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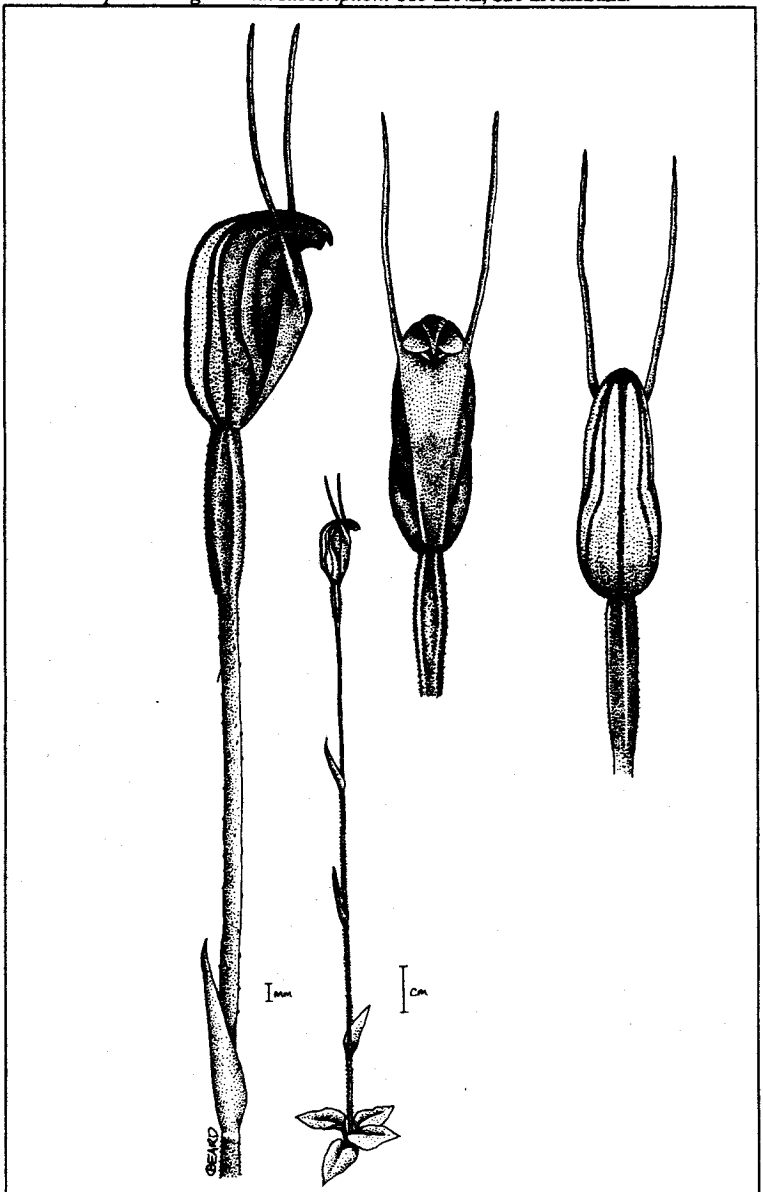


Pterostylis puberula, Kaueranga Valley: 11 Nov 95 - drawn by Catherine Beard

Contents

From the editor

Pterostylis aff. *nana* (aka *P. puberula*)

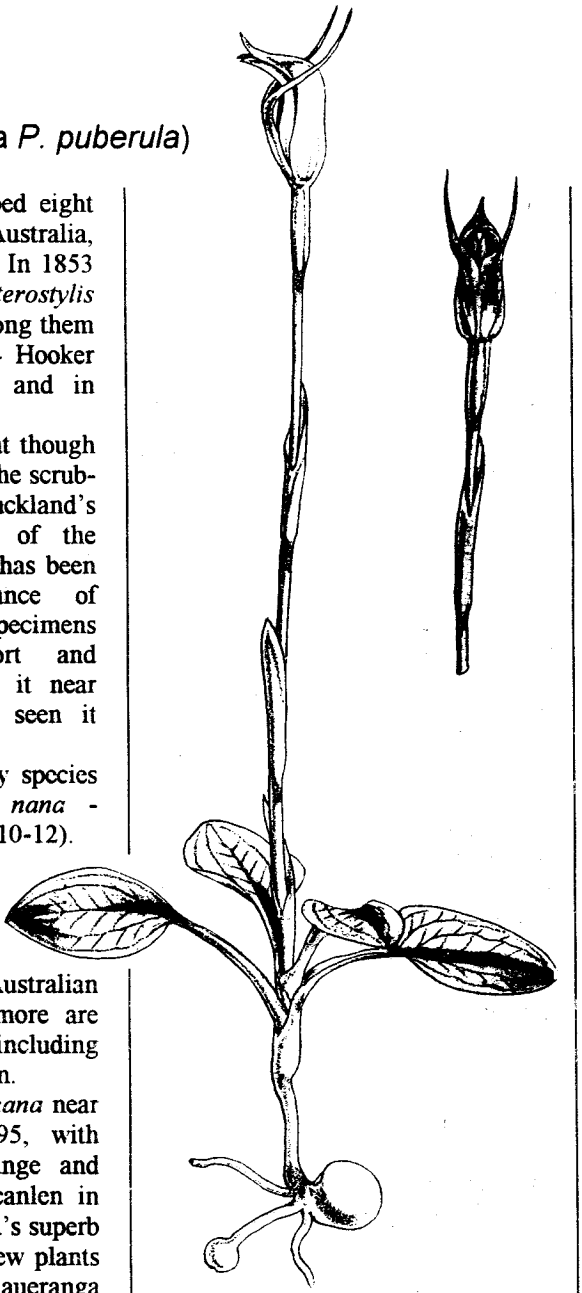
In 1810 Robert Brown described eight *Pterostylis* species from Australia, among them *Pterostylis nana*. In 1853 JD Hooker described eight *Pterostylis* species from New Zealand, among them *Pterostylis puberula*. In 1864 Hooker acknowledged the similarity, and in 1932 Rupp equated them.

Dan Hatch wrote in 1949 that though it was "originally common on the scrub-covered gumlands of Auckland's western suburbs and north of the Kaipara Harbour, this species has been wiped out by the advance of civilisation". He recorded specimens from Silverstream, Westport and Collingwood. Druce recorded it near Wellington, but nobody has seen it hereabouts for several years.

In Australia more than thirty species have been included in *P. nana* - according to Bob Bates (J40 pp10-12).

Colonies in the Far North and on the Coromandels may be different species. Whether they are identical with one or more of the Australian species, or whether one or more are different, New Zealand forms (including *P. puberula*), remains to be seen.

I first saw a *Pterostylis* aff. *nana* near Adelaide (J57 p35). In 1995, with directions from Peter de Lange and Catherine Beard (see Eric Scanlen in this issue, and Catherine Beard's superb cover illustration), we saw a few plants on the Billygoat track up the Kaueranga valley near Thames, alas overmature on 9 December.



Pterostylis nana, drawn by W Archer, engraved by WH Fitch, from JD Hooker's *Flora Tasmanica*

Pollination studies

- the substance of a talk given at the 1995 Iwitahi meeting by Ian St George

Pollination can be studied in a number of ways, and these are summarised in Table 1. Tables 2 and 3 reiterate the essence of my talk last year - the structural signs of insect or self-pollination [1]. While New Zealand orchids are special in being mostly self-pollinating, about a third are insect-pollinated, and we know almost nothing about the pollinators.

Table 1. Pollination studies

- Structure
  - signs of self-pollination
  - signs of insect-pollination
- Field work
  - change of structure over time
  - exclusion enclosure
  - spider webs on flowers
  - fragments of insects in flowers
  - anther: absence of pollinia
  - stigma: matching pollen
  - catching the insect: dead or alive
  - gene studies

Table 2. What are the signs of self-pollination?

- few, small, inconspicuous flowers barely, briefly or never open,
- no nectar or scent, labellum plain,
- mealy fragmented pollinia,
- prominent stigma close to anther,
- small rostellum,
- gravity-assisted contact,
- plentiful fruit set (ratio fruit/flowers)
- all individuals similar.

Table 3. What are the signs of insect-pollination?

- large, colourful flowers open wide & long,
- attractants: nectar or scent (use metal or glass bottle), labellum big & colourful,
- adherent pollinia,
- widely separated stigma & anther,
- big rostellar barrier,
- gravity unhelpful,
- scant fruit set (ratio fruit/flowers)
- differing individuals in a population.

I have included gene studies for the sake of completeness - they are not for the likes of you and me, but they have been used to determine which individuals in a colony are the offspring of cross-pollination, and which result from vegetative spread.

What is needed beyond careful study of the structure of orchid flowers is observation in the field. One simple method is to count the ratio of flowers to fruit set; Thomson and Cheeseman did that a hundred years ago [2-6].

Count the flowers in a colony. Later count the fruit.

It's as simple as that, but it gives us a powerful clue (far from infallible, mind you) about pollination.

Change of structure over time seems important - structures that in a young flower inhibit self-pollination, change as the flower matures to promote it.

Thomson wrote of *Microtis unifolia* in 1879 that, "After a time the pollinia appear withered and brown, and somewhat dragged forward from their anther cells.... The pollen grains have emitted a great mass of tubes, which penetrate the upper margin of the stigma, thus ensuring fertilisation" [4] (Table 4).

Cheeseman noted a similar process in the *Thelymitra longifolia* column.

Bruce Irwin showed that in mature flowers of *Orthoceras novae-zeelandiae* the pollinia stick to the back of the stigma, and appear to penetrate it.

Brian Molloy pointed that in the ususally pendant flowers of *Gastrodia* "long column" the stigma is above the anther, an arrangement that would prevent self-pollination. As the flower ages though, it is pulled upward to reverse the usual relationship, allowing the pollen to fall by gravity onto the stigma.

Table 4. Field work: change of structure over time

- *Microtis unifolia* (Thomson)
- *Thelymitra longifolia* (Cheeseman)
- *Orthoceras novae-zeelandiae* (Irwin)
- *Gastrodia* "long column" (Molloy)

Table 5 lists some other field studies that would be useful. If a plant sets fruit when insects are excluded it must self-pollinate. If you pollinate a flower with its own pollen and it does not set fruit, it cannot be a self-pollinator.

If spider-webs are set across flowers, does that mean spiders know insects will visit? Or do spiders simply use the tall flowers as tent-poles for their webs?

If you find fragments of insects inside flowers, sticking to the stigma for example, that is at least a sign that insects do visit.

Table 5. Further field work

- exclusion enclosure & fruit set
- active autopollination
- spider webs on flowers
- fragments of insects in flowers.

Exclude insects and note whether fruit is set.
Autopollinate a flower and see whether fruit is set.
List the flowers you see with spider-webs.
Open flowers and note whether insect legs or wings are stuck to the parts.

Look at Table 6. If pollinia are absent from some flowers (and are not stuck to the stigma!), they must have been removed. If pollinia are present on the stigma, and yet the pollinia are intact in the anther of the same flower, they must have been deposited from elsewhere.

In one recent Australian study, the pollen granules stuck to the stigmas of *Thelymitra ixioides* were compared with those illustrated in a pollen atlas: there were many kinds of pollen present, not all of it from orchids - the insects visited many flowers in the area, showing no

particular preference for the orchids [7]. An Australian investigator has dyed the pollinia of some flowers blue, and then looked at other flowers to see how far blue pollen had been taken.

Table 6. Further field work

- anther: absence of pollinia
  - ratio absent/all
- stigma: pollen present
  - extra pollen present
  - pollen atlas
  - dyeing pollinia
- catching the insect
  - Nic Bishop & p/e beam photography
  - butterfly nets
  - establish colony in laboratory

Note whether pollinia are absent from anthers; at the same time
Note whether pollinia are present on stigmas.

But the standard for proof of insect pollination is to capture the insect.

Nic Bishop is a NZ photographer who has a very powerful camera-flash which is triggered by an insect crossing a photo-electric beam. He produces magnificent pictures of insects on the wing, the fast speed freezing them in mid-air. His technique could be adapted to "capture" visitors to orchids on film.

I have three times seen insects with pollinia stuck to them - on *Thelymitra longifolia, Pterostylis banksii* and *Corybas trilobus;* I have never caught one. I now carry a small butterfly net and hope to improve my performance.

Try to photograph insects visiting orchid flowers,
Try to catch them with a net.

One Australian scientist has established a colony of ants in his laboratory in order to study their behaviour around the Australian orchid *Leporella* [8].

Table 7. Criteria for an insect pollinator [9]

- unladen insect alights on flower whose pollinia are intact
- pollen is attached to insect as it leaves
- insect transfers pollen to stigma on entering this or another flower
- pollen so deposited causes fertilisation
- insect is captured and identified
- orchid species is correctly identified

Table 8. Pollinator status [9]

- Confirmed: all above criteria
- Probable: one or more criteria not met - usually insect removes pollinia but not seen to re-visit or deposit it
- Suggested: visits of insects to flowers, presence of insect in flower, with or without pollen from an unidentified source

For an insect to be identified as the pollinator of an orchid, certain criteria must be met, and these are listed in Table 7. Table 8 gives three grades of pollinator status, depending on how many of these criteria are met [9].

Table 9 lists what we know now of NZ orchid pollinators (they may not be the same as in Australia) from the early observations of Thomson and Cheeseman, to D. Millar (see Historical Reprint in this issue), through the observations of George Fuller of fungus gnats pollinating *Corybas iridescens* ("probable" pollinator [10]) and those of Digby Graham of ichneumonid wasps pollinating *Cryptostylis subulata* (our only "confirmed" pollinator [11]), to Cath Wilson's pollen-fly on *Calochilus robertsonii* ("suggested" [12]), my native bee on *Thelymitra* aff. *longifolia* [13] and fungus gnat on *Corybas* "Trotters" [14] ("probable?"), and Eric Scanlen's crane-flies on *Earina autumnalis* and near *Corybas* "whiskers" ("suggested"). Brian Molloy listed predominantly insect and self-pollinating species in 1990 [15].

Table 9. What do we know now?

- Thomson, Cheeseman (1873-1927): structure & pollinia counts
- Molloy's list (1990)
- insect observation
  - Fuller (1980), *Corybas iridescens*
  - Graham (1983), *Cryptostylis subulata*
  - Wilson, Scanlen etc

There is plenty to do. Table 10 lists some of the easier tasks. For a simple start we do need proper observations on which orchids are scented.

But did I say the other tasks were easy? Here is what Rod Peakall, doyen of Australian orchid pollination studies, has to say, (of *Microtis parviflora* and ants) "The frequency of intra- and inter-plant visits, and the presence, absence and position of pollinia on ant foragers were recorded for 26 man hours...."

(and) "*Leporella fimbriata* was observed throughout the flowering seasons, 1984 to 1986, representing a total of more than 350 hours of observation."

Table 10. What can you do?

- observe structure
  - nectar, scent
- record field work
  - fruit set ratios
  - anther: presence/absence of pollinia
  - stigma
    - presence of extra pollinia
    - dyeing pollinia
  - insects
    - hours of observation, photography, capture

Conclusion

I have tried to summarise our current knowledge of New Zealand orchid pollinators in the chart that follows. It lists mostly those species identified by Molloy as being predominantly insect-pollinated.

Clearly there are other species that sometimes benefit from cross-fertilisation; for example *Corybas oblongus* - an orchid almost perfectly structurally-adapted for self-pollination - is visited at least occasionally by a fungus gnat which removes pollen (see Historical Reprint in this issue).

Predominantly insect-pollinated New Zealand orchid species

(list based on Molloy, 1990)

[pollinator status - c = confirmed; p = probable; s = suggested]

Acianthus sinclairii (Cheeseman 1875: structure, *Diptera* seen, insects seen removing pollinia, no fertilisation when insects excluded, 71/89 & 44/47 fruit/flowers)

Aporostylis bifolia (Thomson 1927: 13/22 fls had intact pollinia)

Caladenia carnea (Australia [Adams & Lawson]: bee: *Trigona* sp. [c & p])

Caladenia lyallii

Chiloglottis valida (Australia [Adams & Lawson]: Thynnid wasp: *Neozeleboria nitidula; N. monticola* [p]) (Molloy & Johns 1983 - as *C. gunnii* - 6/32 flowers set fruit, no insects seen, though exclusion of insects resulted in no fruit set) (there are no Thynnid wasps in NZ)

Corybas acuminatus

Corybas macranthus (Thomson 1879: structure, small *Diptera* probably a species of *Culex* were seen near the flowers; dead, alive insects & parts found in flowers with pollinia stuck to heads, 90/143 flowers had pollinia removed) (Thomson 1927: observed insects leaving with pollinia attached to heads)

Corybas orbiculatus (Molloy 1990 - as *Corybas* "short tepals")

Corybas rivularis

Corybas iridescens (Thomson 1927 - as *C. rivularis* - "...small *Diptera*, probably all of the Culicidae...") (Fuller 1980 - as *Corybas macranthus* - & Fuller 1994: fungus gnat *Mycetophylla diffusa* [p] and other *Mycetophylla* spp. [s])

Corybas trilobus (Cheeseman 1875: 4/>200 fruit/flowers ratio)

Corybas* aff. *trilobus

***Corybas* "Trotters"** (St George, 1988: Fungus gnat [p])

Cryptostylis subulata (Australia [Adams & Lawson]: wasp: Ichneumonidae [s] [p]) (Graham 1983: wasp: *Lissopimpla semipunctata* [c])

Cyrtostylis oblonga (Cheeseman 1875: structure, frequent visits by minute *Diptera*)

Cyrtostylis reniformis

Dendrobium cunninghamii (Thomson 1879: structure; 5/22 fls had pollen removed; 1927: 10/80 pollen removed)

Drymoanthus adversus

Drymoanthus flavus (Thomson 1881: structure)

Earina aestivalis

Earina autumnalis (Thomson 1927: 41/91 fls had pollen removed; structure; but "never seen or taken insects on them")

Earina mucronata (Thomson 1927: structure)

Microtis parviflora (Australia [Adams & Lawson]: ant: *Iridomyrmex gracilis, Iridomyrmex* sp., *Meranoplus* sp., *Rhitidoponera* sp.; wasp: Ichneumonidae, Brachionidae [c])

Microtis unifolia (Thomson, 1879: 31/32 fls had pollen removed; reverts

to self-pollination)(Australia [Adams & Lawson]: wasp: Ichneumonidae, Brachonidae [c])(St George 1996 - see below [p])

Prasophyllum* aff. *patens

Pterostylis alobula (Cheeseman 1873 - as *P. trullifolia* - removed labella, saw small *Diptera* in flowers, one dead with pollinia stuck to back, 17/110 fertilised flowers contained dead insects, insect parts stuck to rostellum & stigma, all *Diptera* referable to one species, 28/110 withered flowers had all pollinia intact)

Pterostylis areolata

Pterostylis australis (Thomson 1927: 22 fls all had pollinia intact; "may be self-fertilised")

Pterostylis banksii (Cheeseman 1873: an insect twice the size of that for *P. alobula*)

Pterostylis brumalis

Pterostylis graminea (Cheeseman 1873: insect entered the flower and become entrapped by the lip)

Pterostylis* aff. *graminea

Pterostylis irsoniana

Pterostylis "linearis"

Pterostylis* aff. *montana

Pterostylis nutans (Australia [Adams & Lawson]: fungus gnat: Mycetophylidae [s])

Pterostylis oliveri

Pterostylis patens

Pterostylis rubricaulis

Pterostylis trullifolia (Thomson 1927: 5/14 fls had pollen removed)

Spiranthes sinensis (Australia [Adams & Lawson]: bee: *Halictus* sp., *Apis mellifera, Coelioxys albolincata* [p])

Thelymitra* aff. *longifolia (Thomson 1927: "...in many of them the pollinia had been removed...") (St George 1995: bee *Leioproctus fulvescens* [p])

Thelymitra malvina

Thelymitra* aff. *pulchella

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Braconid wasp probable pollinator of *Microtis unifolia*

Two o'clock on 11 January found me dozing in the grass by a colony of *Microtis unifolia* near Lake Waikaremoana. It was a hot and humid day and the air down at grass level was buzzing with insects.

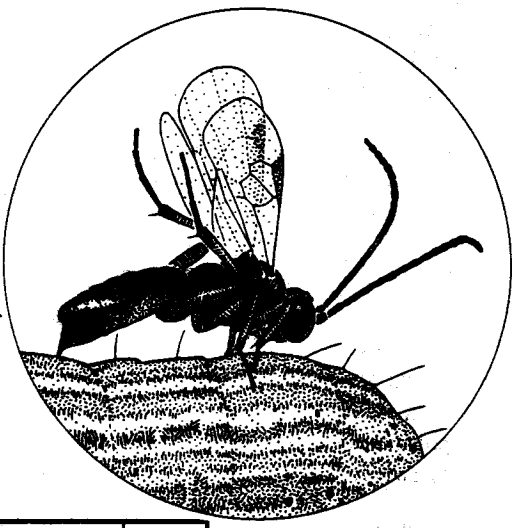
One sandfly-sized creature was struggling to free itself from a *Microtis* flower, and on closer inspection was stuck by its head to the stigmatic surface. As I watched another insect appeared, landed on the labellum of a flower of the same plant, crawled forward to dip its head down behind the labellum, and emerged with a yellow speck on its head. It could only be pollen. Suddenly I was alert.

Several similar insects visited the uppermost open flowers of several plants, ignoring the unopened buds above, and the flowers below with their already fertilised fruits and their dried and darkened empty anther caps. Two of the insects emerged with pollen on their heads. I did not see them enter new flowers and deposit the pollen.

I captured four insects from *M. unifolia* plants. All had bodies 2-3mm long, but one was clearly of a different species from the other three. The three had long curved antennae: two of them had pollinia stuck to their heads; they lacked ovipositors. Dr Jo Berry of Landcare Research at Mt Albert identified them as follows: the three were "*Cotesia ruficrus* (Haliday). This is an introduced braconid wasp, brought into NZ to control several noctuid pests" - called the "armyworm parasite". The single specimen was an "*Euryischia* sp. This is an unusual aphelinid, or parasitic chalcidoid wasp, a male."

The flowers were sweetly scented. I counted five spikes - see the table below.

GM Thomson noted in 1879 that 31/32 flowers had had their pollen removed; he observed that the species reverts to self-pollination when insect pollination fails [1]. In Australia Bob Bates saw small ichneumonid and braconid wasps pollinating *Microtis* species [2 - see Historical Reprint in this issue], and Adams and Lawson regard these as "confirmed" pollinators there [3]. In New Zealand *Cotesia ruficrus* must now be regarded as a "probable" pollinator of *Microtis unifolia*.



Cotesia ruficrus - ↑↑↑↑↑ illustration by Des Helmore, Landcare Research, Auckland

Table: five flower spikes of *Microtis unifolia*

Spike	Total flowers	Buds	Open flowers: pollinia present/absent	Fruit
1	49	13	10/1	25
2	36	3	8/0	25
3	31	8	10/0	13
4	27	10	9/0	8
5	23	6	5/0	12

Dasytes beetle suggested pollinator of *Prasophyllum* aff. *patens*

I was determined to find the single insect pollinator for *Prasophyllum* aff. *patens* this year, but must report failure.

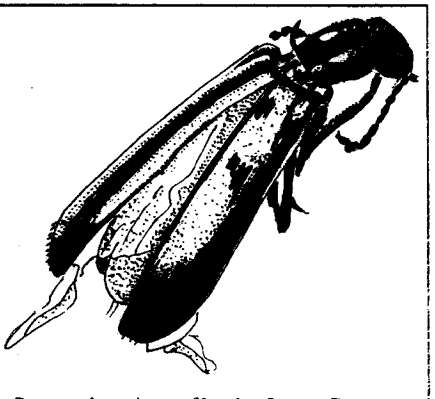
You can smell that strong almond fragrance a metre away, and so can the crawlies. There were plenty in attendance - small grasshoppers, sandflies, blow-flies, another fly being carried downstem by one of two species of spider, and beetles - swarming over the spikes. None bore pollen.

I netted a sandfly. There were several dark creatures seeking something deep inside the flowers: I netted one and it turned out to be a 4mm beetle, one of the species of *Dasytes*, a common genus on many native flowers, and a nectar-eater. I found a weevil caught in spider webs attached to the dorsal sepal of one of the topmost flowers of a spike; it was the furry *Eugnomous ?nubilans* (I am grateful to my neighbour, Dick Hornabrook, for identifications).

Edith Coleman reported pollination of the West Australian *P. muelleri* by a small Chrysomelid leaf beetle, and wrote that Dr Rogers had removed small beetles bearing pollinia from flowers of the S. Australian *P. gracile*.

Adams and Lawson listed various wasps, flies and bees as "probable" pollinators of other Australian *Prasophyllums* - a fly of *Syrphus* sp. and a *Leoproctus* bee on *P. odoratum*, perhaps closest to our unnamed *Prasophyllum*.

I counted two spikes; the Table shows the results. The first spike was younger, and the undisturbed pollinia were in the topmost flowers of the spike - in fact in the youngest flowers the stigma and rostellum formed a lid for the anther cap containing the pollinia. The second spike was older, and the one flower with a single remaining but displaced pollinium was near the top.



Preserved specimen of beetle of genus *Dasytes*

Reference

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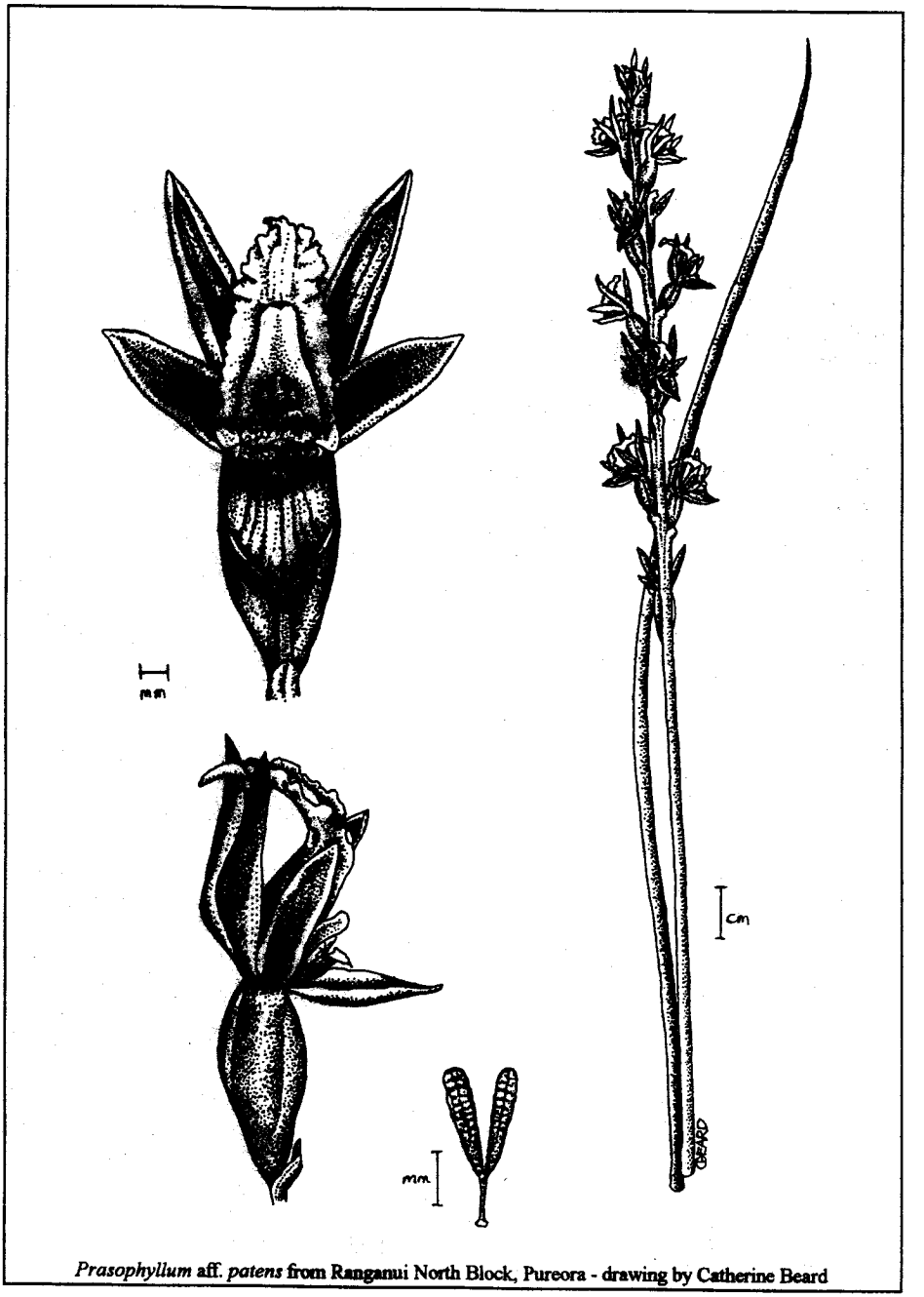
Table: two flower spikes of *Prasophyllum* aff. *patens*

Spike	Buds	Open flowers	Pollinia present	Pollinia present but disturbed	Pollinia absent
1	1	18	12	3	3
2	0	22	0	1	21



Prasophyllum aff. *patens* from Ranganui North Block, Pureora - drawing by Catherine Beard

Original papers

Flies on New Zealand native orchids

by Eric Scanlen

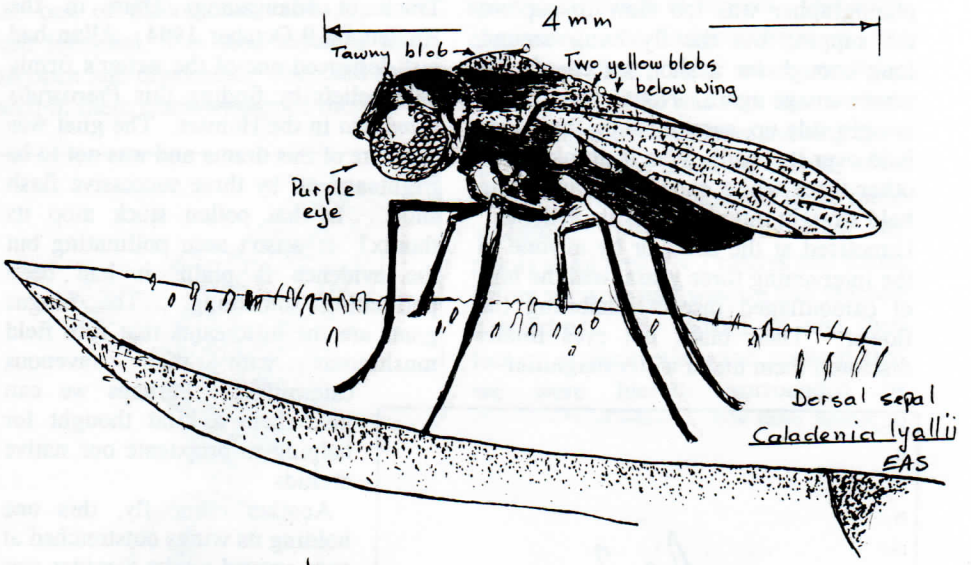
Have you noticed when observing native orchids in flower, that sometimes an odd looking fly or a small swarm of them, take possession of the orchids and will not be moved with anything short of physical violence? The writer has wondered about this phenomenon for many years ever since a hitherto unseen fly appeared on a pair of *Corybas cheesmanii*. They were being photographed by his wife, Gloria on the kitchen table at his house at the Wairoa Dam site in the Hunua Ranges in July 1961.

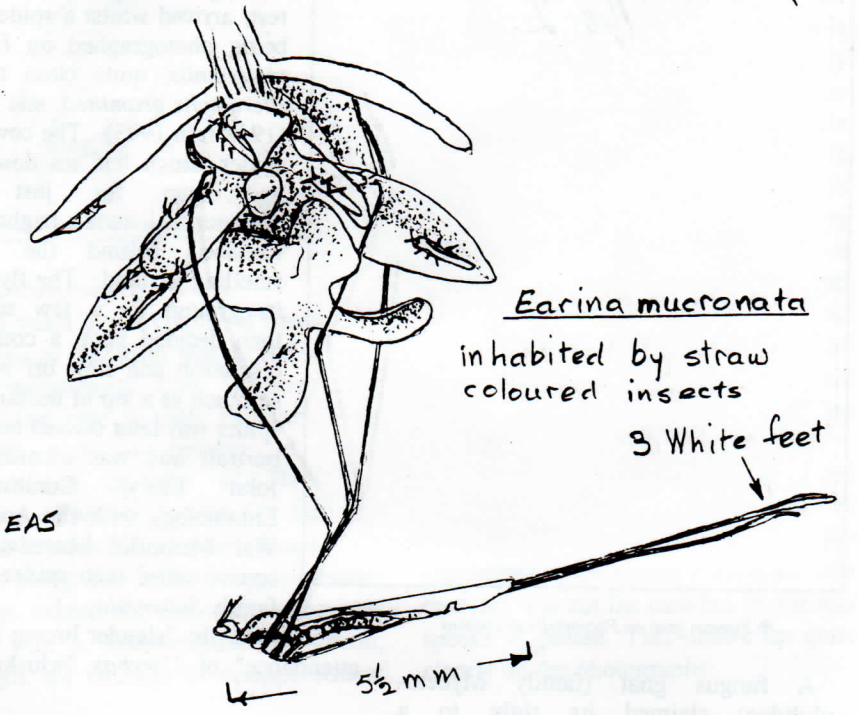
↗ Fungus gnat on *Corybas cheesemanii*

Did the fungus gnat (possibly family Sciaridae) travel kilometres to the table in the flower or did it fly in from the surrounding bush? Why did it ignore the camera, flash and people leering at it?

A miniscule purple eyed fly was definitely the owner of a *Caladenia lyallii* because it let the author take three shots of it with a full 90 joule flash and still wouldn't leave. This was by the Ketetahi track, Tongariro in December 1978. Note the yellow blobs above the base of its back legs. They show up symmetrically on both sides as though they were part of the fly. This black fly against a black background would not print at all well but was traced off the projector screen with a little imagination. Can anyone identify this wee black fly?

Allan Ducker and Graham Marshall observed a strange long legged crane fly (possibly of the family Tipulidae) supping nectar from the early opening *Earina mucronata* at Mt. Messenger Saddle, 19 September 1993. The writer too saw it performing this unlikely act whilst he was frantically readying his camera gear. It was crouching between those improbable knees (and/or elbows).


4 mm
Tawny blob
Two yellow blobs below wing
Purple eye
Dersal sepal
Caladenia lyallii
EAS


Earina mucronata
inhabited by straw coloured insects
3 White feet
EAS
5½ mm

It was not to be distracted. The photographer was too slow to capture the supping but the fly hung around long enough for a shot, traced off the screen image again. Notice that the fly is right side up, suspended by three legs held over its head! Was it drunk? The other three white ended legs are being held straight out alongside its abdomen. Unnoticed at the time, or by anyone in the intervening three years, was the host of camouflaged insects inhabiting the flower. Their black dot eyes finally disclosed them under a 20x magnifier.

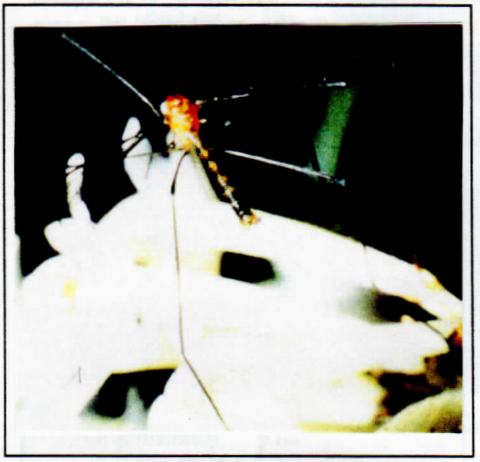
↑ Fungus gnat on *Pterostylis graminea*

A fungus gnat (family Mycetophilidae) claimed its right to a *Pterostylis graminea* by Workmans Track at Mangatangi Dam in the Hunuas on 9 October 1994. Allan had just destroyed one of the writer's firmly held beliefs by finding this *Pterostylis graminea* in the Hunuas. The gnat was unaware of this drama and was not to be frightened off by three successive flash shots. Is that pollen stuck atop its thorax? It wasn't seen pollinating but the evidence is plain; it had been pollinating something. The fungus gnats are the miscreants that ruin field mushrooms with their ravenous caterpillars. Perhaps we can give them a kind thought for helping to propagate our native orchids.

Another crane fly, this one holding its wings outstretched at rest, arrived whilst a spider was being photographed on *Earina autumnalis*, quite close to the *Pterostylis graminea* site above (19 March 1995). The cowardly spider which had no doubt set up camp for just this opportunity, took fright and vanished behind the sweet smelling garland. The fly stood its ground for a few seconds then decided upon a course of discretion and flew off without so much as a sip of nectar. The spider was later coaxed out for a portrait and was identified by John Early, Curator of Entomology with the Auckland War Memorial Museum as a square ended crab spider of the family *Sidymella*.

Remember the "slender brown flies in attendance" of *Corybas* "whiskers" at

Anne Fraser's Ongarue farm? (p22, NOG Journal 58).



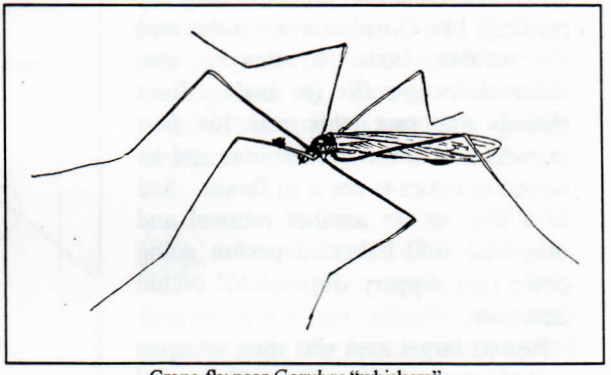
Crane-fly on *Earina autumnalis*

Close examination of two shots some time later, showed not pollinium attached but the steely orb of an orange legged mite hitching a ride on one crane fly's left front leg.John says it is not unusual for mites to hitch a ride, some just as passengers and some as parasites sucking blood from joints in the fly's cuticle.

Contrary to the writer's statement there, these crane flies differed from the one on the *Earina autumnalis* because they held their wings at rest, parallel to the abdomen. (Another one for the Oops column Ed).

John thought they would still be from the same family but he would naturally prefer to identify them from actual specimens.

There were plenty of *Corybas iridescens* and *C. trilobus* about but the crane flies were only seen clustering around the *C.* "whiskers". Two flies were each photographed twice on moss covered rocks by the orchids and both were unfazed by the proceedings but one took off the instant a spider, a quarter its size, swung into the attack.



Crane-fly near *Corybas* "whiskers"

Thanks to John Early for his identifications under difficulties.

Corybas 'trilobus roundleaf' – and *C.* Crawlers become *Thelymitra* Thralls

by Eric Scanlen

1. More Corybas crawling

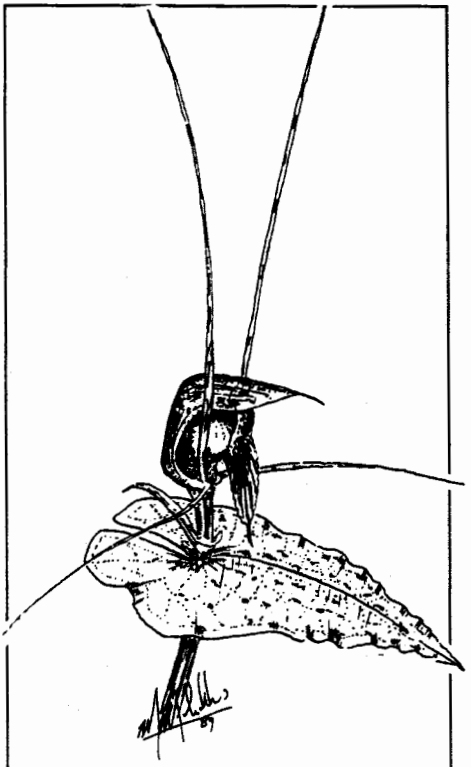
Bruce Irwin led a field-trip of Corybas Crawlers bog-slogging around Ruapehu learning about his heart-felt specialty, the multi-variant *Corybas*. The policy

of "where Bruce goes, one sees orchids" proved true again even if it didn't turn out exactly as planned. *Pterostylis humilis* and *P.* "Erua" were the main attractions for the Northerners at least. Self confessed *Pterostylis* enthusiast John Dodunski showed up early on Friday evening, 24 November at the Taylor Memorial Lodge, Pokaka, despite Ernie Corbett's car blowing a head gasket. Bruce and Geoff Webster had a nice fire going and the technical chatter took the dedicated nine to the witching hour before retiring.

The fringe of the sub-alpine bush across the North Island Main Trunk from the Lodge (right where the last rail spike had been driven), held attractions for casual Saturday morning peeking, like *Corybas acuminatus* and *C. trilobus* both in flower; also *Adenochilus gracilis* (in bud). Ross Bishop was rapt, this was his first introduction to the *Adenochilus* and he vowed to return to see it in flower. Sad in a way, to see another rational and otherwise well balanced person going down that slippery slope of NZ orchid addiction.

Bruce's target area was then set upon and the overcast showery stuff dropped away as the party toured the Rotokura Ecological Reserve, graced by two little beech girt lakes and south of that cloud smothered (and quiet for once), Mt. Ruapehu.

Good pickings! First *Corybas macranthus* then some fresh *Pterostylis foliata* got drooled over (no, not picked) and *P. patens*, literally in their hundreds were admired in a dense patch between path and lake. The local *Corybas trilobus* with butterfly-wing shaped leaves, abounded everywhere, until anyone who mentioned it again was threatened with dire consequences. Epiphytes were rare - we saw only one unflowered *Earina mucronata.*



Corybas acuminatus drawn by Max Gibbs

After a picnic lunch, shaded from the blazing sun, the party bumped through the excellent scenery up the Karioi Station Road to the Rangataua swamp — yes another swamp. Some flowering *Corybas macranthus* at the road side

got scant attention before the dedicated band slogged off into the tea tree, sedges and mud looking for Bruce's *C.* "sphagnum", *C.* "rest area" and *C.* "Waiouru". John picked up *C.* "sphagnum" straight away with its pointed and spotted, tawny dorsal sepal, otherwise quite similar to *C.* "Waiouru". In Bruce's words, *C.* "sphagnum" is only a Clayton's name until he makes up his mind about its status. The 'photos show a transparent strip at the bottom of the labellum just the same as *C.* "Waiouru". The auricles are bell-mouthed as though to ease the passage of what minute pollinator? These *Corybas iridescens* relatives seem to vary in a blended continuum but with quite distinct limits. John also picked up twisted labellumed *Pterostylis montana* with its flattened lateral sepals scrolled into a full circle.

Whilst the column was laboriously photographing that, and/or *C.* "sphagnum" (without stretching full length in the mud), the rest picked up the distinctive *C.* "rest area" and guess who didn't find out until two weeks later?!

The group coped with the bog in their own particular ways, Anne Fraser plodded happily in bare feet, some were gum-boot equipped, Allan Ducker crashed through in drowned leather boots and others teetered from sedge head to sedge head trying not to crush the occasional *Pterostylis* aff. *montana*. The talking dwindled as the arduous progress took all of one's breath plodding back to the cars.

The undaunted had to excuse their bedraggled appearance at a necessary ice-cream stop at Ohakune before calling at Horopito, back in the drizzle on this wet west side of Ruapehu. A fine patch of *Pterostylis humilis* in flower displayed itself only a few paces from the *Spiranthes sinensis* seen last February. The short flower stems only just held the green heads above the three or more broad leaves with a bluish sheen. All the shutters started clicking except Allan's; he'd left all his batteries at home so his video couldn't go. Poor Allan we said. (One less in the 'photo queue though!) Down the road, scented *Corybas* "whiskers" showed up on a stream bank and *Caladenia lyallii* (with 6 rows of calli) bloomed under a tea tree. *Pterostylis* aff. *montana* was there and numerous *Thelymitra cyanea* in bud gave promise of a blue show in January.

The cold rain worsened and soon chased the party back to the Lodge and Geoff's welcome fire for dinner, for plotting Sunday's forays and to take in some of Allan's intriguing close-up videos from the far north field trip.

Foray one was for *Pterostylis* "Erua", a *P. graminea* look-alike whose grass-like, flowerless plants were soon tracked down at the western edge of the Erua swamp, amongst native shrubs. On the way down to it, through a recently cut-over Pinus block, the column's triumph at finding *Pterostylis humilis* leaves by a pine stump was squashed by Bruce who knew *Chiloglottis cornuta* when he saw it — even with three leaves, on occasions.

Stout fleshy leaves that John thought were *Thelymitra formosa* (later confirmed by Cathy Jones), sprouted out in numbers amongst the pine stumps. This should be a picture about New Year.

Off to Whakapapa for foray two. Not a scrap of fresh volcanic ash could be seen but Catherine Beard's pencil was red hot noting down the many alpine species. Bruce, it transpired, had been back previously to spy out the "*P. humilis*, a patch of another broad leaved *Pterostylis* (but smaller than *P. humilis*) ... and an unidentified round leaved *Corybas*" (see Journal 54) that Allan and the column had seen in February but Bruce had drawn a blank even with a beautifully(?) drawn map. Malcolm Campbell and the column found the *P. humilis* in leaf again up the water pipe steps but the "broad leaved *Pterostylis*" had transformed itself into a patch of healthy *Chiloglottis cornuta*! Not humilis but humiliating — again.

Two confused Corybas Crawlers crept away to seek a last chance to prop up their shaky reputations with the "unidentified round leaved *Corybas*". Bingo! John found some on the left bank of the Whakapapa Stream and Allan quickly found the others on the right bank in the February location. Humiliation turned to rueful triumph! It was in flower and what a flower: it had a labellum like *C. trilobus* except for an oblong notch at the bottom but a dorsal sepal more like *C. macranthus*. Two forms were apparent; one had a long maroon spotted, dorsal sepal, rounded at the tip and turned down at the edges but in the other form the dorsal sepal was pointed and fluted with a maroon striped keel, and it had very short lateral sepals. The latter was quite like the bug-eaten specimen found at Anne's place on 13 October except that this one had a round leaf (see Journal 58). There were no yahoos from Allan this time, just a sort of stunned murmur from the whole party. Bruce had seen it in the Rangataua swamp (see Journal 44, p 11) but he had opined it was a hybrid *C. trilobus-macranthus* because both occurred there. At the Whakapapa pipe line there was *C. trilobus*, but no *C. macranthus* to be seen. On the trip back to Pokaka, as the rain set in again, no one dared to mention it but this *Corybas* "trilobus round-leaf", as Bruce tagged it, occurred in two sizable colonies and hence could be one of the oft sought "new species to science".

After lunch at the Lodge, car boots were packed in the dry under a handy verandah at this most favourable if rambling establishment. It also has 50 bunks, hot showers, a much needed drying room, spacious lounge, and cooking facilities with crockery and cutlery to match. Heart-felt farewells were taken before the trips home in the pouring rain.

2. Thrills with the Thelymitra Thralls

The following weekend, 2 December; a complete change of scene; imagine yourself on the transformed Webb Creek track, from the Kaueranga Stream to the Pinnacles in the Coromandels. In 1989, one could have

been excused for taking crampons and a canoe to traverse it safely. DOC have out-done themselves in its reconstruction.

It is warm today and absolutely calm.

Caladenia "green column"

Caladenia "green column" abounds and it is great to see it stationary in the view-finder where it normally vibrates with the slightest puff. Its toothed mid-lobe is long and creamy; sometimes straight and sometimes curled right under the lip.

Ian and Kristy St George were visiting family in Thames and some of the Corybas Crawlers and friends took the opportunity to accompany them in a quick(?) trip to pick up *Pterostylis puberula* (was *P. nana*, see Journal 57) and *P. tasmanica* (was *P. barbata* [was *P.* plumosa] see Journal 51) which Catherine had reported from this area only a few days before.

In the lower reaches, previously identified *Corybas rivularis* and *C. oblongus* were seen in fruit. As altitude increased, as it is wont to do rather quickly on this track, *C. acuminatus* and round labellumed *C. oblongus* were in flower. (The Hunuas specimens generally have a vertically slotted opening to the labellum). *Thelymitra longifolia* and scented *T.* aff. *longifolia* were common and **open flat**. This was like a dream world which the infidel straggle of regular trampers didn't want to know about. A local population of *T.* aff. *longifolia,* displayed a large flower well below the rest of the raceme with pink sepals larger than the white petals giving the flower a triangular silhouette. Upper blooms were smaller and all white with like petals and sepals. A clump of little *Pterostylis puberula* was located by the top end of the Billy-Goat Track, all in fruit except for one mutated specimen which came in for undue photographic attention. Its basal whorl of "trowel shape leaves" and its hairy lower stem were quite distinctive. As so often happens, a main objective of the field-trip, *P. tasmanica*, could not be traced despite some thorough searching by seven pairs of eyes. Too late in the season no doubt but other goodies were in store.

Ian and Kristy took their departure leaving five to continue to the new and also transformed Pinnacles Hut. Hut? with 80 bunks, a cold shower and 8 gas burners in the kitchen. One party was on the spacious deck eating cheese and tomato slices on crackers with red wine to set it off. Allan and the column however were delayed, in sight of this edifice by a wonderland of blue and pink, spotted, striped and plain, *Thelymitra* just off the track in yet another boggy patch of tea tree. Two Corybas Crawlers immediately became Thelymitra Thralls. The plain blues were flawless *T. aemula. Thelymitra* with dark blue spots on the lateral petals came in pink and blue. Their columns had the distinctive "dark,

wart-like swellings" ascribed to *T. decora* by Noeleen Clements but the expected yellow horse-shoe top was variously split laterally or toothed, a little like *T.* aff. *ixioides* only different.

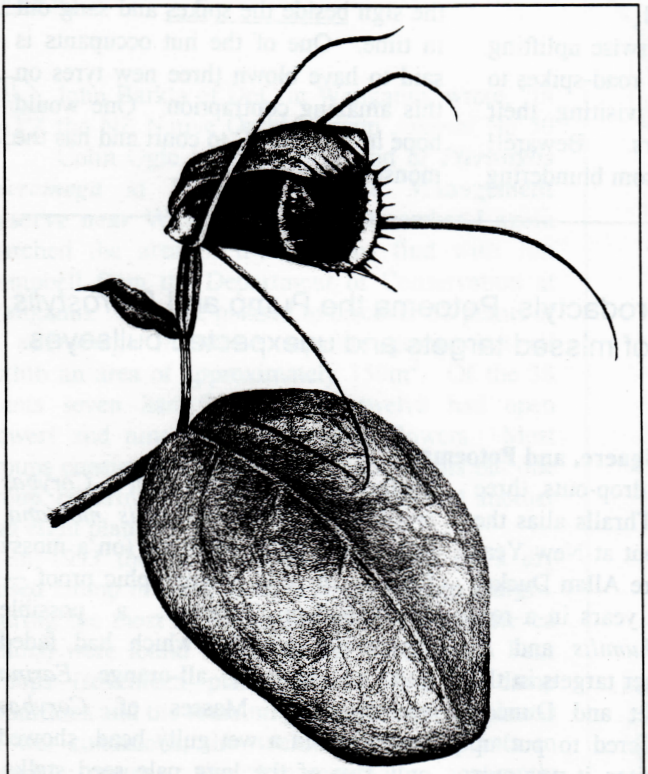
Who ever heard of a pink *T. decora* anyway? (Close examination of the pics, later confirmed that all were *T. decora*). None at this bog had spots on the dorsal sepal but a blue/lavendar one that did and which had a distinctive *T. decora* column plus some few spots on the labellum, was found later nearer the Pinnacles and duly recorded. Back to the hut bog, *T. pulchella* came in pink, blue and white, the latter seen on Sunday by Sue Bergerson and Graham Dickson but guess who missed it? Please note that Graham and Dave Scanlen have toured mountainous regions with the writer for decades but they tended to scoff at his habit of falling flat on the track, camera outstretched in obeisance to the deified orchids. It was the same on this trip but, did some cracks start to show in the armour? (or did they just appreciate the rests?) after the zealous few detected 25 species and colour forms, 19 of them in flower in two exquisite and action packed days. Incidentally, the notable absentees were *Corybas trilobus, Pterostylis brumalis, P. rubricaulis, P. graminea* and *Thelymitra pauciflora.*

After a much needed drink at the hut, ($6\frac{1}{2}$ hours after starting a $2\frac{1}{2}$ hours' tramp at T. Thrall speed), a sally was made up the Pinnacles Track where, out of the blue, Allan spotted a *Calochilus paludosus* with its carmine beard and its long wiggly labellum tip seeming to mock him from a metre off the track.

Calochilus paludosus

The dorsal sepal hooded over the column similar to *C. robertsonii* and *C. herbaceus* but, unlike these two, there were no dark "eyes" peering out. The shutters were soon clicking apace before dinner and a sound sleep on that silent, moonlit night.

The 5:10 am dawn chorus of bellbirds (*they* weren't there in 1989) was too late to wake another party who had risen at 4:55am and climbed the Pinnacles to watch the sunrise. The NZnoggers and the two orchid agnostics who weren't that far behind, gloried in the cathedral-like calm and at the sight of a blanket of mist smothering the Hauraki Plains at 9am. Well, they had orchids to ponder on the way up, didn't they? *Pterostylis banksii* still thrived on the tree root in a defile close to the summit, further blue and pink, striped and spotted, *Thelymitra* were fossicked out as the heat



Corybas oblongus in the Kaueranga Valley - drawn by Catherine Beard

intensified, in reedy, boggy patches below. The *Calochilus paludosus* now had its dorsal sepal flat back with an apparent buckle in it. Allan and your column thought that Dave had damaged it getting a better look so they didn't bother to re-photograph it — in its proper wide open position!

After noon, Allan and the column sought out the cool shade below the Dancing Camp Kauri Dam, and were soon rewarded with four unblemished *Corybas oblongus* in flower and in formation at eye level, on a huge, moss covered tree butt. Yours truly luckily got some shots in first because when Allan's 2kg rock used as a video steady against a sapling, slipped (of course), it flattened the four beauties and that was that.

The tramp-out with laden packs in that unseasonable heat wave was sweltering in sharp contrast to the previous weekend. Sue couldn't remember exactly where to find the white *Thelymitra pulchella* and it didn't seem to matter. Every streamlet was used to soak hats (sometimes plonked back on full), for cooling. One *Drymoanthus adversus* had a full raceme hanging underneath and was duly recorded on film. The only other one seen, had but two leaves, each only a centimetre long, on the same tree but despite its small size, it sported a spent bract of 7 or 8 flowers. Nearby were some *Bulbophyllum pygmaeum* which a 20x magnifier showed to be in prickly bud. A *Metrosideros albiflora* with a bridal train of flowers hanging over the track (how did they miss it on the way

up?) was a fitting host for *Dendrobium cunninghamii* only in bud.

A sour note in an otherwise uplifting expedition was the DOC road-spikes to deter people from not visiting their Kaue-ranga headquarters. Beware!! The column was saved from blundering through by Allan who happened to read the sign beside the spikes and sang out in time. One of the hut occupants is said to have blown three new tyres on this amazing contraption. One would hope he takes DOC to court and has the monstrosity removed.

The *Pterostylis* Pterodactyls, Potoema the Pump and *Pterostylis micromega:* a tale of missed targets and unexpected bullseyes.

by Eric Scanlen

1. Omoana, Egmont, Ngaere, and Potoema

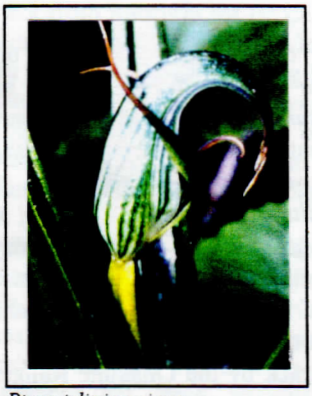
After calls from several drop-outs, three only of the *Thelymitra* Thralls alias the *Corybas* Crawlers, set out at New Year for North Egmont, where Allan Ducker had been too late three years in a row for fresh *Pterostylis humilis* and *P. venosa.* There were other targets in the offing and as Margaret and Duncan Menzies had kindly offered to put up (with) Allan and the writer, it was only proper to go with Margaret to Omoana on 30 December to see her *Thelymitra* "Awatere" — which had flowered early and finished! There were numerous seedlings around and some in a roadside slip got "salvaged". However, Bob Talbot's print showed a fine blue flower which Bruce Irwin theorises is a hybrid *T. hatchii / T. formosa.* No *T. formosa* has been spotted here but behind tea-tree barricades of Margaret's, some plants which had also finished flowering, had the characteristic column and yellow cilia of *T. hatchii.* A further rat around in the scrub turned up another seed head of *Corybas cryptanthus* also *Pterostylis montana, Microtis unifolia* epiphytic (on a mossy tree) — there is photographic proof — *Prasophyllum colensoi*, a possible *Pterostylis australis* which had faded and an unusual all-orange *Earina mucronata.* Masses of *Corybas iridescens* in a wet gully head, showed only two of the long pale seed stalks. The plant is a prolific flowerer but there were signs that something had eaten off the fruit. *Corybas cryptanthus* too had missing fruit from known sites and may have suffered the same fate or perhaps they were unpollinated?

Down near the old Omoana Post Office, *Corybas* seed heads were sought on *C. macranthus* (quite a few), *C. trilobus* (none), *C. orbiculatus* (none), *C. iridescens* (none), *C. oblongus* (few) and for *C. cheesemanii*, the sole specimen was located by its seed pod so who knows how many had been eaten off? A broken off *Microtis unifolia* had

a notable perfume similar to *Thelymitra* aff. *longifolia*, not from the flowers but from the sap.

Dinner was excellent but late that night due to the party's late return and a balky water pump.

New Year's Eve saw numerous *Pterostylis irsoniana* posing high on the North Egmont track. One clump, amidst crowds of robust *P. patens* seemed to mimic their neighbours with curled down, but not hooked, dorsal sepals.



Pterostylis irsoniana

Further up the ridge and extending to above the Razorback (about 4,500 feet altitude), were fairly plentiful *P. humilis*. Debate over various slight differences in their labella culminated in a "sure" *P. venosa* being prised open to reveal the typical globose stigma of *P. humilis*. A pact was made to come down a fortnight earlier next year to see the elusive *P. venosa* on the Veronica track. This track did however deliver crowds of *Chiloglottis cornuta*, several with the three leaves (usually two) which so thoroughly confuses unflowered plants with *P humilis*. Labellum calli were both brown and green.

The party's late return was greeted by that pump, still with a water logged cylinder despite having been draining all day. A couple of wet hours being polite to the wretched contraption in torch light saw it working again on emergency back-up and the famished party wolfing down a hard earned dinner, interspersed with a slide show of, you've guessed it, native orchids. Dinner was finished in time to see-in the New Year with a little style. Thank you Duncan and Margaret.

New Year's Day at the Ngaere swamp, after a wet Spring, found the trio waist high in — wait for it — grass (the "swamp" has been drained). There was no sign of the orange ciliaed *Thelymitra formosa* in the stick palisade erected over it last year and a diligent search for *Pterostylis micromega* along the drainage ditches was fruitless. The three were almost ready to accept some late flowering blue *Thelymitra pauciflora* as cold comfort when a flurry of excitement about a supposed *Microtis arenaria* got everyone smiling again. But the emerald green flowers — not yellow — gave cause for suspicions. A quick scout around turned up *M. parviflora* and some regular *M. unifolia* for comparitive videoing but they refused to cooperate until some vivid French brought them smartly into line. Sober examination of the column's photos gave it away as a tiresome *M. unifolia* despite the elongated callus in the

centre of the labellum. So? scratch the last sentence in Postscript 1, NOG Journal 58 p. 36. Why would anyone bother to examine tedious *Microtis* anyway?

At Potoema Swamp on East Egmont, our trio splashed in off the walkway (why does it always have to be a swamp?!) to photograph some nice *Thelymitra cyanea*. Margaret spotted some round leaved *Corybas* with withered-up flowers reminiscent of *C. rotundifolius* but of course it couldn't be that. Bruce Irwin by mail, says that he has seen *C. oblongus* "mud-lark" flowering in the Potoema. Here is another definite for old faithful "next year", but a month earlier.

2. National Park Wetland, *Pterostylis micromega, Prasophyllum* aff. *patens*

Anne Fraser happened to mention to the column that she and Ross Bishop were going to quarter the National Park wetland — swamp, in other words — looking in likely places for *Prasophyllum* aff. *patens*. The column of course just happened to mention it also to Allan and Bruce and before you could say *Baumea rubiginosa*, an expedition had been mounted. Helen and Ross Bishop put up Allan and the column at their exquisite garden home, Nga Korimako at Owhango; thank you very kindly. Anne and Bruce arrived on a wet Saturday morning, 3 February, and the quintet took a side trip to Horopito for a look at *Spiranthes sinensis* (in delightful pink flower with the buds at the top of the spikes still pure white awaiting opening before the colour suffuses), *Pterostylis humilis* (in fruit) and boring *Microtis oligantha* all in the same disused road area. Regrettably, the *Microtis* still did not get its portrait taken; it looks so much like a miserable *M. unifolia* but its long straight and unnotched labellum plus its jutting lateral sepals were definitely *M. oligantha* as was confirmed in a reference text that evening. "Next year!" Several truck loads of roadside debris had found their way into the midst of this phenomenon. Perhaps this location of rare and uncommon orchids should be notified to the District Council?

Further down the road, only one *Thelymitra cyanea* was open but *Genoplesium nudum* displayed several good plants in flower. *Spiranthes sinensis* were here too, as well as *Prasophyllum colensoi* with its nonresupinate (our word for the day) flowers well finished. This reserve near the end of Middle Road has 13 orchid species, at the last count.

At the track by the Ohakune Rangers HQ, numerous *Corybas cryptanthus* scapes (elongated seed stalks) with their nodding ovoid fruit, were surveyed in by Bruce for future examination of the flowers under the beech litter. As the co-discoverer of the species (with Owen Gibson), he doubtlessly has that right. What a slippery slope of orchid addiction that find set him on and what a benefit it has been to his fellows.

Up the Blyth track on Ruapehu, in the worsening weather, plentiful *Caladenia* "green column" were in flower and *Thelymitra* "Whakapapa" would have been if the sun had been out.

Coaxed open specimens displayed only vestigial column spurs, sometimes represented by only 3 or 4 minute pink calli. Allan's promised *Acianthus viridis* had all finished flowering and precious few seed heads were there as evidence but little round leaves with a slightly serrated margin abounded. Several clumps of round leaved *Corybas* were spotted (some were unspotted?) and their locations were duly noted (*C. trilobus* "round-leaf"?) giving promise for — that's right — next year. The lee of the hay barn was a dry haven for a drink and a snack but it was a long trip back from Raurimu for Bruce to retrieve some one's coat and glasses left hanging on the door. Long suffering Helen held dinner until 8 pm but it was excellent even so and the convivial orchid chat went on for some time later as Zimbabwe trounced NZ in the one dayer at Napier.

Sunday saw a better day and a morning hike through Ross's Ohinetonga Scenic Reserve on the eastern side of Owhango. The kahikateas and rimus were huge and splendid but Ross' parasitic *Thismia rodwayi* had finished flowering and orchids were sparse in this tawa forest. Seven only tried and true species were noted including a tawny *Orthoceras novae-zeelandiae* and others on the open river bank.

After a fine luncheon put on by a still smiling Helen, the quintet sang a chorus of woes about the string of hippo-potamus wallows that served them and the Electricity Corp. as access to the mile long swamp near National Park. As true-blue *Pterostylis* Pterodactyls, they thought of floating "two feet above the fragile wetland" as Bruce had suggested but Allan, true to his name, was the first to do the other thing; up to his short shorts in brown muck and blue air. Nobody laughed much. *Thelymitra cyanea* was common but all long finished. Why was one still flowering in a soggy paddock at Horopito? Two tall *Prasophyllum colensoi* were in fruit too and raised some false hopes because they were inhabiting the stream-bed rushes *Baumea rubiginosa, Lepido-sperma australe* and *Empodisma minus*, (whew) so prominent at the Pureora Forest site of *Prasophyllum* aff. *patens*. (Thanks to Anne and Ross for the names).

Anne struck the first bullseye with an open *Pterostylis*. Bruce arrived apace in a shower of swampy spray and identified what none of the others had seen in the flesh, *P. micromega* (was *P. furcata*) in a firm bit of swamp by a stream junction. Four other plants were in fruit as the cameras started rolling. The pale green labellum jutted well out of a handsome galea with large "windows" at the rear. A rosette of short undulate leaves and similar but longer bracts up the peduncle were quite distinctive and a sight for the wearying bog sloggers. Some big words in there, eh? See NOG Journal 57.

The column, not to be out-done, sploshed on ahead when the others were on the verge of returning and spotted a miniscule *P.* aff. *patens* growing uncharacteristically in still water with only a few stunted rushes. The others were drawn as if by a magnet and soon found another 20 or so specimens, more than half way to the western head of the swamp. Some could smell the strong perfume but the column's and Ross' more selective olfactory organs could

only detect swamp; more's the pity. The plants were generally only half the height of the celebrated specimens at Pureora Forest but they carried good heads of the unmistakable, non-resupinate (Journal 57), maroon and white flowers.

Pterostylis micromega

Prasophyllum aff. *patens*

Anything after those finds was bound to be an anticlimax but some stout *Thelymitra* with all leaf-green fruit (unlike the local *T. cyanea* which had purplish and green striped fruit), were espied on the southern edge of the wetland. Bruce suggested they were *T. cyanea* even so, but these are due for "next year" treatment — along with all the missed targets and other intriguing prospects.

Notes

John Barkla of DoC in Wanganui, wrote, "In the NZ Native Orchid Group *Journal* No 50 Colin Ogle reported on a find of ***Pterostylis micromega*** **at Ihupuku Wildlife Management Reserve near Waverley.** On 18 December I again searched the area of the previous find with Jim Campbell from the Department of Conservation at Wanganui. We were pleased to discover 38 plants of *P. micromega* in twelve separate groups but all within an area of approximately 150m^2. Of the 38 plants seven had flower buds, twelve had open flowers and nineteen had withered flowers. Most groups consisted of two or three individuals but one group, covering 1m^2, had eleven plants, and another had eight plants.

"In 1993 the orchids found had been on a dry raised clump of earth along a boggy swamp margin. During the most recent survey three groups (eleven plants) were found in similar dry conditions. Four groups (seventeen plants) were found in damp conditions and the remaining five groups (ten plants) in wet conditions; this included several plants in standing water. "Further survey in apparently similar habitat adjoining the known area of orchids failed to find further plants.

"Acknowledgements: Thanks to Jim Campbell from the Wanganui Field Centre of the Department of Conservation for his help in the survey and Colin Ogle who prompted this follow-up note."

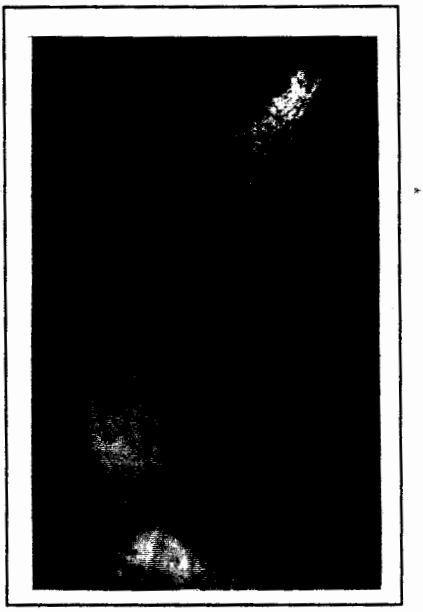
Pterostylis micromega drawn by Bruce Irwin

Doreen Abraham listed the **orchids alongside the Kawakawa track,** Taupo; if anyone wants a guide, she is always looking for company and an excuse.... *Pterostylis trullifolia, P. alobula, P. banksii, P. foliata, Dendrobium cunninghamii, Earina autumnalis, E. mucronata, Chiloglottis cornuta, Caladenia* (pink, white and green), *Gastrodia cunninghamii, Microtis unifolia, Orthoceras novae-zeelandiae, Acianthus sinclairii, Cyrtostylis reniformis, Thelymitra decora, T. longifolia.*

The **Gentle Annie** is the first part of the track, starting near Masterton, up Mount Holdsworth in the eastern Tararuas. On 27 December we found *Adenochilus gracilis*, *Aporostylis bifolia*, *Caladenia lyallii*, *C.* "green column", *C.* "white form", *Chiloglottis cornuta*, *Corybas oblongus*, *C. trilobus* (big leaf, short stem, large fruit), *Dendrobium cunninghamii*, *Earina autumnalis*, *E. mucronata*, *Gastrodia cunninghamii*, *G. minor*, *Pterostylis cardiostigma*, *P. banksii* (?), *P. venosa*, *Thelymitra cyanea* (typical blue form, plus white form with with blue striped petals and column, petals and sepals similar), *T. formosa*, *T. hatchii* (with white or yellow cilia - and a similar, upright, but smaller plant with mauve cilia, and no yellow on the margins of the cleft in the post-anther lobe of the column), *T. longifolia* and *T. intermedia*.

A few days later, and a few miles north, the orchids were disappointing at **Kiriwhakapapa**: *Adenochilus gracilis*, *Caladenia* sp. fruiting, *Chiloglottis cornuta*, *Corybas oblongus*, *Dendrobium cunninghamii*, *Earina autumnalis*, *E. mucronata*, *Gastrodia cunninghamii* and a *Pterostylis* sp.

On 5 January ***Thelymitra* Whakapapa** was only in early bud at the Chateau Tongariro, but at this altitude *Pterostylis patens*, *T. hatchii*, *T. longifolia* were still in flower, as well as a *Pterostylis* similar to *P. graminea*. There are a number of forms of *P. graminea*, flowering at different times, and of slightly different shapes: they would reward further study.



T. hatchii with pink whiskers, Tararua SFP ↑

The same day we revisited **Iwitahi** to find *T. decora*, *T. longifolia*, *Gastrodia cunninghamii*, *G. minor*, and *Caladenia* "green column" still flowering; *Gastrodia* aff. *sesamoides* was alas still in bud.

Later in January we searched for **summer swamp orchids** (*Aporostylis bifolia*, *Prasophyllum "aff. patens"*, *Pterostylis micromega* and *Thelymitra cyanea*) near Waikaremoana (Waipai Swamp and Lake Ruapani) but found only *A. bifolia* and *T. cyanea* - both flowering. Drooping into the water along the banks of Lake Waikareiti (you can hire a rowing boat) were picturesque masses of flowering *Dendrobium cunninghamii*.

We returned to the Central Volcanic Plateau on 27 January: *Gastrodia* aff.

sesamoides was in full flower at Iwitahi, *Thelymitra* "Whakapapa" in full flower at Whakapapa (what a little pink beauty it is), and ***Prasophyllum* aff. *patens*** at its site nearby.

Lois Dougherty of Wellington described her hybrid *Sarcomoanthus* Little Sparkle (*Sarcochilus falcatus* x *Drymoanthus adversus*),

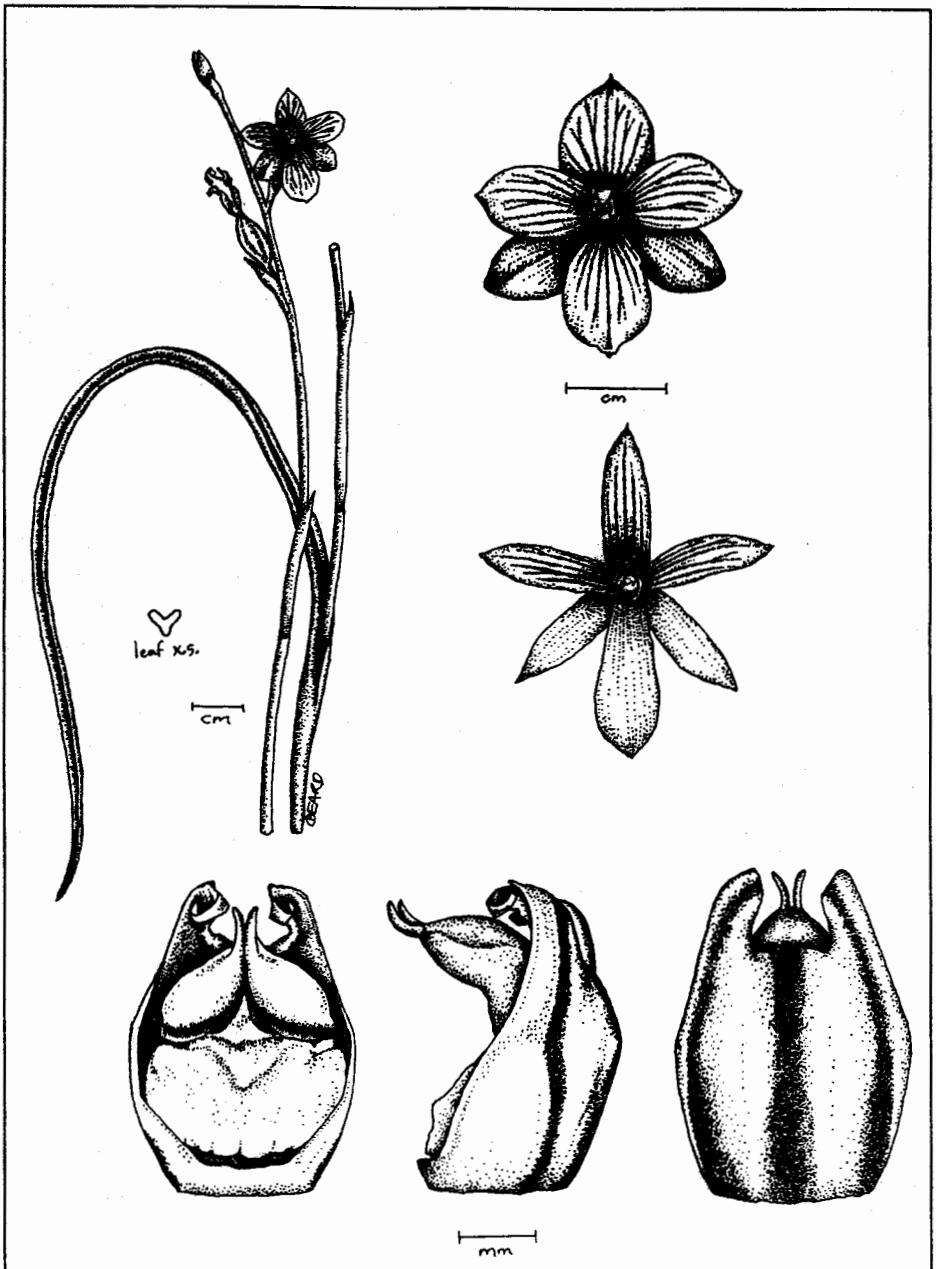
Sarcomoanthus Little Sparkle

"This plant is equidistant in size between the parents and is typically epiphytic. The flowers are about four times the size of *Drymoanthus* and much more open while following the *Drymoanthus* shape. The segments are pale green with a pink overlay and darker pink spotting. The lip is pouched, white with magenta spotting internally. The inflorescence has a freckled pendant stem with four to six blooms. The flowers are waxy and crystalline, and measure 10mm overall with petals and sepals 5.7 x 1.9cm."

Lois has started to take the cross another step - she has put pollen to several different *Sarcochilus* - some with dark colour, some with good shape. She tried taking it back to *Drymoanthus adversus* but *Drymoanthus* "don't like holding pods".

She has also got pollen set using *Drymoanthus flavus*. In her own words, "Very interesting".

Catherine Beard wrote, "Recently, while botanising in an area near Erua I had the opportunity to look closely at a large population of *Thelymitra cyanea* in and around a small wetland. It was a fine afternoon and the hundreds of orchids were quite a spectacle. The plants appeared to fall into two distinct groups: the first included flowers ranging from asoft pink through to a pale lavender, with an occasional blue. Tepals of this form were narrow, and the flower was striped only in its upper half - the three lower tepals were plain. The second group included blue flowers, occasionally tending to pink. Tepals of this form were wider, in some cases almost twice the width of the first group, and the flower appeared to be striped all over. Close investigation revealed little further difference between the two forms - there seemed to be equal numbers of each with open flowers, and those in seed were impossible to tell apart. Have others noted these different flower forms in this species?



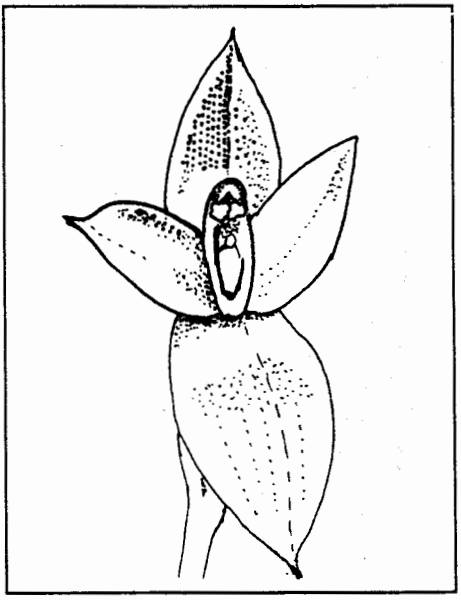
Two forms of *Thelymitra cyanea* - drawn by Catherine Beard

Gael Donaghy wrote, "I have really enjoyed my move to Takaka, and with fresh fields have found lots more orchids. I was particularly pleased to find a tree on a ridge between the Aorere and Westhave Inlet with both *Bulbophyllum pygmaeum* and *B. tuberculatum* (although the pseudobulbs were very green and shiny, not dull as in the photograph in the Johns and Molloy book)."

A couple of readers noted a *NZ Herald* account of *Spiranthes novae-zealandiae* found at Paraparaumu, and wondered why some call it that, and others call it *Spiranthes sinensis*. It's a long story - Brian Molloy traversed the various names for our *Spiranthes* in J21 (March 1987), and enthusiasts can find the full account there. Briefly, in 1807 Persoon described *Neottia sinensis;* in 1810 Robert Brown described the Australian plant as *Neottia australis;* in 1818 Richard erected the genus *Spiranthes.* In 1843 John Lindley transferred the Australian plant to *Spiranthes australis.* In 1853 JD Hooker described the New Zealand plant as *Spiranthes novae-zealandiae,* in 1860 the Tasmanian plant as *Spiranthes australis,* and in 1864 reduced the NZ plant to synonymy with the Tasmanian. Various botanists have used variations on these names since, and the most recent has been *Spiranthes sinensis* subspecies *australis;* that is the name Cooper (1981), and Johns and Molloy (1983) used. NZNOGJ also retains the name *Spiranthes sinensis* for NZ plants.

How do you spell Zealand? The spelling of zea-, zee- or ze- in plant names depends on the original. Solander called his 1769 work *Florae Novae Zelandiae.* In their 1832 book *Essai d'une Flore de la Nouvelle-Zélande* the Frenchmen called the NZ *Orthoceras "Diuris novae-zeelandiae"* so that specific name was transferred (by the rules of taxonomy) when Brian Molloy and others confirmed that it was really not *O. strictum. Spiranthes novae-zealandiae* was similarly named when (in 1853 - see above) spelling was not uniform even in English.

A freak *Thelymitra* aff. *longifolia* at Kaitoke in January showed a normal dorsal sepal and lateral petals, but the other three tepals were fused into a single large labellum-like structure. ↓

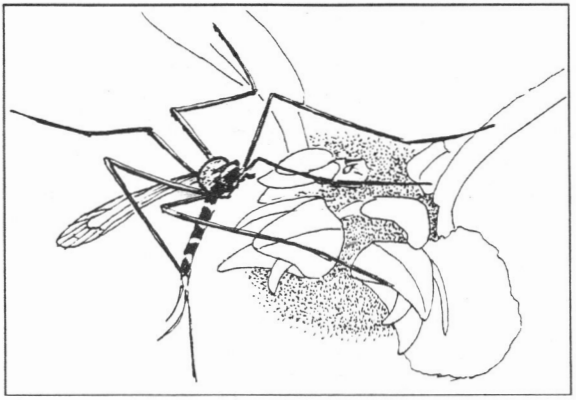


How's your nose? Which NZ orchids have perfume?

Perhaps the subtleties of scent in a wine are purely subjective (the "hint of gooseberries on the nose" of a Marlborough Sauvignon Blanc may be easily discernable to some, but to many it just smells pleasant). The presence (or absence) of scent in an orchid flower might be easier to discern. Can we assess it? I believe we can, and perhaps respectably if we obey some rules:

1. Do not participate in this survey if you already know you have a hopeless sense of smell.
2. Do try to smell every orchid flower you see from now on: do this by picking one or more flowers and placing them in a glass or aluminium (NOT plastic) container, warming them in your pocket for ten minutes, then sniffing. (Don't pick the rarities for this purpose).
3. Record on the sheet provided with this issue the presence of scent and how strong it is (score 0 to 5, where 0 = no scent, 1 = just discernable, 3 = moderate, 5 = overpowering), and its nature (e.g. cinnamon, jasmine, lemon, soap, violets, etc).
4. Discard the flowers, leave the container to air (i.e. remove all trace of the previous scent), and
5. Try another species.
6. Repeat 1 to 5 above.

Bruce Irwin sent a slide he had taken some years ago of a crane-fly on *Bulbophyllum tuberculatum* near Taneatua. Could it be a pollinator? ⬇ ⬇ ⬇



The *NZ Journal of Botany* (1996; 34: 1-10) carries a paper by Brian Molloy & Bruce Irwin formally naming *Corybas* "A" as *C. iridescens,* and *Corybas* "Mount Messenger" as *C. papa.* This is collaboration at its best, between the careful attention to taxonomic detail of the professional botanist and the careful field observation of the talented nonprofessional. Of the "Seven forms of *Corybas rivularis*" that Bruce Irwin pointed out in 1993 (*J47,* pp7-9), four are now formally recognised as distinct species - these two plus *Corybas orbiculatus*, and the species tagged *C.* "Kerikeri", which, as Molloy and Irwin point out, can now confidently be called the true *Corybas rivularis.* That leaves three to be named.

Bob Goodger sent two slides showing insects on flowers. He wrote, "These... are the only ones I seem to have taken - I went through all my slides. The hoverfly on *Microtis unifolia* was taken in the middle of a paddock. There were a number of flies visiting the numerous *Microtis*. The insect on *Thelymitra aemula* was the only one seen and seems to be a possible pollinator." The insect is identified by Dr Jo Berry of Landcare Research in Mt Albert as "a gasteruptiid. These wasps are parasitoids of solitary bees. There is only one genus known from NZ, namely *Pseudofoenus* sp. The photo is of a male". Dr Berry was unable to identify the insect on the *Microtis*.

Gasteruptiid wasp, *Pseudofoenus* sp., on *Thelymitra aemula* - photo by Bob Goodger

Insect on *Microtis unifolia* - photo by Bob Goodger

M. Philips writes (NOSSA *Journal* 1996; 20 [3]: 27-8) that *Pterostylis* species "have flowers which are actually miniature greenhouses. The translucent, enclosed flowers allow the sunlight through: they heat up and store the warmth to entice insects.... *Thelymitra* work their control differently.... the cupshaped flower with its convex petals reflects and concentrates the sun's rays in the centre of the flower. This warmth is an added attraction to the bees which pollinate the sun orchids.

Nina's news

– extracts from Ninatorchinfo, Trevor Nicholls' email information bulletin on orchids around Taupo (available by emailing nicholls@reap.org.nz)

Gastrodia* aff. *sesamoides

You may have seen that magnificent grouping of *G.* aff. *sesamoides* at the Iwitahi weekend on the forest road edge. In an area 2 x 3ft were 38 flowerheads. They grew to a maximun of 30 inches. Some of the flowers had small pear shaped black beetles in them; one stalk had them in every flower. There was no sign of pollen attached to them, and they were not sheltering from the rain so maybe they were visiting for nectar.

Later that day we went out to Dawn and Doug Mitchell's at Palmer Mill Rd. They had a spectacular display of flowers in a patch half the size of the above but with 53 flowerheads. It was out of what I assumed to be the dirt of the bagged rhodo that had recently come from Cross Hills. Good in theory until we looked around the nearby area where there were more healthy plants.

Bill and I returned to the Iwitahi clump. We found that the flowers were finished or the stalks had been broken off. Something had been burrowing in and eating some of the tubers - we have had at least four instances of this this year. It is definitely not pig or piglets. There is very little disturbance and in one instance "whatever" had to get through a fence of pegs. It may be birds but there is no evidence of pecking. We wonder whether it could be rats? Plants have been in flower since early December.

I showed the *Gastrodia* tuber to Max. He thought that rats were the likely culprits.

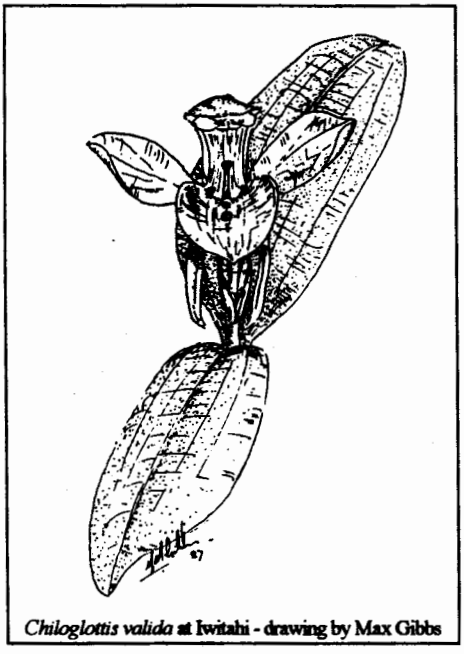
Chris Ecroyd: "I suspect possums are eating the tubers - I have seen some eaten here at FRI. We even have *Gastrodia* in the local PaknSavE carpark garden and I suggest that it is spread in bark chips from trees grown in Kaingaroa."

Chiloglottis valida

Last year at this time we watched a very fat seed capsule form on a plant from the original transplant into the reserve. It grew about three inches above the cage and then something removed it. When I mentioned it at the Iwitahi weekend Ian said that maybe it was one of the ones he had pollinated. The week following the camp Jean Jenks, Doreen Abraham, Ken Scott and I did a sex dance around one of the boxes. We used the car keys to pollinate the 23 flowers. Then we pinched a nearby box and put it on top to give us the extra height to stop the whatever from eating the capsules. The pollen did not come away in balls, but was very tacky and we found we had to smear it on. On 3 February there were ten seedheads.

On 16 February Bill and I went with the first gang from the Periodic Detention Centre for this year. They spent the morning bagging up *nigra* seedlings and in the afternoon they worked in the reserve clearing

unwanted growth. We checked up on the box of Chiloglottis valida that we had fertilised. The seed capsules were all open and dessicated. They had some seed in them when we tapped them.



Chiloglottis valida at Iwitahi - drawing by Max Gibbs

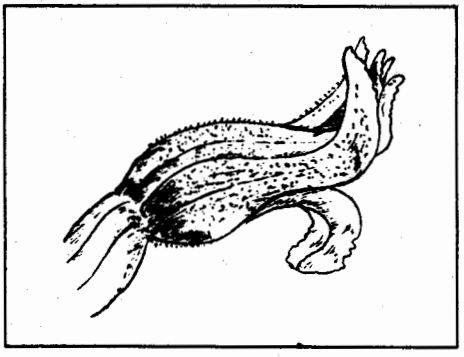
Thelymitra cyanea

Three years ago a colony of *Spiranthes sinensis* at Horopito was in full flower in a waterlogged area. We saw them again last year in early February. Also present were a number of spent flowers/seed capsules of *Thelymitra cyanea*. This year's visit (12 January) was to to coincide with their flowering.

Not being able to find any *Spiranthes* except except for one very embryonic bud was a disappointment. Soon, though, all feelings of disappointment evaporated. In front us was a most spectacular bunch of flowers. This soon evaporated into insignificance as we discovered more and more exciting finds. Each of us was sure that we had something better and more exciting than the others. After counting orchids with Chris at Iwitahi we decided to be more 'scientific'. We started to count the plants in an area 2 x 3 metres and found before we were half way we had reached a hundred. We looked up and then looked at each other and realised that we were literally surrounded by thousands of plants. We then began to notice other details. There was quite a wide colour range. These went from a soft pink through mauve to a cerulean blue. We have a photograph to prove it. The "true" pinks tended to have less and smaller flowers and possibly smaller plants. The bluer they were the bigger the flowers and more vigorous the plants. All the plants that were flowering were in a boggy area. There were others around that were on dry ground. These had completely finished flowering and had set seed. I presumed that these ones had been in wet ground and that the water table had dropped with the onset of the finer weather and that this had brought them into flowering earlier.

Are they wind pollinated? The nearby road is unsealed and I accused it of providing the dust on the lower petals. On further investigation I felt quite sure that this was not the case but that it was specks of pollen. This shows up quite clearly on the photographs.

Close relations: orchids like ours



Three *Spiranthes* species from Britain - clockwise from top left: *S. aestivalis, S. romanzoffiana, S. autumnalis;* wood engravings by Walter Hood Fitch from *Illustrations of the British Flora.* Reeve, London, 1897, p240 (inset: *Spiranthes romanzoffiana,* line drawing from Davies P&J, Huxley A. *Wild orchids of Britain and Europe.* Chatto & Windus, London, 1983)

Historical reprints

An insect pollinator for *Corybas oblongus* in 1918?

from *NZ Journal of Science and Technology*, 1918; 1: 4.

A New Fungus-gnat which fertilizes *Corysanthes oblonga* Hook.

By David Miller, Weraroa.

This species of fungus-gnat (fam. Mycetophylidae) was captured after considerable trouble by Mr. G. M. Thomson, F.L.S., while on a visit to Dawson Falls at Mount Egmont during December, 1916. Two females were sent to me, one of which was found in the flower of *Corysanthes oblonga* Hook., and still had the dorsum of the thorax covered with the pollen of this orchid. I have taken the liberty of naming this species after the collector.

Exechia thomsoni. × 5.

Exechia thomsoni n. sp.

♀. Head fuscous, the antennae and mouth-parts tawny; dorsum of thorax fuscous without markings, the pleurae fuscous posterior to the wing articulation but tawny anteriorly. Legs tawny, but the tarsi and apices of the femora fuscous; fore protarsus 1·23 the length of the tibia. Wings dusky hyaline, the auxiliary vein short and evanescent at apex. Abdomen narrowed at base, the 2nd segment longer than the others; segments 1 and 2 dark tawny, the remainder fuscous, each segment with a darker band across the posterior margin.

Length, 3·5 mm.

In the diagram the position of the posterior tibia and tarsus is reversed.

The Type of *Exechia thomsoni* has been lost, but of interest is the report of a fungus gnat, a group known to pollinate other *Corybas* species, visiting the predominantly self-pollinating *Corybas oblongus*, and emerging with its "thorax covered with the pollen of this orchid".

Observations of pollen vectors on a putative hybrid swarm of *Microtis* R.Br. By R. Bates. Reprinted from *The Orchadian* 1981; 7: 14. ➡➡

OBSERVATION OF POLLEN VECTORS ON A PUTATIVE HYBRID SWARM OF *MICROTIS R Br*

by R. Bates

Abstract: Observation of insects transferring pollinia in what appeared to be a hybrid swarm of *MICROTIS* was carried out near Mylor, South Australia in November and December 1980.

Observation took place in an area of some 2 hectares of disturbed bush alongside the Leslie Creek, which is twenty kilometres south-east of Adelaide. The area had been razed by wildfire during the disastrous "Ash Wednesday" bushfire in February, 1980. The location had been part of a market garden during the 'Depression' years.

Microtis parviflora R.Br. of the form var. *densiflora sensu Rogers non Bentham* was common on grassy flats along the creek. In the tea-tree (*Leptospermum pubescens*) thicket *Microtis rara* R. Br. grew and in dry rocky terrain 100 metres above the creek *Microtis unifolia* (Forst. F.) Reichb. was widespread. In the gully between them were great numbers of apparent intermediate forms between these three species. All degrees of intermediacy were noted, there being a gradual merging of each species into the others when all forms were collected and compared.

Some 10% of plants in flower harboured small spiders of various species, which fed on the numerous flies, beetles and gnats which visited the flowers. Only two species of insect were seen to collect pollinia. These were both hymenoptera; tiny black male wasps of the family Ichneumonidae and orange Brachonidae, both males and females. Both insect species were 4-5 mm in length.

These wasps were numerous in the study area and on hot afternoons could be observed on some 20% of flower spikes at any one time. In November, when the flowers were freshly opened, up to 50% of both wasp species could be observed carrying pollinia. The wasps visited all three species of *Microtis* and the putative hybrids, but did show some preference for *M. rara* and the intermediate forms which emitted a slight sweet fragrance similar to that of *Boronia megastigma*.

The insects were observed to alight on various parts of the flower spike and move on to the vertically placed labellum of a nearby flower with their heads uppermost. Despite the apparent absence of nectar the wasps moved upward until they were positioned in the groove between the prominent darker green basal calli of the labellum. In this position the head of the insect is in contact with the viscid disk of the pollinia. The slightest touch of this disk serves to bring away one or both pairs of these pollinia. The pollinia are loosely enclosed by a hooded anther. They are in two pairs each comprising a larger outer sheet and smaller inner one. They are reniform in shape and are united to a short caudicle which ends in the viscid disk (Nicholls plate 98 fig. G 1969).

When the insect withdraws, the pollinia attached to its head fall slightly under their own weight or by rotation of the caudicle so that they are in a position in front of the insect's head to contact the stigma of the next flower visited.

Only part of the pollinia comes off on to the stigma of each flower so that there is always a section left to adhere to the stigma of flowers subsequently visited. The wasps continued to collect as many as five sets of pollinia, although they could as times be observed endeavouring to scrape the pollinia off.

Of the flower spikes examined, usually all but the top few flowers had had part of their pollinia removed. Some plants carried in excess of sixty individual flowers.

Microtis flowers also possess a back-up system for achieving fertilization. They possess a degree of autogamy or self-pollination.

Thompson (1878) describes how the pollen grains if not removed "emit a great mass of tubes which penetrate the upper margins ofthe stigma".

This autogamy ensures that all flowers set seed and examination of thousands of plants of most *Microtis* species show that this is the case.

The author collected voucher specimens of all *Microtis* species in the study area as well as the putative hybrids and these are lodged at the State Herbarium, Adelaide. The pollen vectors were identified by Eric Matthews of the Adelaide Museum and are lodged with the flowers on which they were collected in the Herbarium's 'wet collection'. Slides of the insects on the flowers are in the author's collection, together with notes on observation of a spider (*Diaea* sp.) catching and devouring a specimen of *Brachonidae*, bearing pollinia.

SUMMARY: The dual system of pollination in *Microtis* can be seen to be very effective. There is little doubt that cross pollination between different species does occur and this explains why it is so difficult to identify *Microtis* plants in many areas as one species or another. It would appear that wasps are the most effective pollinators of *Microtis* in the *M. unifolia, parviflora, rara* complex.

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38 Portmarnock St.,
Fairview Park, S.A. 5126

1 July, 1981

Orchid photographer

Val Smith

Val Smith won the NZNOG Photographic Competition a few years ago.

She was brought up on her parents' dairy farm at Tikorangi, and had her secondary education at Waitara and New Plymouth. She taught and judged Highland and National dancing until marriage, family and sheep farming became the focus of her life. She now works as Principal's Secretary at Okato College.

A trip to China in 1973 whetted her interest in photography, and left her with her present single lens reflex equipment. She has photographed a wide range of subjects, and has processed in colour and black & white.

She has given slide shows and talks and has had some success in competitions and exhibitions. Among a wealth of other preoccupations has emerged her interest in native orchids.

She joined the New Plymouth Tramping Club in 1974, and that gave

Pterostylis patens, photographed by Val Smith

her access to the many places in National Parks and Reserves which have supplied her photographic subjects since. She has edited the Club's newsletter since 1976.

Val Smith has a love and concern for the environment, is active in the Forest and Bird Protection Society, and through her appointment as Egmont National Park Honorary Ranger 1979-89 felt she could contribute in some small way to its appreciation and protection. She contributes in a large way with her beautifully crafted and mounted colour prints of native orchids – usually on show at the Iwitahi weekends.

Australian notes

Virus in Australian natives

Helen Richards reported (edited from the Australasian Native Orchid Society Victoria Group Inc August 95)

"Virus in my *Diuris*! It was a shock - 40 plus species, and 100 pots - 90% of my *Diuris* affected, including very rare and endangered species. How could that possibly happen to plants that are carefully tended? The answer is through ignorance! So I am bringing you up to date with what I have learned in the last six weeks.

"I have never found *Diuris* the easiest plants to grow, although they are not in the difficult class like *Caladenia* or *rufa* Group *Pterostylis*. In recent years some *Diuris* have grown very well, then gone backwards. Why, I asked. I have been troubled with leaf tip die back and brown markings on the leaves in particular, so have varied the mix, removed affected leaf tips immediately to stop the spread of fungal infection, but to no avail. I had plants tested late in the season two years ago and the results showed that they were infected with just about every fungus under the sun. This year I thought I would get in early and have plants tested as soon as the symptoms appeared. I gave a pot to Tony Slater to have checked at the Plant Research Institute at Knoxfield about six weeks ago and was stunned when he came back to me with the diagnosis of virus which may be Cymbidium Mosaic Virus! Those 'brown markings' on the leaves were actually necrotic, i.e. dead patches. I also had *Diuris* with yellowing through the leaves which I had put down to nutrient dificiencies... was that virus too? The subsequent answer to that was also "yes"! .... (Don Gowanlock) said that virus was spread by sucking insects (e.g. aphids) and could also be spread by handling the leaves of infected plants then handling the leaves of non-infected plants.

"There was the answer to how 90% of my plants had become infected. Aphids are always a problem on my *Diuris* in spring and I frequently run my fingers up the leaves to remove them, then do the same with other leaves. So between

the aphids and myself, we had done a thorough job.

"It is so important to be able to identify plants with virus and remove them, because the virus will remain there and will spread as has been shown well and truly in my case with drastic results. Check your plants thoroughly and isolate any suspect plants."

***Orthoceras novae-zeelandiae* in Australia?**

Garry Guide wrote [NOSSA *Journal* 1996; 20 (1): 5], "According to Jones and Clements, there are actually two species of *Orthoceras,* namely *O. strictum* from Australia with its pointed labellum, and *O. novae-zeelandiae* from New Zealand with its rounded labellum. Recently rounded-labellum plants have been found in Australia (mostly in swamps)! I believe that plants that grew in the Mount Compass swamps until about 1980 had these rounded labellum tips...."

Prasophyllum odoratum

Mr Guide went on, "The seed pods of *Prasophyllum odoratum* elicited some interested discussion. The capsules had opened in two eye-like holes on the very top of each capsule. We decided that this was so that seed would only be released on windy days. When the capsules were shaken the seed came out these small holes. On calm days no seed would come out. This is a good method to ensure wide dispersal of the species (indeed, *P. odoratum* is one of the most widespread orchids in Australia and in different forms even extends to New Zealand."

Gastrodia sesamoides

Sandy and Mark Philips *(loc. cit.)* wrote of a summer visit to the Otways, "One of the commonest orchids was *Gastrodia sesamoides* which we found in rainforest, in pine plantations and in woodland. On the drive to Cape Otway lighthouse they grow on the roadside in heavy forest. Nearer the sea in stringybark woodland in light sandy soil we found a second *Gastrodia, G. procera.* This species had many more flowers, in a straight not a curved spike, the flowers were more orange, warty and lacked the perfume of *Gastrodia sesamoides.*"

Prasophyllum australe

The Philipses went on, "*Prasophyllum australe* grew in heathy swamps and reached 80cm high... they were beautifully perfumed."

Cyrtostylis cf. Acianthus

Bob Bates wrote *(loc. cit.)*, "A 1995 article by Paul Kores looked in detail at the morphology of the genera. Paul's conclusion that *Cyrtostylis* and *Acianthus* are one single genus is unlikely to change the belief in Australia and New Zealand that there are wto, especially since he reached the conclusion that *C. robusta* and *C. reniformis* are just one species! Any NOSSA member who has studied these two in the field will know this is not so! It is just another case of lumpers *versus* splitters, or of herbarium botanists *versus* field botanists. I'm afraid that I'm on the side of the field botanist!"

Third Australasian Native Orchid Conference and Show Flinders University, Adelaide, 26 to 29 September 1996

It is now only a few months until the **Third Australasian Native Orchid Conference and Show** will be held in Adelaide. The Native Orchid Society of South Australia (NOSSA), host of the third Conference on behalf of the twenty five Native Orchid Societies that constitute the Australasian Native Orchid Society (ANOS), has been working hard towards ensuring that the Third Australasian Native Orchid Conference and Show, will be long remembered as one of the most impressive and most significant Orchid Meetings ever staged in Australia. The twenty-five Australian and New Zealand groups will together bring to Adelaide what is expected to be the largest and the most innovative and spectacular display of Australasian native epiphyte and terrestrial orchids and their hybrids ever assembled, with all areas of the Australasian region represented. Field trips will allow Conference delegates to see a large variety of South Australia's terrestrial orchids in their natural settings. Speakers of the highest calibre will deliver up-to-date papers on an exciting range of topics, over a full two day period. The Australasian Native Orchid Conference and Show is offered only every third year and should not be missed! It will e a long time before the Conference and Show will again be in Adelaide. NOSSA looks forward to providing a warm and genuine South Australian welcome to delegates from around the world. The Who's Who of Australasian Native Orchid Experts and Enthusiasts will all be attending the Conference.

As we have indicated before, it is not **NOSSA's** Conference and Show; as a member of ANOS, it is **YOUR** Conference and Show! NOSSA is merely acting as host for this year's Conference.

Speakers from Australia, Papua New Guinea and New Zealand have been selected on the basis of specific expertise and public speaking ability. Speakers include David Banks - *One hour wonders and rarely seen Australasian orchid species*, Heinrich Beyrle - *Soil pH in habitats of terrestrial orchids*, Andrew Brown - *Aspects of the biology and ecology of Western Australia's native orchids*, Malcolm Campbell - *Hybridising between Australian and New Zealand genera*, Mark Clements - *Australian Dendrobium taxonomy*, Lorraine Fagg - *Sarcochilus species in the wild and the latest hybridisation*, Don Gowanlock - *Virus in Australasian native orchids*, Ted Gregory - *Hybridising with Dendrobium Willowie Gold*, Wayne Harris - *The evolution and distribution of the Australasian Orchids*, Neville Howcroft - *An introduction to Papuasian Spathoglottis*, Bruce Mules - *Growing native orchids in arid areas*, Les Nesbitt - *Conservation of orchids*

on a bush block, Andrew Perkins - *The systematics of the genus Calochilus*, Helen Richards - *You can have a darn good collection of species terrestrials*, Daryl Smedley - *Miniature orchids of Australia*, Phil Spence - Australasian species - *hybridising with New Guinea Dendrobiums*, Geoff Stocker - *Selected orchids of Papua New Guinea - notes on habitat and cultivation*, Walter Upton - *Hybridising with the genus Dendrobium in Australia*, Ron Heberle - *Caladenias and their putative hybrids of Western Australia*, and John Woolf - *Recent trends in novelty Sarcochilus*.

September is the best month to see native orchids in the bush near Adelaide. Some 100 species of terrestrial orchids occur in the Adelaide Hills area, making it one of the richest orchid areas in Australia. Local experts on South Australia's native orchids have offered their services as field excursion guides. Two formal excursions are being organised and many very exciting terrestrial orchid species will be seen. Additional informal outings, both before and after the Conference, are also being arranged.

A Photographic Competition is being held in conjunction with the Conference and Show. All entries will be displayed at the Conference in a room specifically designed for such displays. Wouldn't it be great to have every Australasian orchid species represented in one form or another at the Conference! Paintings, ceramics, woodcarvings and other high quality crafts depicting native orchids will be placed on display alongside the photographic entries. NOSSA is finalising other displays and events that will add considerably to the enjoyment of the Conference.

The Conservation of our native orchids will be a much promoted theme of the 1996 Conference. It is hoped that Conservation Officers from all ANOS associated/affiliated Societies will meet in Adelaide to maintain a conservation purpose and solidarity at national and international levels. A conservation forum is planned for the Saturday morning of the Conference and a board-room has been booked in which Conservation issues may be discussed throughout the Conference period.

Some great news is that Dr Barbara Hardy AO has agreed to open the Conference for us. This is indeed a great honour for both N.O.S.S.A. and for A.N.O.S! No one has a busier schedule than Dr Hardy and she has had to cancel another very important engagement to be with us.

There are other good things happening as well:

- The Adelaide Botanical Gardens/State Herbarium will assist us in putting together a special display of the more historical aspects of native orchids in South Australia,
- John Riley will have up to three displays (*Chiloglottis*, the *Caladenia dilatata* complex and *Pterostylis longifolia)*, each comprising about 20 of his outstanding botanical drawings, showing the variances that occur in certain orchid species/complexes in different localities around Australia,

- Ron Tunstall, considered by many as Australia's foremost photographer of native orchids and an excellent speaker, will give registrants an intriguing look at *Diuris*, using 35 mm slides,
- Ron Heberle, a man with an outstanding knowledge and understanding of Western Australia's native orchids, will have a very large and very impressive photographic display of Western Australia's orchids,
- We are working on putting together special exhibits showing native orchids from both Papua New Guinea and from New Zealand, regions in which a large number of live plants will not be available for the Conference. The individual displays will be a combination of live plants, photographs and 35mm slides,
- There will be continuous showings of 35 mm slides (we hope to have several projectors set up) and videos, of Australasian native orchids,
- NOSSA Life Member Don Wells has crafted, from large cuts of redgum, a spectacular Conference Totem that will be garnished with orchids and ferns and will act as the perfect entrance to the Native Orchid Show,
- There will be a large trading table / sales area, with many interstate nurseries and other vendors represented,
- A display showing some of the modern laboratory techniques, such as flasking, that are being used in the culture of native orchids,
- We are hoping to have 'Meet the Author' and 'Meet the Artist' sessions in order that registrants may meet and talk to the 'celebrities' themselves,
- A display of *Rhizanthella gardneri* with actual preserved plant,
- A Conference Icebreaker Evening, a Conference Presentations Dinner, a Confernce Badge, other Conference momentos,
- and there will be more and more and more!!

Further information may be obtained through writing to the **Conference Committee, N.O.S.S.A., PO Box 565, Unley SA 5061, or by phoning Gerry Carne, (08) 332 7730.**

The secretary of the Wollongong & District Native Orchid Society (Rona Wareing, 13 Eleanor Ave, Oak Flats, NSW 2529, ph 042 56 1608) writes, "If any of your members are travelling via Sydney, I extend an invitation to visit us at one of our meetings. We meet the 2nd Tuesday of the month at 7 pm in Legacy House, 96 Market St, Wollongong, which is about one and a half hours' drive south of Sydney. The meetings will be 13 August, 10 September & 8 October. If anyone does accept this invitation, maybe he/she would like to be our guest speaker for that meeting."

NZNOG - membership list 1996

Mrs DE Abraham, 14 Nisbet Tce, Kinloch RD 1, Taupo. Mrs Nancy Adye, 30 Adair St, Gisborne. Mrs CL Aston, 29 Golf Rd, Taumaranui. Mrs DJ Barron, Hadlow Rd, RD 4, Timaru. Catherine Beard, 22 Emerald Place, Hamilton. Dr Ross E. Beever, Landcare Research, PB 92170, Auckland. Mrs PM Bell-Booth, 15 The Glebe, Howick, Auckland. Mrs Sue Bergersen, 21 Amriens Rd, Waitakere RD, Auckland. Neville Berkahn, 22b Spencer Rd, Browns Bay, Auckland 10. Carolyn Birchall, 33 Waitawa Place, Rotorua. Ross Bishop, Community Box No 50, Owhango. Mrs KE Blackwell, 1 Taupata St, Christchurch 8. Rodney Boon, 5 Clipston Place, Halswell, Christchurch. John Brigham, 24 Hydra Place, Glen Eden, Auckland. Fraser Broom, 49 Flynn Rd, Hamilton. Mr E Cameron, Botany Department Auckland Museum, Private Bag, Auckland 1. Dr EO Campbell, 26 Frederick St, Palmerston North. Malcolm Campbell, 104 Awatere Ave, Hamilton 2001. Mrs YJ Cave, Seafield, No.4 RD, Wanganui. Mrs LP Chrystall, c/- Post Office, Foxton. Bruce & Bev. Clarkson, 7 Lynwood Pl, Hamilton. Noeleen Clements, Worsnop Rd, RD 6, Whangarei. Ian Cooksley, Manakau North Rd, RD 31 Manakau, via LEVIN. Ernie Corbett, 10 Protea Place, Bell Block, New Plymouth. Delphine M Cox, 12 Cleary St, Lower Hutt. Heather Crofskey, Riviera Tourist Court, State Highway 3 - Mokau, New Plymouth. Mrs Bett Davies, 811 Acacia Bay Rd, Taupo. Peter de Lange, Department of Conservation, POBox 68908 Newton, Auckland. Judy Dewar, 55 Hill Rd, Belmont, Lower Hutt. Ian and Nancy Dodd, Dodd Rd, 4 R.D., Waiuku. John Dodunski, 22 Hartland Place, New Plymouth. AWD Donaldson, 4 Mali St, Dargaville. Mr AP Druce, 123 Pinehaven Rd, Silverstream, Upper Hutt. Allan Ducker, 75 Wharf Rd, Te Atatatu Peninsula, Auckland. Treasurer Dunedin Naturalists' F.C., PO Box 6184, Dunedin. Mrs Audrey Eagle, 8 Mount View Place, New Plymouth. Chris Ecroyd, 33 Raniera Place, Rotorua. Barbara Elliott, 36 Ronberg St, Palmerston North. Pat Enright, 19 Gaya Grove, Ngaio, Wellington. Annette Fairweather, 50 Ponsonby Rd, Karori, Wellington. Mrs Wilma Fitzgibbons, 105 Dickson Rd, Papamoa. WJ Forrest, 33 Upland St, Otumoetai, Tauranga. W.H. Fransen, 6 Wedgewood Place, Hamilton. E. Anne Fraser, RD 4, Taumaranui. Mr G Fuller, 6 Torbay St, New Plymouth. Mr TC Funnell, POB 406, Opotiki. Mr M Gibbs, 27 Balfour Cres, Hamilton. Elaine Glasgow, 14 Dorset Cres, Palmerston North. Dr Eric Godley, Box 16, Pigeon Bay, Banks Peninsula. Mr and Mrs R Goodger, 9 Somerset Grove, Tauranga. Alva W. Gosling, PO Box 69-058, Glendene, Auckland 8. S. Graham, 141 SH1, Waitahanui. Mrs JP Green, 14 Princes St, Waihi. John SD Gregory, 329 Main Rd, Linden. Lorna Grey, 9 Bristol Ave, Otumoetai, Tauranga. John Groom, PO Box 1, Matata. Marjorie Guttery, 2/15 Tyburnia Ave-Owairaka Ave, Mt Albert, Auckland. ED Hatch, 25 Tane Rd, Laingholm, Auckland 7. Neville Hewinson, Kara Orchids -

Pearson Rd, Kara, Whangarei. Mrs BV Hoggard, RD 1, Awanui. Val Hollard, PO Box 22, Raglan. Margaret Hopkins, PO Box 86, Halfmoon Bay, Stewart Island. Chris Hubbert, PO Box 3451, Auckland. JB Irwin, 192 Bellevue Rd, Otumoetai, Tauranga. Don Isles, 33 Swansea St, Palmerston North. Mrs JM Jenks, RD 2, Upper Moutere, Nelson. Cathy Jones, c/- Dept of Conservation, Private Bag5, Nelson. Sandra Jones, 14 Park Rd, Titirangi, Auckland 7. Paul Lambert, 45 Lydia St, Greymouth. Mrs I Lankshear, 292 Racecourse Rd, Invercargill. Stewart Lauder, 9 Winnie St, Greymouth. Pauline Lawes, 31 Glen Var Rd, Torbay ECB, North Shore - AK. Barbara M Ledger, 15 Bellbird Cres, Waikanae, Wellington. Paul Left, 1 Rhodes Ave, Mt Albert, Auckland. Monique Lens, PO Box 28-861, Remuera, Auckland. WF Liddy, 8 Thurley Place Bayview, Napier. David & Beverley Lowe, 12 Alexander Ave, Onekawa, Napier. Ross Macdonald, 12 Bens Place, Wanganui. Mr and Mrs Robert L. Macnab, PO Box 36, Wanganui. Hazel and Bob Major, 8/1 Bayswater Place, Onerahi, Whangarei. Secretary Manawatu Orchid Society, PO Box 5223, Palmerston North. Jennifer Manning, 258a Mt Pleasant Rd, Christchurch 8. Graham Marshall, 106 St George's Rd, Avondale, Auckland. MC Matheson, 4 Cherry Lane, Balclutha. Mrs Pauline Mayhill, 18 Ruamoana Place, Omokoroa, Tauranga. David McConachie, 329 Botanical Rd, Palmerston North. Mrs Barbara McGann, 4a Rother St, Oamaru. Margaret Menzies, No 19 R.D., Eltham. Mr DS Mitchell, Eland North - Palmer Hill Road, RD 1, Taupo. Dr Brian Molloy, Landcare Research, POB 69 Lincoln, Canterbury. Mrs Sandra Moore, 4 Monterey St, Glendowie, Auckland. Mark E Moorhouse, 10 Tainui St, Stoke, Nelson. Mrs PH Morton, 120 Aberdeen Rd, Castor Bay, Auckland 9. Yvonne Moulden, 11 Syme Cres, Kawerau. Jean Mowbray, 9c St Olphert's Ave, Hamilton. Ken & Noeline Murray, 61 Valley Rd, Mt Maunganui. ND Neilson, 60 Horokiwi Rd West, Newlands, Wellington 4. Mrs Marjorie Newhook, 24 Landscape Rd, Mt Eden, Auckland 1003. Mr Trevor Nicholls, 33 Hinekura Ave, Taupo. Mr Colin Ogle, 4 Brassey Rd, Wanganui. Brian K Otto, Suite 6 - 110 Remuera Rd, Auckland 5. Cecil Reid & Patricia Parsons, Unit 23 Puriri Park, Tawa St, Mt Maunganui. Dean Pendrigh, 22 Allstone Pl, Christchurch 9. Thom Pendrigh, 130 High St, Oxford, North Canterbury. Clive Perry, 234 Bridge St, Eltham. Mrs B Pickering, Coopers Creek, Oxford, North Canterbury. Don and Diana Pittham, Parikiore Rd, RD 6, Whangarei. Mrs Dorothy Porter, 23 Parata St, Waikanae, Wellington. Michael Pratt, Waikupa Rd, RD 12, Wanganui. Gordon Purdie, Dept Public Health - School of Medicine, PO Box 7343, Wellington. Anne Puttnam, PO Box 194, Whangarei. Mr B Rademaker, Secretary Taupo Orchid Society, PO Box 650, Taupo. Graham Randle, 173 Wellesley Rd, Napier. Aalbert Rebergen and Denise Fastier, 46 Mt Cook St, Twizel. Ian Reid, 629 Grey St, Hamilton. Karen Riddell, c/-DOC, PO Box 128, Kerikeri. Tony Robinson, 61 Moana Rd, Wellington 5. KF Ross, 13 Hinau St, Lower Hutt. Ian Rutherford, PO Box 5010, Westown, New Plymouth. Mrs C Saché, 49B Bombay St, Ngaio, Wellington. Eric Scanlen, 4

Sunny Park Ave, Papakura. Barbara Schreiber, 3 Macmillan Place, Fielding. Ken and Jean Scott, 80 Taharepa Rd, Taupo. Mrs Betty Seddon, 11 Grey St, Cambridge. PC Shapcott, 35 Titoki Cres, Napier. Mr WB Shaw and Sarah Beadel, Okere Rd, RD 4, Rotorua. Edith Shaw,84 North Rd,Nelson. Warren Simpson, c/- F Broom, 49 Flynn Rd, Hamilton. Mrs MLD Skinner, 117 Lake Cres, Hamilton. Mrs Val Smith, 80 Mill Rd, New Plymouth. Stan Sommerville, 21 Islington St, Dargaville. Gary Staples, Box 92, Paeroa. IL Stephenson, 14 Regent Ave, Rangiora. Ross Stewart, 717 Maxville Drive, Hastings. Gordon Sylvester, 22 Pencarrow Cres, Wainuiomata, Wellington. Bob Talbot, 16 Jade Place, Bell Block, New Plymouth. Alex L Thomson, 103 Cook St, Howick, Auckland. Mrs Shirley M Thomson, Ashdown Park, 10 Upper Weld Road RD 4, New Plymouth. Bettina Tinkler, 171 Grange Rd, Otumoetai, Tauranga. Mr Philip Tomlinson, 14 Putnam St, Northland, Wellington 5. Mr AJ Wallis, 64 Oxford St, Masterton. Roger Watkins, PO Box 3161, New Plymouth. Mr MC West, 3 Millar Rd, Lake Okareka, Rotorua. Ron Whitten, 5 Thorley St, Mt Eden, Auckland 4. Cath Wilson, 20 Potatau St, Grey Lynn, Auckland 2. MG Wilson, 16 Argyle St, Herne Bay, Auckland. Bev. Woolley, 8 Beverley Cres, Hillcrest, Hamilton. Wilbur Wright, 12 Symes Cres, Kawerau. Beryl Young, PO Box 94, Whangarei. Maureen Young, 36 Alnwick St, Warkworth. Mr Cesar Zapata Jr, 34a Ranelagh St, Karori, Wellington. Sec. Australasian Native Orchid Soc, GPO Box 978, Sydney NSW 2001, Australia. Sec. Wollongong N.O.S., 13 Eleanor Ave, Oak Flats, NSW 2529 - Australia. Sec. Native Orchid Soc.of S.A., PO Box 565, Unley, SA 5061 - Australia. Sec. West Aust.Nat.Orchid S&C Group, PO Box 323, Victoria Pk, Western Australia 6100.. Editor Victorian Group, 56 Civic Parade, Seaholme, VIC 3018 - Australia. Ruth Rudkin, 18 Lyle Ave, Lindfield, NSW 2070 - Australia.

Australasian Native Orchid Society website

Further to our mention of orchid information available by electronic mail (see Orchids on the Internet, *J58*) there is now an ANOS website. The Email address is **graemebr@ozemail.com.au**
and the website address is **http://www.ozemail.aust.com:80/~gracmebr/**

The website includes a Home page (index to other pages), a Directory of ANOS groups and societies, Conservation, *The* Orchadian, articles from group bulletins and journals (including NZNOGJ - which is proving to be a very popular site), species descriptions and photographs, and a quick reference to other orchid sites around the world. The website is updated weekly.
