is by no means common in the east - a few colonies in the Catlins forests. *Microtis oligantha*, once only rarely reported down here, now appears to be common in alpine meadows - I saw masses of it in the Caples river flats in February, and have seen it along the Glenorchy Road at the side of Lake Wakatipu - Peter Johnson found it at the Mavora Lakes. He also found *Spiranthes sinensis* at that northernmost tip of Otago, Big Bay on the west coast, a few years ago, the only record from this province. I found a curious *Thelymitra* at Shag Point, just north of Dunedin - a tall plant, 50cm, enjoying the warm microclimate under manuka where the yelloweyed penguins nest; plain blue, no stripes or spots, with white cilia and the tuberculate post-anther lobe of *T. decora*, Brian Molloy has found similar plants at Banks Peninsula; I hope I can find it again this year and with Brian's help make a positive identification.

Our full list from this vast, cool area "south of the Waitaki" is therefore: *Acianthus sinclairii*, *Townsonia viridis*, *Adenochilus gracilis*, *Caladenia lyallii*, *C. carnea* var. *minor* and var. *exigua*. *Aporostylis bifolia*, *Chiloglottis cornuta*, *Lyperanthus antarcticus*, *Corybas oblongus*, *C. cryptanthus* (not found yet),

C. acuminatus, *C. rivularis*, *C. macranthus*, *C. trilobus*, *Thelymitra venosa*, *T. pulchella*, *T. hatchii*, *T. longifolia*, *Thelymitra sp.*, *Pterostylis tristis* (not found yet), *P. cynocephala*, *P. venosa*, *P. areolata*, *P. foliata* (not found yet), *P. australis*, *P. banksii*, *P. graminea* var. *graminea*, *P. montana*, *Pterostylis* aff. *montana*, *Prasophyllum colensoi*, *Microtis unifolia*, *M. oligantha*, *Spiranthes sinensis*, *Gastrodia sesamoides*, *G. cunninghamii*, *G. minor*, *Earina mucronata*, *E. autumnalis*, *Dendrobium cunninghamii*, *Bulbophyllum pygmaeum*, *Drymoanthus adversus* - perhaps 42 orchids in all.

Names of orchids

by Brian Molloy, Botany Division, DSIR Lincoln.

With the ever-increasing interest being shown in New Zealand native plants, there is a corresponding need to know and use their correct names. This need should not be under-rated. As pointed out by my colleague, Phil Garnock-Jones (*Nat. Mus. NZ Misc. Series No. 7*, pp 28-34, 1984) about 10 percent of our native flowering plants are undescribed. A further 10 percent might be better placed at other ranks or in different genera. Equally important, about one-third of our native flowering plants are inadequately typified, and there is a further need to compare critically many of them with relatives in other countries.

Our native orchids are no exception. Of the ninety taxa now considered native to New Zealand, at least ten are undescribed or require a change of rank, and two are clearly in the wrong genera. About fifty-six orchid taxa are endemic, and probably thirty-four are shared with Australia thus inviting systematic comparison. Furthermore, typification of orchid names has not been addressed adequately in the preparation of our definitive floras. Most of our orchid names were erected last century and are based on early New Zealand and Australian collections deposited in overseas herbaria, especially at Kew and in the British Museum (Natural History). A thorough examination of this type material, along with that resident in New Zealand herbaria, is essential before we can apply names to our orchids with any degree of certainty. Together with Dan Hatch and Mark Clements (Canberra), I am currently drafting a "Preliminary checklist of New Zealand Orchidaceae" which we hope will make some progress towards the correct use of our orchid names, and point to those taxa in need of further critical revision.

We hope to be able to bring you the "Preliminary checklist of New Zealand Orchidaceae" in a future Number —Ed.
