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Science must begin with myths, and with the criticism of myths: Karl Popper 1902-95.

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Guest editorial: Czechs sentenced for attempted smuggling of NZ orchids by Bec Stanley, DOC Auckland Conservancy

The Wildlife Enforcement Group (WEG) has successfully coordinated the prosecution of two Czech nationals in New Zealand's first documented case of native flora smuggling. WEG is an agency of representatives from Customs, the Ministry of Agriculture and Forestry and the Department of Conservation whose role is to investigate wildlife smuggling. Smuggling of orchids worldwide is thought to be on the rise.

Jindrich Smitak, an inspector in the Czech Government Environmental Protection Agency, and Cestmir Cihalik, a professor of cardiology from a leading Czech university, each pleaded guilty in February to one charge of trading in specimens of threatened species. They were both convicted and each fined $7,500 plus costs. Smitak also admitted three charges of removing plants without authority from National Parks and was also convicted on those charges, but discharged without further penalty.

CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. All New Zealand orchids are covered by Appendix II of this legislation. Appendix II species are not necessarily threatened with extinction but are those that may become so unless trade is closely controlled. International trade in specimens of Appendix II species may be authorized by granting an export permit. Permits or certificates would only be granted if the relevant authorities are satisfied that certain conditions are met, e.g. that such export will not be detrimental to the survival of that species i.e. is *not* collected from the wild (as was the case in this particular instance) or that the specimen was not obtained in contravention of the laws of that country, amongst other considerations. See http://www.cites.org/ for more information.

Smitak and Chihalik were attempting to smuggle out of New Zealand more than 350 dried herbarium specimens of native orchids and other plant species taken from inside National Parks. They had 93 orchid specimens from 22 species (including *Microtis*, common *Pterostylis*, *Winika*, *Earina* species, *Icthyostomum (Bulbophyllum*), *Simpliglottis* (*Chiloglottis*), *Gastrodia* and *Orthoceras*) from numerous sites around the country to export back to the Czech Republic. They both also had a number (12) of live epiphytic orchids in their possession that could be propagated and/or sold.

"If these or any live New Zealand orchids were successfully smuggled out of the country they would be highly sought after," Colin Hitchcock of WEG says.

Despite media reports here and in the Czech Republic none of the orchids collected were on any NZ threatened plant list. The confusion seems to have arisen because all orchids are deemed to be threatened by trade under Appendix II of the CITES legislation.

The effects of this collection and attempted export are the perceived risks of New Zealand's native orchids entering the commercial realm overseas. This would increase interest and may encourage trade - possibly increasing chances of collection from the wild to supply this trade.

The Wildlife Enforcement Group can be contacted by email at weg@iconz.co.nz, or by writing to WEG C/- NZ Customs, Box 29, Auckland or by calling 09 3596607.

What can we learn from the orchid thieves?

In the wake of the Czechs, how should we respond now when strangers from overseas ask us to guide them to see native orchids? It might save some embarrassment if the Group had a formal response to such enquirers. Here's a start...

1. If you have any suspicion about their motives, or if you suspect they have taken orchids, inform the Group's conservation officer Peter de Lange. He can liaise with Customs and WEG.
2. You usually won't have grounds for such suspicions – and lets face it you would trust the dean of a medical school, wouldn't you? Well, wouldn't you? So you might tell them formally about the revised NZNOG Code of Conduct (or even hand them a copy).
3. Point out it is illegal under international CITES agreements to take out of NZ any part of any orchid without proper permission; the fines for doing so are heavy.
4. Don't take anyone you don't completely trust to see rare species.

Middleman profit depends on the vanity, either of scientists (the first to describe an orchid has their name attached to it forever) or of collectors (unscrupulous wealthy collectors will pay a lot to add to their collections).

But forget "orchidomania" or "orchidelirium": most orchid thieves are not passionate-though-eccentric-and-slightly-misguided-orchid-lovers; they are common criminals, out for a quick illegal buck, and they pose a serious threat to rare plants worldwide. They are no better than those who export live kea, kaka and tuatara, no better than those who trade in rhino horns, elephant tusks or tiger penises.

We can lock our doors and windows, but we won't keep the professional crooks out: nor will we ever detect all the orchid thieves. But you can help deter the naïve amateur and you might just once in a while catch a real baddy.

—*Ed.*

NZ NOG Code of Conduct

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

… to which we might now add…

9. Do not try to export any orchid or part of an orchid from New Zealand. It is illegal under international agreements to do so.

Fishing on the Net… lumpers and splitters

A search in Google came up with a few gems, showing we are not alone in our confusion….

"Bird guides used to illustrate a species called the Yellow-shafted Flicker, distributed mainly in Eastern North America, and a very similar Red-shafted Flicker, found in Western North America. The birds are so similar that at first glance they look the same. The main difference is, as the Yellow-shafted flies away, flashes of yellow feathers are seen, but when the Red-shafted flies away, you see, of course, reddish feathers.

"The problem is that in midcontinent, in a small area where the distributions of the birds formerly known as the Yellow-shafted and Red-shafted Flickers overlap, there is a zone where it's not uncommon to spot flickers which flash a color *between* yellow and red -- a sort of salmon-color. The yellow- and red-feathered birds can mate to produce offspring with intermediate characteristics. The sticking point is that part of the definition of 'species' is that individuals belonging to one species shouldn't be able to mate easily and produce vigorous, reproducing offspring with individuals belonging to another species.

"Therefore, nowadays experts have 'lumped' Yellow-shafted and Red-shafted Flickers into one species, and that one species is known as the Northern Flicker. The two former 'species' are now thought of as 'races', or 'subspecies'."

"Lumping and splitting refer to the rearranging of taxonomic groups of species. The naming of a particular species should be regarded as a *hypothesis* about the evolutionary relationships and distinguishability of that group of organisms. As further information comes to hand, the hypothesis may be confirmed or refuted. When two named species are discovered to be of the same species, the older species name is usually retained, and the newer species name dropped, a process called *synonymization*, or convivially, as lumping. Dividing a taxon into multiple, often new, taxons is called splitting. Taxonomists are often referred to as 'lumpers' or 'splitters' by their colleagues, depending on their personal approach …."

"As one of my professors used to say, there are two basic types of psychologists - lumpers and splitters. The lumpers try to find the universal principles that apply to all people. The splitters like to focus on differences between people. My guess is that a balance of both approaches is the best way to go."

"Unfortunately, I think that ego often plays way too much a part in both lumping and splitting. It is easy to let your ego motivate you when writing a paper. It sure would be nice if there was one clear set of rules and everybody followed them. I'm not holding my breath."

"I am way sick of specimens being split apart, renamed, placed in different genera and families, etc. Splitters tend to forget, or WANT to forget, that SOME species can be so closely related that they belong in the same genus. And we damn well know that more than one species of dinosaur belonged in each genus, and I am sure we have found some of them. We should lump when necessary, and split when necessary. When anatomical details are minor, distinct species are closely related, and geological separation (by locale and time period) are minor, sometimes it is reasonable to lump. I am a lumper at heart… I favor the lumping of all species of Corythosaurus, Lambeosaurus, and Hypacrosaurus into Hypacrosaurus - quite a reasonable lumping. I think that until more fossils are discovered, Ultrasauros should be placed in Brachiosaurus. Struthiomimus and Ornithomimus, I believe, should be united. Ditto Gryposaurus, Hadrosaurus, and Kritosaurus. And, for some reason, Orodromeus looks suspiciously similar to Hypsilophodon…."

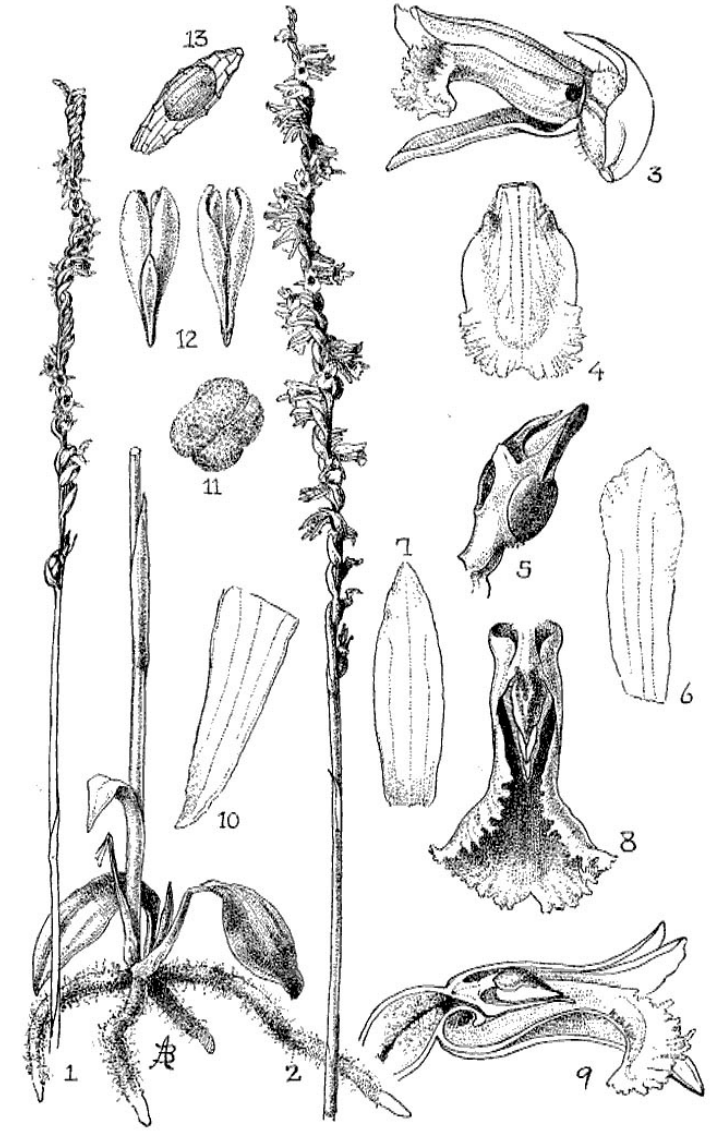


PLATE 75.— **Spiranthes gracilis.** 1 and 2, plant, natural size. 3, flower, side view, with one lateral sepal removed, six times natural size. 4, lip, spread out, six times natural size. 5, column, eleven times natural size. 6, petal, eleven times natural size. 7, dorsal sepal, eleven times natural size. 8, lip and column, in natural position, front view, eleven times natural size. 9, longitudinal section through center of perianth and ovary, eight times natural size. 10, lateral sepal, eight times natural size. 11, pollen tetrad, highly magnified. 12, pollinia, from below (at left), from above (at right), twenty times natural size. 13, seed, highly magnified. *Drawn by Blanche Ames.*

Spiranthes gracilis drawn by Blanche Ames Ames, from Correll DS. *Native orchids of North America north of Mexico.* Chronica Botanica, Waltham, 1950. Blanche Ames Ames (1878-1969) painted oil paintings of prominent men and women, illustrations of orchids for her husband's scholarly works, and drew political cartoons. She is known for her drawings of orchids, which she produced over 50 years. The Ames' cumulative work was published in the seven-volume *Orchidaciae: Illustrations and Studies of the Family Orchidaciae*. She was an outspoken feminist who lobbied hard for suffrage and for women's right to birth control. During World War I, she invented a method of trapping the propellers of enemy airplanes using strings held by balloons. At age 80 she wrote her father's biography, outraged at John F Kennedy's treatment of him in his *Profiles of*

West Coast ramblings

by Gordon Sylvester, Kumara.

I started my 2003-2004 Orchid season by researching all information available to me about the genus *Pterostylis* in New Zealand. I was interested in the base of the labellum and the column and stigma. Over the last few years I have noted similarities among species in this genus and differences among species in this area. Accordingly I changed the focus with my camera and started to concentrate on these areas. A process of trial and error eventually led to the purchase of bellows and a ring flash with good results. A backing from a medical dressing gave me the necessary millimetric scale.

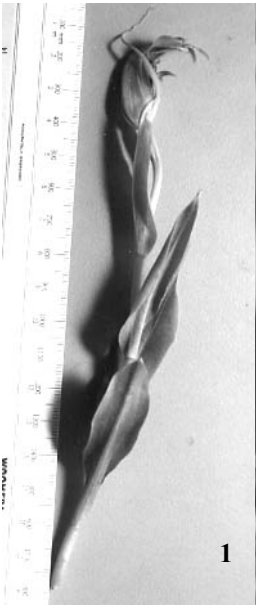
On 9 Nov 03 I revisited Blue Creek , and looked at *P. oliveri* taking several photographs. During this period I had also to look for another house as my house was old. So looking for orchids was a relaxation for me. About 16 November I was contacted by a neighbour to report that there was a small orchid in flower in her garden, and would I like to look at it? On a whim I went to their property to be met by an apologetic gardener saying the plants had almost finished, but she was willing to show me her special orchid; apparently I had seen it the previous year and she had carefully marked the spot for future reference.

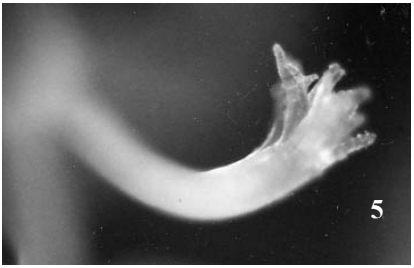
To my surprise I was looking at my little friend from St. Arnaud tagged *P.* "peninsula". I opened up the remaining flower to photograph the interior and my suspicions were confirmed. Of course a quick trip to St. Arnaud was made that afternoon to check on progress with last year's find. No luck as no plants were visible at any of the previous sites.

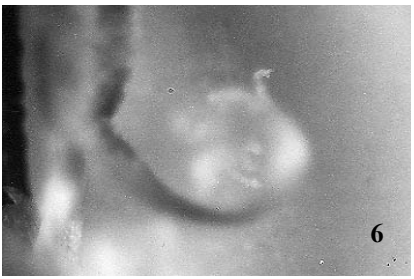
After the shift was completed I took time out to have a quick look around; my goal was *P. cernua*. Conversations the previous Christmas between Eric Scanlen and myself required some definitive answer as to the differences between *P. cernua* and *P.* "peninsula". I found three possible sites as described in the article announcing the description and three different locations, but while at Temple Basin goods lift I found *P. australis* in flower on 11 Dec 03. On my own property I had noted a *Caladenia* species and on an adjoining property located *Winikia cunninghamii* and *Earina autumnalis*.

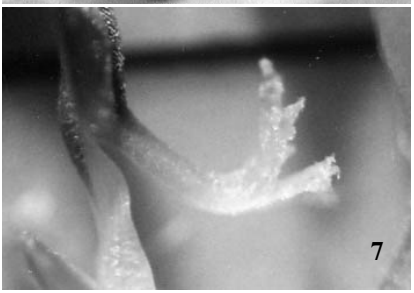
A return visit to Blue Creek on 18 December with a friend (an expat New Zealander living in Canada) revealed *Aporostylis bifolia, Thelymitra cyanea, Nematoceras macrantha, Pp. oliveri, irwinii* and *banksii*. Later that morning a trip to Takaka Hill realized *P*. aff. *graminea*, *Thelymitra* sps. *Earina mucronata*; *Nematoceras triloba, P. banksii.* Afternoon saw us at Brunner Peninsula located *Caladenia lyallii, Pterostylis* "peninsula" and *Chiloglottis cornuta.*

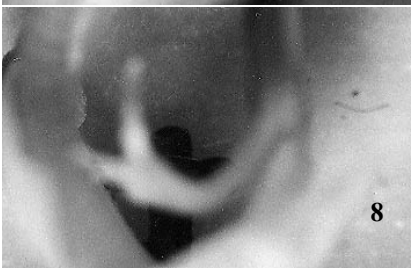
My return home was celebrated by finding *Caladenia* "red stem"; this plant wasn't in flower but was marked for later investigation; it was growing in a sphagnum moss mound about 30cm above the soil water horizon. A week later, and the whole area had been overturned by wild pigs including my "red stem" site. Later that same day 21 December we went looking for culvert 53 in Okuku Reserve about 8km from my property. Objective: *P. cernua*. I could not locate this species but did find *Earina autumnalis* and *Bulbophyllum pygmaeum* across the road in the bush. I walked down the roadside and noted *Thelymitra* species and *Thelymitra longifolia* and *Microtis unifolia*. On crossing the road almost immediately located *P. cernua* in various stages of finishing flowering including a pubescent seed capsule and flowers. On 23 December I was in the neighbour's property noting *Thelymitra cyanea* and *Thelymitra formosa* and a green column *Caladenia* in my sphagnum moss bog.











West Coast *Pterostylis*

1. *P. australis*
2. *P. oliveri*
3. *P.* "peninsula"

Labellum appendages

4. *P. oliveri* Blue Creek Nov 03.
5. *P. australis* Temple Basin Dec 03
6. *Pterostylis,* Hawkes Dec 03
7. *P.* "peninsula" St Arnaud Dec 03
8. *P. cernua* Okuku Dec 03
9. *P.* "peninsula" Tadmor Hill Nov 03.

On 26 December I was visiting friends and went on a trip to Mesopotamia, headwaters of the Rangitata River; during the lunch break noted *T. longifolia* in seed and in flower; the flower was about 8mm in dia. while fully open and about 10cm tall. In the same area was *Prasophyllum colensoi* and *Microtis unifolia* in a sere environment.

While returning home we called into a private property that specialised in orchid walks at Glenroy. The property was called Hall's Bush. The owners had a *Pterostylis* species for me to look at. Their only means of identity was a 1st edition of the Field Guide. We noted *Chiloglottis cornuta, Nemotoceras triloba*, in seed, *Nematoceras macrantha, Thelymitra longifolia*, and *Gastrodia* "long column".

On 1 January we were back at Okuku Reserve where we found *P. cernua* had finished flowering completely and had also suffered the depredations of roadside mowing. *Thelymitra formosa, Microtis unifolia* and *P.* aff. *montana* were in flower. *P. montana* was on both sides of the road.

I visited Phil Knightbridge on 5 Jan 04 to discuss *P. cernua*. Phil stated that *P. cernua* was noted from 22 different sites on the West Coast. He gave me a copy of Wardle's 1980 survey of Scenic Reserves on the West Coast especially Okuku. I reported the *Bulbophyllum pygmaeum* to him. He showed me the office copy of *Land Environments of New Zealand* by John Leathwick *et al*. published by Landcare 2003 and cost about $50. This document is intended to replace the Ecological Regions system currently in use. More on this later.

On 2 Jan 04 found *Caladenia chlorostyla* on the east side of the property again in the moss bog as well as C. "red stem" and several small *T. formosa* plants in flower.

On 30 Jan I met Eric Scanlen at Greymouth; we went for a short walk up a local mountain bike track. We found his hypochromic *Singularybas oblongus*, and *N. macranthus,* this plant with enormous leaves. In addition to 4 species of *Pterostylis*, going on leaf shape, without flowers. These leaves attracted my attention and will be the focus of attention next Nov-Dec; one particular plant had leaves about 20-35mm wide and about 10cm long. The colony was located under crown fern.

I located a *Pterostylis* species without flowers across the fence in the neighbour's property. There is a huge opportunity for further research in my special subject in the future.

On 5 Feb while showing a family friend around the ranch I noted an unusually dark mauve orchid looking like a *Prasophyllum*. Out with the camera and recognised it as a *Genoplesium* in fact it was *Genoplesium nudum* with 10-12 flowers up to 110mm high growing in a damp situation amongst grasses and reeds.

One of the plants from the Takaka Hill provided a couple of surprises on dissection. It was a *P. graminea* type about 30cm+ tall with narrow graminea-type leaves. The base of the labellum was very different from any other I have seen. Very definitely needs further investigation next season.

Finally we have several members looking at *Corybas/Nematoceras* species. There is definitely a need for investigations into *Thelymitra* and *Pterostylis* and most likely 3 or 4 other genera. I have decided to concentrate on the *Pterostylis* alliance. Accordingly I am seeking fresh flowers and plants of all *Pterostylis* to photograph the base of the labellum/column area. If at all possible 2 or 3 plants clearly identified as to location and date of collection would be appreciated, as indeed any diagnostic drawings showing the same details of the column/ labellum area along with the locality of the species.

The location is important as I believe that species are limited in geographical distribution as well as flowering period. Hopefully any information will either disprove or enhance my theory. My physical address is Beach Road, Kumara,West Coast. Any material sent will be carefully handled and if requested a photo copy returned by a self addressed

Some Christmas orchids

by Graeme Jane and Gael Donaghy, Tauranga

With a week or so to fill in before a Botsoc camp on the West Coast at New Year, we headed for Golden Bay to visit old friends and places. One particularly rich spot is at the base of Farewell Spit. This year, with the spring somewhat late, we hoped to clear up a couple of mysteries. Gael had always claimed there was a strange pink *Caladenia* there and three years ago we had found a few dead stalks of a rather woody *Gastrodia* at Christmas. We had also seen it at Totaranui. Subsequent visits had either been too early or too late to catch either in flower.

On the caladenias we were out of luck, they had aborted; so the pinkie will have to wait another year. There was no sign of the *Corybas cheesemanii* which had been very abundant nor the *Pterostylis alobula* which can still be in flower at Christmas here and plants of *C.* "pygmy" were hard to find compared with other years, but the woody *Gastrodia* was in flower and abundant. It had few flowers and careful examination of the column proved it to be *Gastrodia minor* (Fig.1, page 11). One mystery cleared up. To finish a brilliant fine day (the last for a while here we were to learn) we headed further out to seek *Microtis parviflora* and we were not disappointed. At the crossing track it was common, as before, along with *M. unifolia*.

From there, hopes of a few days in the Cobb or at Mt Arthur were foiled by the weather (and forecasts). We decided instead to head for the Lewis, but the rain did not lessen till we arrived at Hanmer. With a few hours of daylight to spare, we took the track up Dumblane on 28 Dec 03, a spot Graeme had often wanted to visit.

The shrubland at 1000 m altitude was rather dry and uninteresting so at the first opportunity we headed into a moist gully to a richer flora. There, amongst a good range of other species in flower Graeme spotted *Corybas* leaves in under tussock which in the past we had passed off as *C. macranthus*. Gael also happened to find a recently finished flower, which she exclaimed did not look like *C. macranthus* (Fig.2).

Fig.2

It had not long finished but the dorsal sepal seemed too long and broad. After a few minutes active discussion, we decide to search the tussock and under shrubs in the hope of finding a fresher flower. The macranthus-type leaves were quite abundant, but flowers few and all well over. About an hour later Gael struck gold (or was it red gold?). A patch of plants in a cooler, wet spot still in full flower. Now there was no doubt. It was not *C. macranthus* but a deep red *C. trilobus* type flower (Fig.3,4). Perhaps we should have been more suspicious. *C. macranthus* does occupy a wide range of often fertile or limey habitats. Yet it is a very high altitude to find *C. macranthus* and the lack of flowers is typical of *C. trilobus*. Furthermore *C. trilobus* extends right up to treeline (although often as an albino form in the south).

We are sure this species is much more widespread. We have seen similar leaves at Mt Eldrig (Fiordland), Freehold Stream (Ohau), Mt Newcombe (Arahura), Mt Haast (Lewis), the Cobb and quite a few other places throughout the Alps, but never seen flowers before. After quite a few photos, we selected two flowers to dispatch to Bruce Irwin as a

belated Christmas present (*illustrated by Bruce in J90 – Ed.)*

Rain foiled a trip to L. Tennyson so we headed south to Craigieburn for a few days and then having exhausted easy places to go and exhausted likely spots for *Pterostylis tanypoda* on the limestone we headed south to Mt Somers via the Lake Lyndon Road. As we got our first good views down the valley some interesting, open *Dracophyllum* scrub hailed from the roadside so we stopped to explore. It wasn't long before we found a *Pterostylis* in full flower (Fig.5), but was it *P. tanypoda* or *P. tristis*? I have always been suspicious of records of *P. tanypoda* from Canterbury because we had often found green *P. tristis*, usually mixed with the typical reddish plants. But all these beasties were green.

After much peering and poking it was confirmed as *P. tanypoda*. The Cantabrians were right after all! Must be some of the most accessible plants we have found. In Nelson, they are usually high alpine on marble so this was a nice surprise. Our next challenge was to find *P. tristis*. After half an hour or so searching this site, finding about 20 plants, we decided to move on and try further down the valley for *P. tristis*. About 3 km further along we spotted a suitable terrace and spread out on either side of the road. Fifteen minutes later we found a patch of about 20 finished *P. tristis.* A nice outcome - both close together. The *P. tristis* were well over. Still, there they were, *P. tanypoda* and *P. tristis* within a few km of each other and easy to get at.

Mt Somers yielded a few orchids including three Thelymitras and *Caladenia lyallii* but nothing unexpected so a few days later we headed back over the Pass to the first of our summer Botsoc camps at Arnold River happy in the knowledge that we had had a few good finds.

5th Australasian Native Orchid Conference and Show,
16-19 Sep 04, Campbelltown, NSW.

email: Karen.winch@bigpond.com.au.

Field guide to the New Zealand orchids

A third edition for the Group's *Field guide* is in the planning stages, to accommodate changes in nomenclature and new discoveries since the last edition in 2001. If you have any observations (new sites, corrections, suggestions, etc) that you would like to see included, please contact the editor.

Watch this space

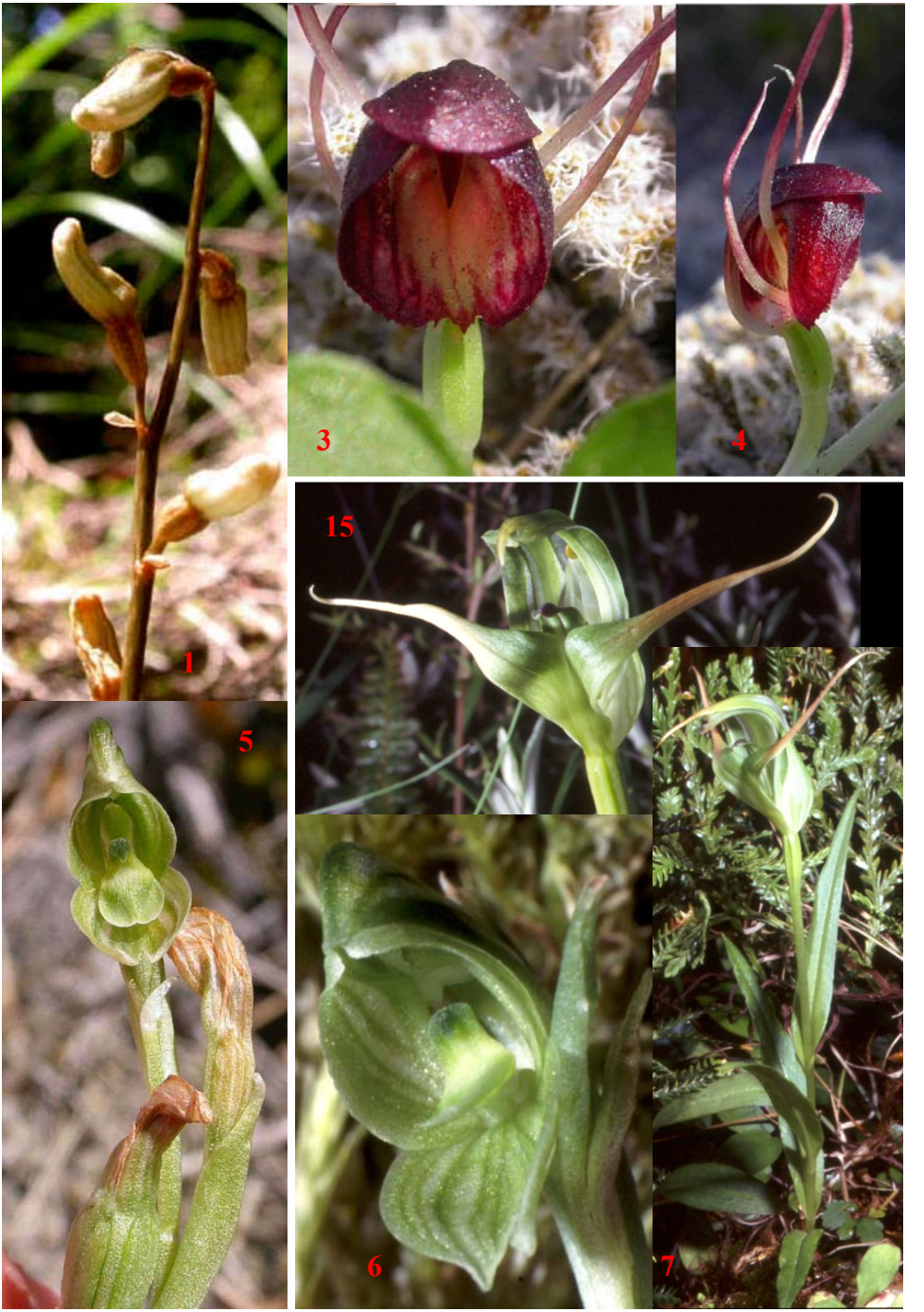
Key to figures

Christmas orchids →

1. *Gastrodia* "long column"
3, 4. *Nematoceras (Corybas)* aff. *trilobus* from Dumblane at 1200m.
5. *Hymenochilus* (*Pterostylis) tanypodus* south of Lake Lyndon.

The Column: South Island roundup

6. *Hymenochilus tanypodus*, 1 Dec 2003 showing the 1.25mm tall callus at the back of the labellum and entire margins to the lateral petals.
7. Small and late flowering *Pterostylis australis* x *banksii* from Bald Hill 18 Jan 2004. Short, broad leaves, dark labellum ridge and short drooping dorsal sepal all proclaim *P. australis.* **15.** *Pterostylis australis* x *banksii* Borland Burn, South Branch, 21 Jan 2004 showing wider-than-banksii lateral sepals but a short, australis style drooping dorsal sepal. But see Fig.16.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Figs 11, 12, 13

17 16

1. South Island roundup 2004

Gloria and the Column took a *Gastrodia* "holiday" to farthest south Invercargill on a 5,000km odyssey in Jan/Feb but kept having other strange orchid enigmas thrust upon them, as reported below.

Iwitahi Reserve 9 Jan 2004 was the first stop but, sad to say, *Lycopodium,* ferns, piripiri and native scrub have taken over two thirds of the needle duff, thrusting back the orchids despite the dedicated volunteer clearing work organised by the Taupo Orchid Society. The fern excluded all orchids except one *Aporostylis bifolia* (still in flower) and two *Gastrodia minor* but these were struggling in the advancing fern front. This exposed hill top is not as good as the old reserve near the camp, as the failing and wind-fallen *Pinus nigra* bore witness. The *P. nigra* is 20 years younger than much healthier trees at Hanmer. Some soil deficiency, boron for instance, may explain this bush sickness according to Mark Moorhouse. Three *Simpliglottis* (*Chiloglottis*) *valida* which are thriving away from the fern invasion, displayed long scapes with seed capsules well developed, one in each of three widely separated colonies. Hopefully some insect has taken up the pollinating cudgels for this otherwise seedless plant in NZ. You may gripe about the piripiri seeds clinging to your socks and hairy legs but have a thought for the chaffinch whose despairing efforts only broke its hold on her downy breast as the Column loomed over to free her.

Oamaru On 1 Dec 2003, Barbara McGann had kindly sent the Column a 50mm tall *Hymenochilus* (*Pterostylis*) *tanypodus* (**Fig 6**, colour pages) from inland of Palmerston thus dashing his carefully deduced midJanuary flowering time. How did this weedy orchid know to flower early because of a forthcoming January drought? So, Journal reports giving times from Nov through to Jan are indeed credible, meaning that this subalpine grassland species may have its flowering triggered perhaps by soil moisture and warmth more than daylight hours. The apparently huge definitive callus (1.25mm tall) standing up at labellum base, is green in this freshly opened flower which lacks the minute denticulations on petal margins of its close relative *H. tristis* [J88:16]. DoC's Dave Houston at Macraes Flat 'phoned that the *H. tanypodus* site was dust dry and barren on 13 Jan so we didn't go.

However, Barbara and John McGann hospitably took us to a cliff-top, yellow eyed penguin nest, to help Thomas weigh an indignant female and remove a tiny, $5,000 GPS/depth recorder from her back. She then

Key to figures

South Island roundup

11. *Prasophyllum colensoi* leaning into *Drosera stenopetala*, Bald Hill 18 Jan 2004

12. *Nematoceras* (*Corybas*) "tribaldy" like a late flowering maroon *N.* "Trotters" Bald Hill 18 Jan 2004.

13. *Petalochilus* (*Caladenia*) *nothofageti* showing the three pink bars across the inner labellum, seen only at Lake Hauroko so far, 20 Jan 2004

16. *Pterostylis australis* from near Borland Lodge, 21 Jan 2004 showing a smear of pollen on the stigma and the fungus gnat that left it caught between column arms.

17. Fungus gnat in a death grip between the column wings of the Fig. 16 *P. australis*, showing pollinia from another flower, glued to its back and smeared on the stigma to the right. This flower's pollinia are untouched, still intact. Photographed 26 Jan 2004 after freezer storage and tweezers exposure of the fly.

returned to her two huge chicks and told her just arrived mate all about it with mutual loud squawking and waving of flippers. Apparently, YEPs swim 16km to a reef daily and catch blue cod in their one small patch. Now where were we?

18 Jan 2004, **Bald Hill**, in the curiously round-topped Longwood Range, at 804m, just gets into the alpine zone on Latitude 46° 10'. Sid Smithies did much of the roading for the microwave transmitter on his Cat. D7 so knew his way around. On a soggy place by the road were some open *Thelymitra cyanea,* half open *T. pulchella* and finished *T. formosa*. Across the road were fresh *Pterostylis australis* x *banksii*, (Fig. 7) so late!, small with a short sagging dorsal sepal tip, short broad leaves, stigma wider than the column and dark brown labellum ridge, all said *P. australis*. But long, widespread lateral sepals and column taller than the labellum (Fig. 8) said *P. banksii* [1, p143-4]. Sid and Kelly Rennell led the Column higher up to *Waireia stenopetala* in the tussock with both short and long floral bracts (Figs. 9,10). But notice, "long bract" has an immature, short ovary whilst "short bract" has mature long ovaries. The bracts are both in fact 1½ times the flower length. [See J83:28 for Campbell Is. and J60:20 for Auckland Is. specimens. Both have genuinely short bracts, barely longer than the flowers]. *Prasophyllum colensoi* leaned into *Drosera stenopetala* (Fig. 11) and nearby, in beech, a huge patch of Sid's *Nematoceras* "tribaldy" (Fig. 12) with many still in flower, could not be negotiated without stepping on plants. It is close to *N.* "Trotters" [J89:20] in size, leaf shape and flower positioning but the late flowering, tight growth habit, broader flower, hairy within, little notch midlabellum and maroon instead of near-black, says we should probably keep it separate. Some DNA comparisons would be welcome. Next *Townsonia deflexa* in seed just inside the beech tree-line, growing in unbelievably thick moss cushions. Bald Hill is a great orchid spot with much more to offer, earlier in the season, if one has a key and endless patience to get at the steel encased deadlock padlock to open the armoured gate. Driving back from Otautau to Invercargill, was not helped by the dazzling sun low in the sky over Stewart Island at 9.25pm, would you believe? At 6° 46' west of Auckland, an extra 27 minutes of daylight saving already applies.

Bluff Hill in Stewart Island's ER 79, had a larger *Pterostylis australis* x *banksii* still flowering on track-side on 19 Jan. at about 100m so its lateness is not due to high altitude. Its banksii characters, the reddish labellum ridge and long, wide-spread lateral sepals had us bluffed (get it?) for a while but the short broad leaves said australis. Kelly's photos of earlier specimens[J90:32 in B&W] show notable pale cerise sepals.

Lake Hauroko, Fiordland, 20 Jan 2004. NZ's deepest lake, surrounded by beech forest and ethereal scenery, is an unforgettable experience. The sand-flies are worse at storied Lake Mahinapua but not much. It was an education finding *Petalochilus minor* (alias *Caladenia chlorostyla*) all just finished but recognisable (there are photos) and red stemmed *P.* aff. *chlorostylus* in seed but with the definitive green

8. *P. australis* x *banksii* from Fig. 7, p11. Tall column and long, spread lateral sepals are *P. banksii* parts.

wedges or gores up the red ovary. It flowered earlier than *P. nothofageti* (Fig 13) Kelly found in the same patch in fresh flower! So it isn't just an alba form of *P.* aff. *chlorostylus* as had been rumoured. Two of the four *P. nothofageti* shot by the Column, had 3 pale pink bars inside the labellum; that's new. One is loath to cast aspersions on digital cameras but their lower exposure latitude than even transparency film, could explain why Kelly's otherwise excellent shot [J90:26] showed no pink bars.

Winika here in Fiordland were uncommon but two colonies we saw had dense masses of flower compared with the sparse showing on northern forms.

The solitary and spotted seed capsule of a *Drymoanthus flavus* (Fig. 14) from 4m up a silver beech on the beach took a combined effort to capture on film. The Column, atop a tall stump, teetered on tip-toe with camera in one hand and flash in the other, whilst Kelly held up a mirror in a long cleft stake to soften the flash shadows. The hardships we field investigators go through, dear reader, just to satisfy your viewing curiosity!

Also on the beach were two unusual trees 7 to 8dm DBH (diameter breast height) in a colony of several smaller ones. Hutu (*Ascarina lucida*) according to the book, going by leaves, bark and seed pods. Flora 1 declares the species to have a ". . trunk up to 3dm. diam." This is not Texas, but at Lake Hauroko they grow them bigger!

South Arm Manapouri 21 Jan 2004 The HT access road is now open to the public. An all terrain vehicle is not mandatory but it helps so Sid insisted on taking his and Kelly volunteered for the kiddie seat at the back. One soon gets used to the twin rows of pylons striding across spectacular ridges, carrying power to Tiwai Point aluminium smelter. Patches of the invasive *Hieracium pilosella* here and there had been browsed flat by hares; ideal habitat for *Hymenochilus tanypodus* but none could be

9. *Waireia stenopetala* mature flowers with short floral bract, Bald Hill 18 Jan 2004

10. *Waireia stenopetala* immature with long(?) floral bract from Bald Hill 18 Jan 2004 Bracts are actually the same length, the difference lies in the length of ovary.

found here or at Bald Hill or later at either Lindis Pass or Lake Lyndon in similar habitat. Too late this season it seems. Not too late for *Aporostylis bifolia* though. The Borland South Arm taxon has the calli on labellum base like two discontinuous yellow ridges. Only three brown spots per labellum on very small yellow patches [*cf.* J84:35]. One great cushion of unidentified, dark green *Celmisia* held another colony of the *Pterostylis australis* x *banksii*, (Fig 15 p11) still in fresh flower sporting those short broad leaves, droopy short dorsal sepal but widely spread, long lateral sepals. Down at the Lake, the fish in the Grebe River were not biting so Sid joined Kelly and the Column photographing fresh flowers on *Petalochilus* aff. *chlorostylus* just off the beach in beech. No sign here of prime targets, *Gastrodia* "long column" or *G.* "shauroko". Homeward bound, just east of Borland Lodge, Sid stopped at a small *Sphagnum* bog where *Waireia stenopetala* abounded and *Pterostylis australis* were also in fresh flower. All these January flowering greenhoods were an unexpected bonus for the Column. The *P. australis* had very touchy labella which triggered at the least vibration but attempt three succeeded despite unavoidable vibrations during weed clearance. The sectioned flower (Fig. 16) shows why. It just happened to have an unfortunate fungus gnat (Fig. 17) trapped between the column wings, the labellum had reset and must have been at the unresponsive stage [J80:6]. The 2.4mm long blob of pollinia above the fly is untouched so the pollinia remnant glued to its back, came from another flower didn't it? Some of that pollen is smeared on the stigma showing that the fly had done its unwitting duty by crawling up between the column arms, its only escape route once the labellum had triggered. The plant had "shot the messenger" and didn't care [*cf.* J79:4].

Greymouth 30 Jan 2004. After an orchidless sight-seeing trip through dry heart, Alexandra, Wanaka, Lindis Pass and Lake Lyndon, Gloria and the Column stopped at Greymouth-in-the-mist. Gordon Sylvester joined us to case the great little orchid spot (GLOS) to the side of the HT track. The hypochromic *Singularybas* (*Corybas*) *oblongus* [J87:8 Fig. 14] in several colonies beside some 15m of mountain bike track, was in copious seed; so it is not a sterile mutant. Gordon has compiled an extensive *Pterostylis* dossier and was impressed with the four different leaf styles thereabouts of *Pterostylis* spp. all in capsule and a large colony of round leaved *Nematoceras* (*Corybas*) *macrantha* or *rivularis* agg. with critically sparse seed capsules.

Acknowledgements Gloria and the Column had an unforgettable month touring from Papakura to Invercargill and back. It was made memorable and inspiring only because of the unstinting hospitality and guidance of Arnold and Ruth Dench, Ian St George and Kristy Mc Donald, Albert and Judy Brooks, Barbara and John McGann, Kelly and Alison Rennell, Sid Smithies, Graham and Jan Dickson, Gordon and Cherry Sylvester, Mark, Caryl and Kendyll Moorhouse in that order. Many thanks for your efforts.

Reference

1. Moore, LB & Edgar, E, *Flora of New Zealand* Vol. II, 1970

2. Gastrodia "long column" roundup

Gloria and the Column took a *Gastrodia* "holiday" from Papakura to Invercargill in Jan/Feb to sort out once and for all(?) the increasing debate about these quirky long and short columned, leafless, excuses for orchids. *Gastrodia* "long column" finished up taking centre stage.

Iwitahi Reserve 9 Jan 04, the first stop on a 5,000km odyssey. *Gastrodia minor* were sparse and not open but, *G.* aff. *sesamoides* (Fig. 18) were in flower throughout as were two late flowering *G. cunninghamii*. Florets of both species were photographed outside and in to get essential details of their

complicated but hidden labellum/column details for later comparison with *G.* "long column". The *G. cunninghamii* pollinia had gone brown and the ovary was swelling, despite looking otherwise fresh with the flowers extending outwards, not upwards as one would expect. So a green one (Fig. 19) of Mark Moorhouse's from 25 Dec 2003 at Nelson's Lake Rotoiti is included. The Iwitahi species had no perfume at this time to Gloria or the Column nor did Mark's Fig. 19. Yet a tawny *G. cunninghamii* specimen, sniffed by most at the Iwitahi NZNOG AGM early in the morning on 14 Dec 2003, had a "full bodied", "sweet" almost "cloying" [J90:2] perfume to the Column. One lady smelled apple tart and others smelled different things altogether! Perfume perception is such a personal thing.

Bartons Bush 11 Jan, Upper Hutt. A suburban remnant of flood-plain forest with tracks enclosed by high pig netting — to keep back the Pig-Islanders? Ian St George's *Gastrodia* "long column Aorangi" [J66:**31**; J70:**18]** were in flower but didn't exude the expected perfume on a fine, warm day at 5pm. [*cf.* J66:29; Ian says that perfume at both Barton's bush and Aorangis was at 5-6pm]. Ian arrived on cue to point out quite a number in bud, in flower and in capsule. The healthiest were in damp compost and deep shade around the base of large trees. *G. cunninghamii* was there too, some still in flower but most were in darkest, erect seed capsule.

Herbert Forest had been high on the agenda for Barbara McGann's *G.* "long column" [J44:14; 67:23; 76:25] but the owners had closed the forest because of the extreme fire risk! Too bad when the fine weather *stops* one from getting to the orchids and rattles a carefully planned itinerary.

Invercargill 17 Jan. Before our dust had settled, Kelly Rennell had us up to midcity Queens Park. His *Gastrodia* "long column" in a sunny ericaceous border (*Erica darleyensis* "Darley Dale" *Erica herbaceous* x *erigena*) had all finished with no seed capsules(?) but in front of the kiosk, in the same sun soaked *Erica*, the Column spotted another one in bud, like a tawny asparagus shoot. At Anderson Park, north of Invercargill, on 19 Jan, a beeeautiful pale gold *G.* "long column" (Fig. 20 p22) was in flower in a bark garden in the sun. Up the drive, in deep shade under large *Rhododendrons,* more *G.* "long columns" (Fig. 22 p22) were later found but darker ones, in bud in flower and in copious capsule suggesting self pollination. Their erect seed capsules look so like *G. cunninghamii*'s they are still fooling many.

Otautau 18 Jan. Sid Smithies showed us large and small colonies of those same dark *G.* "long column" but only in bud, in full shade, on trackside, under *Pinus radiata*, gorse, *C. lawsoniana* and currant-berry trees at Holt Park. A number had opened by 24 Jan (Fig. 23 p22). Notably, if a floret were accidentally bumped, anther and pollinia flopped straight off intact, sometimes onto its own stigma. Kelly reported [J87:27] one plant here 820mm tall with 60 flowers in 2003.

Lake Hauroko 20 Jan. Yes, the greatest disappointment of the whole trip was missing Kelly's short columned, blond *Gastrodia* "shauroko" [J87:**26**]. Its orange tipped labellum is strongly upturned and narrow compared with the dark, usually broad, tip on *G. cunninghamii*. Kelly dejectedly indicated the exact spot behind the beach by a beech where a solitary *G.* "shauroko" stood in 2003. The Column contemplated whether the tuber was still there but Kelly wouldn't dare scratch for it for fear of damaging it. As compensation, he then spotted some *G.* "long column Holt" nearby, only in tawny bud but undoubtedly the same as seen in the three parks above. He also spotted them in bud at **Slab Hut** near **Monowai** and was elated to find them in these beech forests, away from urban parks and their exotic *Rhododendron, Erica, Pinus* or *C. lawsoniana* hosts.

St Arnaud 1 Feb. Mark Moorhouse pointed out a solitary, flowering *G.* "long column St Arnaud" (Fig. 23) on track-side that the Column had already passed 3 times due no doubt to innate orchid blindness! It was almost a holy grail because noone had reported it, despite four mentions in the journals, since he and Gloria stumbled on a

large colony in bud, flower, capsule and dehiscent, in the same vicinity on 11 Feb 1988. Much further down the track, Mark revealed a widespread and healthy colony of *G. cunninghamii*(?) in beech by the beach at Lake Rotoiti. All were in erect seed capsule; some darkest brown, some tawny and some off-white! Flowers are a must for identifying *Gastrodia* so Mark has it marked (get it?) for next year. Always it's "next year"! Who else is running out of years?

Cape Farewell 3 Feb. Mark & Kendyll led the Column to a revegetated sandhill in shady kawakawa (*Macropiper excelsum*) and kanuka (*Kunzea ericoides*) where a few *Nematoceras* (*Corybas*) "pygmy" form 4 [J89:25] leaves still proclaimed Graeme Jane's and Gael Donaghy's May/June flowering *N. triloba* taxon [J69:**11**; J73:**11-13**]. Standing among the *N.* "pygmy"s were 8 heavenly stems of *G.* "long column" where, 3 weeks before, there had been no sign of Mark's find from Feb 03. A very dark one was in erect seed with desiccated flowers intermixed, proclaiming no pollination for some. These were as dark as Dot Cooper's [1, plate 7] labelled *G. sesamoides* but amended in Newsletter 5:1 and now indexed as *G.* "long column black". But the flowers here were too ratty for photography so a question remains, was Dot's the same? But a golden olive one (Fig. 24) with 26 pendant flowers was faintly scented, on a fine hot midday, to Mark and Kendyll — if not to the Column! One flower's head-on view (Fig. 25) shows the labellum's typical M shaped section, made up of a central, lumpy orange ridge of false pollen and the pendant, frilly margins. The tips of the pointed pollinia, typical here and at St Arnaud, are just visible. A smaller plant, 250mm from it and similarly coloured, had all the flowers at right angles to the stem and was unscented to all three. There seemed to be 3 distinct taxa but doubts were setting in because all taxa were intermingled in this one spot.

Owhango 6 Feb. Laurie and Jocelyn McCabe who bought Ross and Helen Bishop's place, were most hospitable letting Gloria and the Column case every *Rhododendron* bush and dark spot in their top class landscape garden. Earlier, Ross had had these golden olive coloured flowers with golden knobs show up in different parts of the garden in different years but the plants hadn't moved had they? There were just several rhizomes flowering at different times when they had enough resources to sprout a spike. None of them this year it would seem, yet on 28 Jan 1998 there had been 3 spikes [J78:**21**]. The Column did not photograph their innards then so had been anxious to do so now. This taxon seems to be different because, in 1998, every flower dropped off when spent. They were unscented to either Ross or Helen, on mature flowers though and set no seed. So, for the moment, it has to be left to stand alone in the index through conflicting evidence. Next year!

Stewart Island. Hugh Wilson's [2 on p294] astute observations in 1982 first announced that *G.* "long column" was a different taxon from *G.* aff. *sesamoides*. His description and drawing fit the Invercargill plants quite well. More details required. Hugh's example of first noting then studying up differences between taxa, is inspirational. Had David Petrie [3 p97] done so with his Otira specimen in 1893, he would undoubtedly have been able to announce a new *Gastrodia* "long column" species instead of confusing everyone for 91 years by saying it was *G. sesamoides* — which doesn't grow in NZ anyway.

***Gastrodia* structure**. All the long columned *Gastrodia* flowers, are nicely arranged for insect attraction and pollination. The orange labellum tip + perfume are the initial attractants but any fly has to get upsidedown on that labellum for inner access and, with pollen being illusory also on the inner ridge, it would undoubtedly head further in. It would slip easily past the anther cap which curves smoothly over the 2 pollinia and holds them against the rostellum plate to ensure no premature, inward removal. The labellum's basal margins are orange, drapelike attractants, suspended directly over the sticky stigma. Any pollinia already on the fly's back would get dragged off by the stigma if the fly were strong enough and lucky enough. As the frustrated fly leaves, the anther catches, rolls back and easily dislodges the pollinia onto the still upsidedown fly's back. Should it fail to get thus pollinated, the flower then tips up, day by day so that any slight bump would dislodge the weakly anchored pollinia onto its own stigma. Second rate fertilisation perhaps but better than none at all. Well, that's one engineer's ingenious hypothesis? What do you

think?

More to come Mark Moorhouse has sent pics of three December flowering, Nelson *G.* "long column" agg. which need a serious follow-up. There is a large, green, scented one with a dark green labellum tip, a small brown and unscented one with a brown labellum tip also an orange one with a dark brown labellum tip.

***Gastrodia* comparisons** *G. minor* has an extremely short column, as does *G. cunninghamii* (Fig. 19) hairy underneath at Iwitahi. Its labellum tip is very dark, possibly as a "target" bulls eye [J85:6]. On the other hand, all the long columned *Gastrodia*, except Mark's Dec. flowerers, have orange coloured labellum tips, as pseudopollen attractants. The hairless columns are as long as the labella in *G.* "long column" but less so in *G.* aff. *sesamoides* and *G.* "city" [J78:27]. United to the perianth tube in *G.* "long column" and more so in *G. cunninghamii* (with a centre plate at Iwitahi) are the labellum's wavy, draped, basal margins but they are on the free part of *G.* aff. *sesamoides* (Fig. 18) and *G.* "city" [J78:28] whose labellum anchorages are further aft. The forked part of the wishbonelike labellum ridge, folds prominently outwards in *G.* aff. *sesamoides* and *G.* "city", inwards on *G. cunninghamii*, (Fig. 26) hangs straight down on Mark's green *G. cunninghamii* and hangs down or lays out a little in five specimens of *G.* "long column" from Upper Hutt to Invercargill. *G. leucopetala* Col. and *G. minor* have no wishbone but two ridges, spreading from the centre and converging to the dark tip of the labellum on the first, J38:7, left side drawing and yellow tip on the last.

***G.* "long column" conclusions** Harking back and looking critically at notes and the pics, it seems that all Jan/Feb flowering colonies from Stewart Id, Aorangi Range, [J66:**31**],Bartons Bush, Invercargill, Otautau, Lake Hauroko, Slab Hut, St Arnaud, Cape Farewell and Mainui [J54:17] and others, are likely to be the one species — and the Column is no lumper. Picky differences such as pollinia with little points (St Arnaud and Cape Farewell) but rounded elsewhere, lower labellum skirts in some, different curvature in the columns and labella, scented or unscented etc. may not amount to much. You see, all buds seen were erect and tawny to dark brown, external flower colours were golden olive with golden knobs, darker in deep shade (sometimes very dark) but paling to straw in the sun. Opening flowers dropped to hang close to the stem and were scented to some, morning and afternoon. As spikes matured, flowers started to rise and lose perfume. As flowers withered, they stood erect and capsules began to swell. Shaded plants set plentiful seed, indicating predominant self pollination. Plants in the open, out of their element, were generally short and few flowered, setting no seed. *Freesia* scent was often reported, stems with scores of flowers (60 at Otautau [J87:**27**], 66 at Aorangi and 70 at Mainui) plus all flowering in Jan/Feb 1 or 2 months behind the other species (regardless of altitude or latitude incidentally) does indicate a close relationship. There are still question marks hanging over Dot Cooper's black [J84:18] and the Owhango long columns at least until more info comes to hand. However, unless DNA evidence can show to the contrary, Jan/Feb flowering *Gastrodia* "long column" from Stewart Island to Mainui near Wanganui, will accordingly be combined in the index under Hugh Wilson's original tag, ***Gastrodia* "long column"**. This will briefly reduce the number of accredited unnamed orchids to 98 [J89:22]. The Column, who is often lambasted, quite wrongly of course, for splitting, diligently seeks logical explanations after field studies with other enthusiasts, literature research, 3-D photo study and peer comment but he is now ready for a barrage of unwarranted brickbats for lumping! What would life be without healthy debate?

References

1. Cooper, Dorothy, *A field guide to New Zealand native orchids,* Price Milburn, 1981.
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Red Helleborine (Cephalanthera rubra (L.) Richard)

The Red Helleborine has a moderately wide distribution in central and northen Europe, usually on calcareous soils, although in Cyprus it is found on volcanic soils in the Troodos Mountains, and on the island of Gotland in the Baltic it grows in sand under pine trees near the sea (Figs. 26, 27).

In Britain it has always been an exceptionally rare plant, growing almost exclusively in beech woods on either chalk or limestone. Even where colonies are of moderate size, the bulk of the population will be nonflowering, and it is capable of existing in a purely vegetative state for years at a time, only to reappear unexpectedly when it has been presumed dead. The roots carry a very heavy mycorrhizal infection, enabling the orchid to exist saprophytically underground, then reappearing if local conditions change for the better.

The felling of mature trees in the vicinity of a colony, resulting in increased light, can be the stimulus required to make the Red Helleborine flower. The Great Hurricane of October 1987 devastated huge areas of mature woodland in southern England, and after the debris was cleared, botanists scoured likely sites in the following years in the hope of rediscovering the Red Helleborine.

This is one orchid where the history and myths associated with it are almost as fascinating as the plants itself. Red Helleborine has been known from beech woods in Gloucestershire for many years, growing originally in three locations, although numbers of plants have decreased greatly in recent years for reasons which are not understood. One of the oldest records is for 1836 in the Quantock Hills of Somerset, but the record was never independently confirmed, and it has never reappeared. There are other old records for Kent, Berkshire and Hertfordshire (1944), but again there has been no verification of the records or extant herbarium material. Old records of other very rare orchids are usually dismissed as implausible, but a few years ago a herbarium specimen of the equally rare Military Orchid collected in Kent in 1836,

Key to figures from the Column

14. Spotted capsule on *Drymoanthus flavus,* Lake Hauroko, 20 Jan 2004.

***Gastrodia* roundup**

18. *Gastrodia* aff. *sesamoides* Iwitahi 9 Jan 2004, sectioned to show orange drape at base of labellum free of the anchorage to the perianth. Labellum's orange tip well to right of pollinia on a not-so-long column.

19. *G. cunninghamii,* unscented and unusually green from Nelson 25 Dec 2003 by Mark Moorhouse. Yellow drape at base of labellum, anchored to the perianth tube. Labellum tip here dark green but usually very dark brown. Very short column with stigma, rostellum plate and pollinia, tightly bunched. N.b, mirror background.

22. *G.* "long column" from shade in Anderson Park 22 Jan 2004. Dark outside but the same inside as Fig. 20 in-the-sun. Orange drape at base of labellum, anchored to the perianth tube as in *G. cunninghamii.* Longer column than *G.* aff. *sesamoides.* Rounded "grit" on stigma unique to this flower, source unknown.

24. *G.* "long column" at Cape Farewell in sand and deep shade 3 Feb 2004. 26 flowers, slightly scented on a warm midday. Flowers on a smaller, unscented plant alongside, extended at right angles.


18


19


22


14


24

Figs. (clockwise from top left) 20, 23, 21, 25, 26, 27.

turned up in a museum in Bolton, Yorkshire! The "myth" of Military Orchids in Kent had always been dismissed as nonsense.

In 1955 Red Helleborine was discovered in the Chilterns in Buckinghamshire, where it still grows but flowers erratically despite careful conservation efforts.

My own county of Sussex has three "mythical" records for Red Helleborine. In 1910 it was found on the edge of a garden in a village called Houghton, but no one knew if it was natural or introduced. Then there is the famous story of a bunch of Red Helleborines seen in the hands of a woodcutter near Poling, only a few miles west of Houghton. Finally in 1991 an entomologist, who knew the species well in Europe, claimed to have photographed it in flower near Arundel. The picture clearly showed Red Helleborine, but the background does not enable one to be sure where the picture was taken, and it has not been refound there. The Arundel site is midway between the other two Sussex sites.

One could easily dismiss the Sussex records as rubbish, except that in 1986, not far away across the county boundary in Hampshire, Red Helleborine was found flowering in a wood where it had never been seen before, probably as the result of tree felling nearby.

The erratic behaviour of such a rarity is interesting enough, but the plant is also a real beauty. The colour of the flowers is intense pink, the unopened buds reminding one strongly of a small freesia. The flowering spike measures 20-60cm, most plants in Britain being rather small, with only three to six flowers. The leaves are short, rather dark green and pointed, and also rough to the touch. The stem and all the floral parts are covered in tiny glandular hairs. The petals and sepals are long and pointed, arching back to expose the pointed, pink labellum, which has a pale yellow centre and five to seven orange ridges on the distal half - the epichile.

In England Red Helleborine is pollinated by the male Mason Bee (*Osmia caerulescens*) and by a small Solitary Bee, possibly *Chelostoma fuliginosa*. Small hoverflies also visit the flowers, and I have seen pollen removed by a Small Skipper butterfly (*Thymelicus sylvestris*).

Work in Gotland, Sweden, by Dr L Anders Nilsson has demonstrated that pollinating insects are deceived into visiting the flowers. Red Helleborine has no nectar, but has colour spectrum identical to that of a nectar producing Campanula. The fragrance is quite different chemically, so it is colour which acts as a deceit. Seed production in England is poor - maybe our bees are wiser than their Continental counterparts!

...***references overleaf…***

← Key to figures

The Column: *Gastrodia*

20. *G.* "long column" in the sun at Anderson Park, Invercargill 19 Jan 2004. The few flowers are pale, desiccated and not expected to set seed but still looked beautiful to a *Gastrodia* starved Column.

21. *G.* "long column" . The sole specimen found at St Arnaud 1 Feb 2004 in bright shade after rain. Flowers well spaced, golden olive with gold knobs on.

23. *G.* "long column" Holt Park, Otautau 24 Jan 2004 Underside of labellum was split during surgery. Knobbly central ridge and forked part hang straight down. (Forked part folds outwards in *G.* aff. *sesamoides* and inwards in *G. cunninghamii*.) Upper side of column got bumped, the anther/pollinia detached from the rostellum at right and landed on the stigma.

25. Head on view of a Cape Farewell *G.* "long column" shows the M section labellum and 2 tiny pollinia tips peeping over the anther cap.

British orchids

26, 27. *Cephalanthera rubra,* the Red Helleborine

The Western Australian Regional Orchid Organization will hold a WA State Orchid Conference, which will be called the **WA Orchid Spectacular**, and will be held at the Fremantle Passenger Terminal in Fremantle WA, **13-19 September 2005**.

"This is the first in a series of bulletins to let people in the orchid world know about the Conference. We hope to have updates at regular intervals between now and September 2005. Our lecture program is not yet completed, but so far we have had acceptances by Michelle Andriamanamihaja, Madagascar, Madagascan orchids; Ray Clement, NSW, Australian native epiphytes; Doug Matters, Queensland, Phrags; Ron Parsons, California USA, rare orchid sp; Norito Hasagawa, California USA, Paphs; Kevin Western South Aust., Aust. native terrestrials +flasking + deflasking; John Robertson, Queensland, Phalaenopsis; Geoff Stocker, Queensland, PNG species; Terry Poulton, Victoria, Cymbidiums; David Banks, NSW, variation in Dendrobiums; Ross Maidment, Queensland, Cattleyas; Kevin Hipkins, NSW, Odontoglossums; most of the guest speakers will also be orchid vendors.

"One of the great attractions for the conference will be organized tours of our WA native orchids flowering in situ. WA native orchids are renowned for their mass flowering, and September is the prime time to see them at their blooming best. We also expect to have a major speaker on the subject of our local orchids

"The venue, the Passenger Terminal at Fremantle, overlooks the Fremantle Harbour and is close to all amenities and public transport. We expect to have a free bus pass the door on a regular basis. This bus takes a circular route around Fremantle, picking up and dropping off along the way. Registration forms are in the process of being drawn up and will be made available as soon as possible. We expect that there will be an early bird registration, so don't miss out. Our web site is being set up as I write. It will contain all the info you could require."

Tony's Orchid Page:
http://members.iinet.net.au/~emntee/
Wanneroo Orchid Society:
http://members.iinet.net.au/~emntee/page2.html
Wanneroo Newsletter:
http://members.iinet.net.au/~emntee/page49.html

...Continued from previous page….

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The Species Orchid Society:
http://members.iinet.net.au/~emntee/page18.html

Chuck Landis wrote (10 February), "While clearing a track through an area of regenerating natives containing a few rhododendron seedlings adjoining our garden here at Warrington, I came across two *Gastrodia* orchids. I've made measurements, 'taken apart' a couple flowers under the microscope, and made some sketches. I am fairly certain that they are ***G.* 'long column'** as in your 1999 book and Hugh Wilson's Stewart Island book. Sometimes I can even catch the fragrance of freesias. I should add that I am not (have not been) a botanist or even committed orchid follower, but rather am a keen amateur botanist, who has picked up the interest in retirement. The plants (two) are in line with, and are 15 & 50 cm away from, a 1m plant of *Rh. thomsonii,* grown from seed (obtained from China and germinated by Brent Murdoch), and I suspect they are related to its root system. They are in a shady area dominated by Fuchsia and Mahoe. I am writing because I see in your *Nature Guide to NZ Native Orchids* that 'Long Column' is not recorded from Dunedin area…. Note that the two plants are not tall, only 30-35 cm, with 24 and 34 flowers each".
Chuck sent flowers which were indeed Gastrodia "long column", a new record for that region—Ed.

Oops! "In my article on milk production last week please read cow for horse throughout." That correction of HL Mencken's is the favourite of Richard Smith, editor of the *British Medical Journal*. Another favourite is: "Instead of being arrested, as we stated, for kicking his wife downstairs and hurling a kerosene lamp after her, the Reverend James P Wellman died unmarried four years ago." As an editor who is responsible for any errors in *NZNOGJ*, I have sympathy.

If the inference from our occasional "Oops!" column is that the *Journal* is sloppy, I am, like Richard Smith, wholly unapologetic. "Great publications," he observes loftily, "are full of corrections. Look at the *New York Times* or the *Melbourne Age*. It's crummy publications that don't have them. We all make mistakes, but we don't all admit them."

Errors are usually pointed out by assiduous readers, and we are grateful.

Chiloglottone? That is the name given to the single chemical compound that *Chiloglottis trapeziformis* and the female of the Australian thynnine wasp *Neozeleboria cryptoides* each produce to attract the male wasp. Whereas most volatile attractants ("scents" and pheromones) are composed of many compounds, this orchid has only one, a fascinating concept when you come to consider co-evolution of the orchid and the wasp. For some truly stunning photographs of the male wasp and the orchid flower, see http://www.anu.edu.au/BoZo/orchid_pollination/, or you can read the original article (Schiestl FP, Peakall R, Mant JM, Ibarra F, Schulz C, Franke S, Francke W. (2003). The chemistry of sexual deception in an orchid-wasp pollination system. *Science* 302, 437-438. Published October 17).

John Milton (the English poet) wrote, "Give me the liberty to know, to utter, and to argue freely according to conscience, above all liberties. **Truth** was never put to the worse in a free and open encounter... It is not impossible that she (truth) may have more shapes than one... If it come to prohibiting, there is not ought more likely to be prohibited than truth itself, whose first appearance to our eyes bleared and dimmed with prejudice and custom is more unsightly and implausible than many errors... Where there is much desire to learn there of necessity will be much arguing, much writing, many opinions; for opinion in good men is but knowledge in the making." A good credo for the editor of a scientific journal, don't you think?

For information on ***Diplodium (Pterostylis) alveata***, see http://www.anos.org.au/

information/articles/species/ptobtusa.htm.

The **2005 World Orchid Conference** - for the first time in its 90 years' history - will be held in France, in historic Dijon, the beautiful capital of Burgundy, home of the renowned vineyards, in March 2005. Look for details at http://www.woc2005.org/.

Turkish native orchids: 64 species, 130 photographs; see them at www.geocities.com/anatoliannativeorchids.

Margaret Menzies described and photographed her ***Thelymitra hatchii*** from the Waitiri track in J77 p14, and it looks identical to my pink-cilia *T. hatchii* from Mt Holdsworth, Tararuas [J90: 23, 26].

Bruce Irwin wrote, "Since I submitted drawings of ***Nematoceras* (*Corybas) triloba* "tussock"** to the Journal, Graeme showed me photos of the taxon (see pp9, 11 this issue) on which the upper/sidelobes of the labellum were held almost vertically, rather than horizontally, as in my drawings. Consequently, on side view, no gap showed between top of labellum and dorsal sepal. However this would mean that the upper labellum lobes on fresh flowers would be held even further apart than in my sketches, a character that separates them from any other form of *N. triloba* I have observed. The comparatively very short lateral tepals and the leaf clearly longer than wide, are other points of difference.

Correction: in J90 p31 (*Corybas* "tussock") the leadline from the note "stigmatic disc" leads not to the stigma, but to the base of the column. The sketch of the column on the right is correctly labelled.

Dan Hatch wrote, "You say people are objecting to the **new generic names**—how far back do you want to go? To Georg Forster in 1786 and *Epidendrum autumnale*? Or Forster's *Ophrys unifolia* in the same paper?" *Hhmm. Good point—Ed.*

Lissopimpla excelsa is the famed **ichneumonid wasp** that pollinates *Cryptostylis subulata*, and seems to be known as the "orchid dupe" in Australia, where it has been observed pollinating all the *Cryptostylis* spp., as well as *Prasophyllum* aff. *frenchii* and members of the *P. odoratum* group (of which our *P.* aff. *patens* is one). Unusually among orchids, *Prasophyllum* does offer a reward to

its pollinator, in the form of nectar.

Lissopimpla excelsa

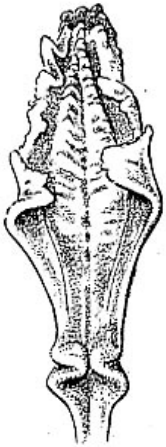
Eric Scanlen wrote, "Bruce Irwin's excellent drawings of *Gastrodia* labella in Journal 38:**7**, June 1991, (opposite) rang a bell with the Column, only because he'd just been reading Colenso's diagnosis for *Gastrodia leucopetala*. Bruce was quite apologetic in J38:6 for illustrating this same atypical labellum on *Gastrodia cunninghamii* in Ian St George's and Doug McCrae's 1990 *NZ Orchids, Natural History and Cultivation* pp 28 & 45. The "atypical" labellum on the left in J38:**7** matches Colenso's diagnosis of *G. leucopetala* quite nicely but Bruce remains loyal to it belonging to *G. cunninghamii* and "showing the sort of variation we can expect within a species." The Column isn't so sure.

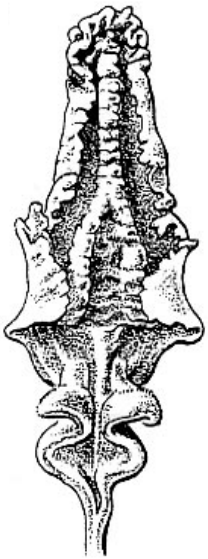
Colenso wrote in part, in the *TNZI* 1886 18; "labellum... anterior portion... with two reddish longitudinal ridges, their margins

Gastrodia cunninghamii

drawing by Bruce Irwin from J38 p7.

Median calli appear as two quite separate ridges sloping evenly to centre line





Calli fused about halfway below that point forming two separate narrow ridges, the inner margins dropping steeply, NOT sloping gently to centre lobe.

Labellum from book—specimen from Rotorua.

Labellum from Tauranga Dec 1990 agreeing closely with Waihi specimens.

Underside of labella [Journal 38 June 1991]. Left, typifies *Gastrodia leucopetala* Col. but the artist backs *G, cunninghamii* whose typical decoration is on the right.

thickly crenulato-fimbriate, rising divergent from the middle and convergent towards tip, but not joined to it…". There was no drawing attached but Bruce's would have done! The usual wishbone-like callus in *G. cunninghamii, G.* aff. *sesamoides, G.* "city" [J78:30] and *G.* "long column" all sport the yellow to orange wishbone-like calli under their labella. So Colenso's and Bruce's paired callus ridges *would* seem to be significant variations from most *Gastrodia* not including *G. minor* which also exhibits Colenso's twin ridges but is no contestant for its small size and few flowers. Other features of Colenso's description, such as the dark labellum tip, makes *G. leucopetala* disarmingly similar to *G. cunninghamii* at a casual glance.

TF Cheeseman was unimpressed with *G. leucopetala*, as he was, rightly or wrongly, with most of Colenso's species and lumped *G. leucopetala* with *G. cunninghamii* in his 1925 *Manual of the NZ Flora*.

Moore and Edgar (1970 Flora II p158) followed Cheeseman but found type specimens at both WELT and AK(?).

The Column is presently backing Colenso but would dearly like to see fresh specimens.

Moral: be critical, do take the time to search out apparent differences in your finds from like species. Our orchid history is littered with the edicts of the acknowledged experts like Cheeseman who weren't always right.

Action: anyone in forest from Dannevirke to the Rotorua area with a x10 lens and a razor blade in early to mid December and who finds numerous tall, dark, short columned *Gastrodia*, please do a careful section of one fresh flower. Look for that callus under the labellum. If it is the yellow wishbone variety, you have *G. cunninghamii,* if it has Colenso's "two reddish longitudinal ridges" you will have *G. leucopetala.* Kindly get the approval of the land owner and arrange for 3 fresh specimens of *G. leucopetala* to be sent fast-post to Dr. Brian Molloy for DNA analysis,

This is the third part from Walter Hood Fitch's articles first published in the Gardeners' Chronicle, 1869.

Composite flowers, such as the Daisy, after being faintly defined, should be subdivided by lines radiating from the centre, as a guide for the direction of the outer florets. Inattention to this precaution is apt to result in the said florets being all endowed with a twist or curve to one side or the other, an arrangement unknown, I believe, to botanists, in this natural order.

In drawings for scientific purposes, it is proper to mark the number of outer florets, also the number of teeth at the tips, as in some plants they are more or less numerous. The direction the florets assume, whether spreading or reflexed, should be noted.

The florets of the disc, or centre, will be found rather troublesome to render, being geometrically arranged, and often very numerous. An attempt to put in every floret, particularly would be certain to result in confusion, therefore it is a saving in labour, and more effective, merely to put in the more prominent parts which strike the eye of the observer, such as the anthers or stigmas.

Four-petaled flowers, such as the Wallflower, should be treated somewhat similarly when they are large enough to be worthy of that trouble; a square or circle should be first drawn round the petals, then divide it into four parts—great assistance will be derived from it in insuring the relative size of the petals.

Pendulous flowers, such as the Fuchsia, may be treated likewise, but in such flowers there is one thing that should be particularly attended to—the curve formed by the peduncle or flower-stalk, owing to its slenderness or the weight of the flower. To make sure of the proper curve, it is useful to indicate the flower-stalk by a faint line carried through the flower as its axis in sketching, which will be found of great service, and the errors frequently visible in drawings of such things would be of less common occurrence, not to speak of the protruding filaments pointing in various singular though impossible directions. I shall not attempt to furnish more than hints as to sketching oblique or irregular flowers.

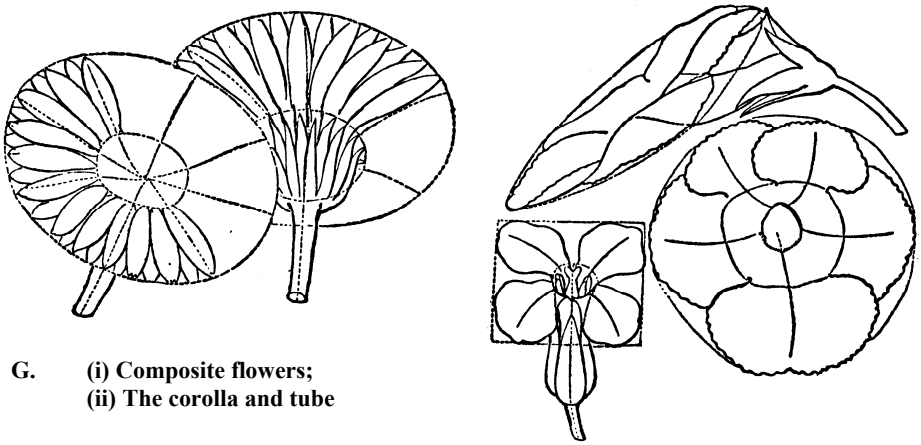
The following cut (Fig. G ii) will show how to fit the corolla on its tube with some degree of certainty, but the amount of obliquity must be given by observation. To flowers such as those of the Aconitum or Monkshood, the Larkspur, and labiate flowers generally, often very varied in form, many of the previous remarks will hardly apply; and the best way to proceed is to measure one part by another; thus the tube may be rather longer than the calyx, the upper lip may be shorter or longer than the lower one, etc.

Be careful to represent the teeth of the calyx in their proper place in relation to the divisions of the corolla, viz., alternate with them, or intermediate.

And as a general fact, however irregular the flower may be, the teeth of the calyx point betwixt the petals or divisions. The want of observation of this fact is an error very common in slovenly drawings, but in the estimation of a botanist its exhibition would be quite enough to shake his faith in the trustworthiness of any artist, however beautiful his works might otherwise be, as it betrays carelessness, which is worse than ignorance.

Botanical artists require to possess a certain amount of equanimity to enable them to endure criticism, for as no two flowers are exactly alike, it is hardly to be expected that a drawing should keep pace with their variations in size or colour, and I may add that I never yet ventured to exaggerate a little in that way but I have found that adverse criticism has been nullified by Nature excelling itself, as it were, under the fostering care of the many able cultivators of the present day.

Orchids.—Perhaps there are no flowers more varied in size, form, and colour, than those of Orchids, and I think I may add more difficult to sketch, if the artist has not some



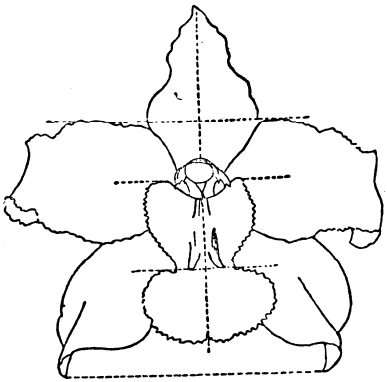
G. (i) Composite flowers; (ii) The corolla and tube

general knowledge of their normal structure. Dr. Lindley remarked, upon seeing the representatives of three different genera flourishing on the same spike, that after that they were capable of any eccentricity. Indeed they almost seem to have been created to puzzle botanists, or to test an artist's abilities, and consequently they are all the more worthy of a skilful pencil in endeavouring to do justice to them.

Owing to the great variation in form presented by some species, if the artist render correctly any specimen put in his hands, he is liable to have his veracity called into question, and, if any abnormal growth come in his way, he had better not be rash enough to represent what may be regarded as impossible by some authority who has made Orchids his speciality. It might tend to upset some favourite theory, or possibly to destroy a pet genus—an act of wanton impertinence which no artist endowed with a proper respect for the dicta of men of science would ever wilfully be guilty of!

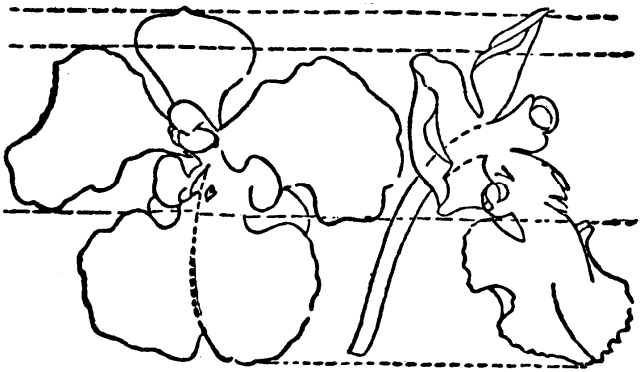
It is impossible to lay down any rules for sketching these protean plants, but if the structure is not correctly rendered in a drawing it is worse than useless, as no colouring will redeem it. At the risk of saying what I presume is well known, I may state that the parts of the flower consist of a germen, or ovary, surmounted by three sepals, two petals, a lip, and a column, as in the following cut.

As Orchid flowers are so very irregular in the relative size of their parts, and especially the lip, the best way is to measure one part by another, and, if a front view of a large flower be given, a perpendicular line should be made, or imagined, through the centre, and also transverse ones, as guides for the pose of the petals, etc.



H. The Orchid. front view

In the following sketch I suggest a means of testing the relative size of a front and side view. The artist should be guided by the front flowers in his drawing, for there is a liability to make the side views too large. Another matter to be noted, and which is often neglected, is the junction of the flower-stalk and column; the way to prevent any hitch in this respect is to carry the outline of the germen and flower-stalk through to the back



I. Orchid, perspective views

of the column, as in the right-hand cut of Fig. I. Drawings of the smaller species of Orchids are of little scientific value without a flower and magnified representations of its parts, as the smaller they are the more curious is often their structure.

In magnified portions of simple flowered species, it is generally enough to give a side and front view of the lip and column, but in some cases it is necessary to pull the flower asunder, in order to represent parts otherwise hidden. If the flower or its parts be just large enough to be comprehended by the naked eye without a lens, it would be as well for the artist to regard it with one eye only, or he will find if he sketches it as seen with both eyes, that he sees round the corners, and is apt to commit an error similar to that of representing both ends of a drum as visible from the same point of view.

In the next cut (Fig. J) I offer a sketch of an Orchid, to show how to fill a sheet of paper as tastefully as the plant will allow, so as to leave no unnecessary vacant space. Some Orchids are very unmanageable in this respect.

If the pseudobulbs are compressed, it is as well to show the flowering one edgewise, so as to have variety in the position of the leaves, viz., a front and back view of them. The same may be said also of the spikes of flowers. After deciding whence the spike should spring, and the curve, if any, to be given to it, I would recommend that the attachment of the flower-stalks should be ticked off, and that a line continuous with the stalks be carried through the flower faintly to the column, which should be put in first as the axis, then the lip and other petals can be correctly placed with reference to it. By following this simple plan, the flowers, though they may hide the flower-stalk, will be certain to be correctly placed.

J. Orchid; a study in composition

New records and extensions of known distribution for orchids in SA 2003

by Bob Bates, from the *Journal of the Native Orchid Society of South Australia* Vol 28, 1 Feb 2004.

2003 saw average to above average rainfall in most of the orchid areas in SA and several species previously unrecognised were identified in our state, particularly in the genus *Thelymitra,* the sun orchids, which are currently being reviewed by Jeff Jeanes. We can expect a major paper this year naming at least 10 new SA species in the *Thelymitra nuda-pauciflora* complex. Most of these have been recognised for many years and hence cannot really be regarded as new. NOSSA members have stepped up the field study of sun orchids and last spring saw the discovery of several unnamed species not previously considered, especially in the Mt Lofty Ranges and Southeast. These species will be studied in even more detail in 2004. Species collected in the south-east in November include *Thelymitra malvina* at three separate locations from Comaum to Mt Gambier (this species had not been collected in SA previously). Good collections were made of *T. merraniae* (The Marshes), *T.* x *truncata* (Kangaroo Flat), *T. mucida* (The Marshes), *T.* aff. *mucida* "aquatic" (the Marshes) and *T.* aff. *holmesii* (Kangaroo Flat). In addition three new species were found in the south-east.

In the Mt Lofty Ranges a further three new species were recognised and one undescribed species *T.* aff. *holmesii* previously recognised from the Flinders and Northern Lofties was located on a property at Coromandel Valley belonging to NOSSA member Neil Nilsson... a new record for the Southern Lofties.

There were also some good *Prasophyllum* discoveries with a new summer species being collected and photographed by NOSSA members, Barbie and Ken Bayley, at Ngarkat and on southern Yorke Peninsula. This new species brings the number of *P. odoratum* complex species in SA up to eight.

While studying sun orchids in the Flinders Ranges in September the author was surprised to find plants of *Glossodia major* near Alligator Gorge, the first record and first collection of the species in the Flinders Ranges.

With some fifty unnamed species known in SA it was again disappointing to have just one new name *Paracaleana disjuncta* DL Jones, from SL and Kl. At this rate it would be over 50 years before they are all described even without new discoveries! Let's hope 2004 is different!

In the genus *Caladenia* much work was done on the *C. carnea* alliance with the confirmation of the tiny *C. mentiens* in our South-East and good collections made of another new species aff. *pusilla* in Penola CP. We also had confirmation of *Caladenia filamentosa* in our South-East thanks to the Houstons and the first collection of *Caladenia* x *variabilis* from Yorke Peninsula was made by the Bayleys.

Among the greenhoods Barb and Ken Bayley also took the first verifiable photos of *Oligochaetochilus planulata* in SA (in Ngarkat). Friends of Ark on Eyre photographing plants of *Oligochaetochilus (Pterostylis)* on Mt Olinthus on Eyre Peninsula also revealed another new species to give the state an estimated 20 species of *Oligochaetochilus.*

We in New Zealand also look forward eagerly to Jeanes's paper—the Thelymitras have posed some difficult questions here (especially the T. pauciflora agg.) - Ed.

in this issue...

Cover
Pterostylis cardiostigma, Iwitahi, December 2003.

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