The New Zealand Native Orchid Journal

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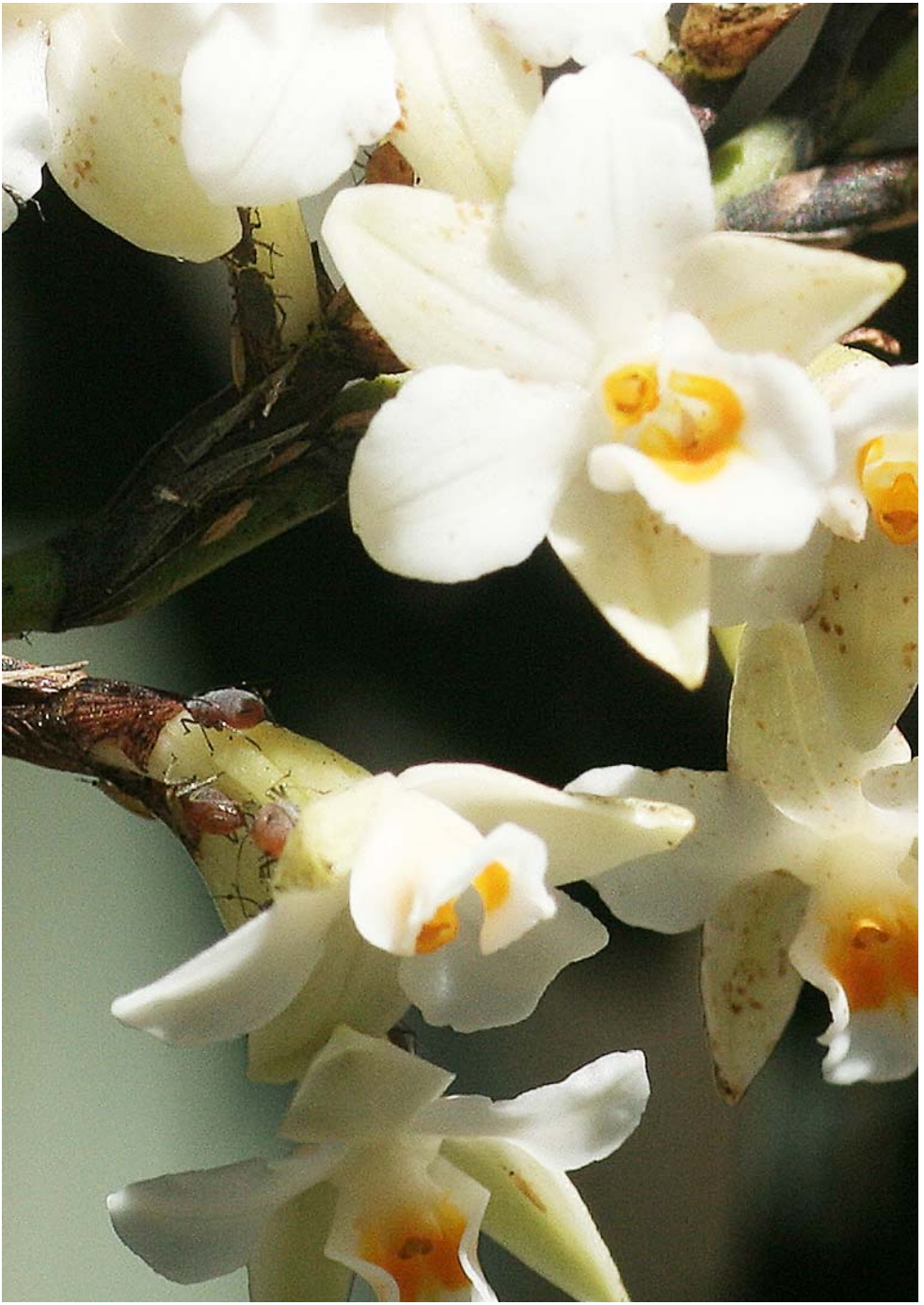

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The Type Locality: Ian St George

7: Raukawa, Waimarama and *Cyrtostylis rotundifolia*

In 1853 JD Hooker described *Cyrtostylis rotundifolia* from plants sent by Colenso from Raukawa Ridge and Cape Kidnappers, Hawke's Bay, [1]...

"Very similar to *C. oblonga*, but smaller, shorter, with an orbicular leaf, blunt and cordate at the base, and narrower lip, rather narrower at the base than above; the latter organ is however a variable one in *C. oblonga."*

At the same time he described *Cyrtostylis macrophylla*, "A much larger species than either of the former". In the Handbook of 1864 he retained *C. oblonga* and *C. rotundifolia*, but sank *C. macrophylla* as "nothing but a large state of this (*C. rotundifolia*), which may itself prove to be a variety of *C. oblonga*." [2].

In 1906 TF Cheeseman wrote, "I have been compelled to sink *C. rotundifolia* as a species. It differs in no respect except in the width of the leaf, and in several localities I have observed the two forms growing intermixed and gradually passing into each other."[3] He listed *C. oblonga* and *C. oblonga* var. *rotundifolia*

The same year Schlechter changed their genus to *Acianthus*, but Cheeseman ignored that in his 1925 second edition [4].

Rüpp and Hatch included all the NZ plants in *Acianthus reniformis* (R.Br.) Schltr, though noted that "The New Zealand plant seems consistently more diminutive than the typical form of *Acianthus reniformis*, but apart from this and the oblong leaf we can find nothing to distinguish them." [5]. Lucy Moore followed suit [6].

Cyrtostylis was eventually reinstated, and while *C. rotundifolia* continued to be confused with the Australian *C. reniformis*, *C. oblonga* was reinstated as a species.

Dawson, Molloy and Beuzenberg reported in 2007 that, on molecular and chromosomal evidence, New Zealand has two endemic species, and that "The New Zealand endemic *C. rotundifolia* has long been confused with the distinct Australian taxon *C. reniformis*" [7].

Full circle. We have returned to Hooker's original 1853 opinion. New Zealand has two species, *Cyrtostylis rotundifolia* and *C. oblonga.*

Colenso's specimens

Colenso sent specimens of *C. oblonga* from the Far North, and of *C. macrophylla* from Hawkes Bay ("heights, nr. Cape Turnagain"; banks of Maraekaha, and banks of Maraetotara under Kahuraanake hill), but here we are concerned with his collections of *C. rotundifolia.* He listed

***725**. Orchis (?Cyrtostylis) scarcely developed, clayey ground among fern, coast, 10 miles south of Cape Kidnappers.*

This was in a lot sent to Kew on 6 August 1846. He had been at Waimarama, about 10 miles south of Cape Kidnapper, on 18 August 1846, early in the orchid's season.

He also listed

***1478**. Orchis, same locality as 1437.* (1437 was a *"Lichen… high ridge nr. Raukawa."*)

***1484**. Orchis, from Raukawa: comp. with 1478.*

He sent both to Kew in a collection completed in September 1847. He had been in Raukawa 15-16 September. He wrote,

13 left this village [Te Waipukurau] at ii. p.m., & by Sunset gained the village on the little islet in the lake Te Rotoatara.

14 [at Te Rotoatara].

15 crossed [from the islet in lake Te Rotoatara].… on to Raukawa, which place we reached by Sunset; our course being by a very disagreeable route – deep marshes, and up & down high and steep hills.

Cape Kidnappers

The famous Gannet colony, luxury lodge and guided forest walks.

Waimarama

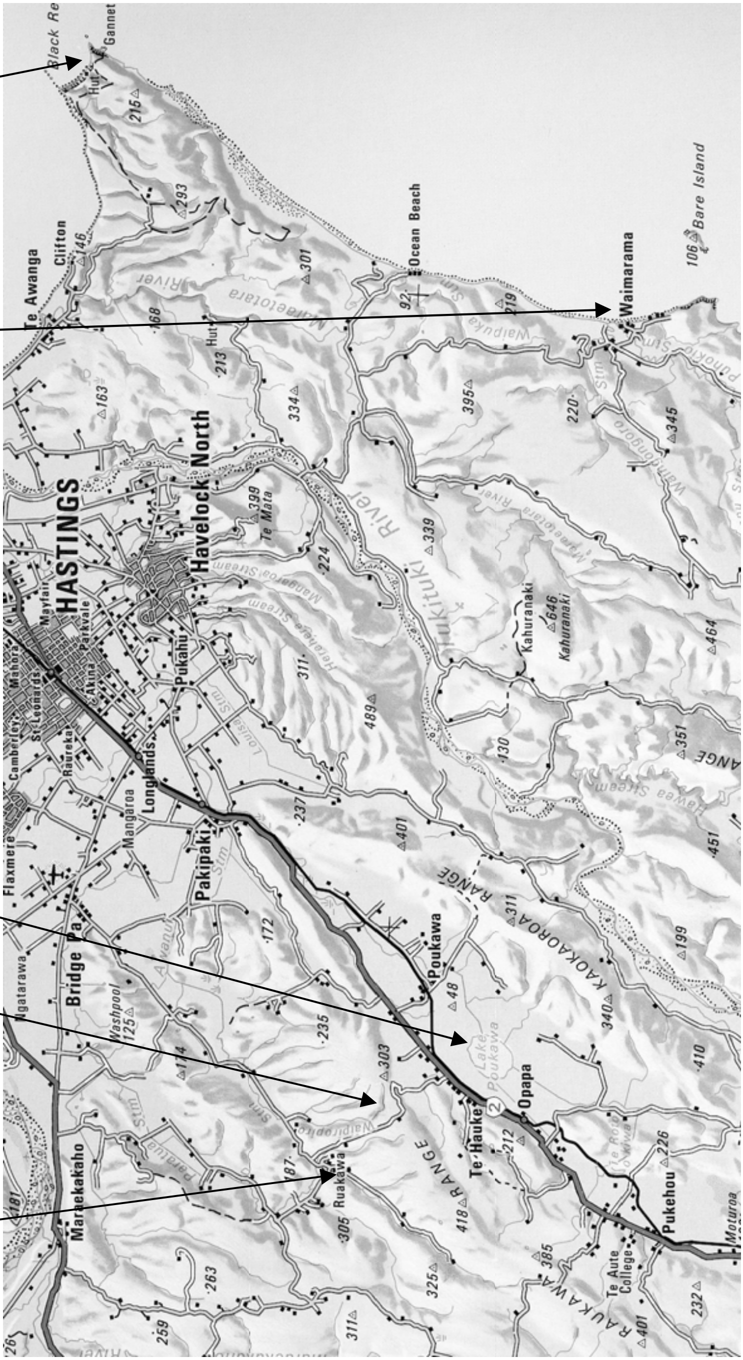
Waimarama is an increasingly popular and well developed beach resort now.

Lake Poukawa

Raukawa Ridge

The Raukawa Ridge dominates the view to the left as you pass Te Aute and Te Hauke on the way to Hastings on SH2 from Waipukurau.

Raukawa



16 left this place [Raukawa]... obliged... in consequence of the late rains, to leave the low grounds... and take to the hills – through fern and "scrub".

Thus the *Cyrtostylis rotundifolia* specimens came from Raukawa Ridge and Waimarama.

What's there now?

Waimarama is a well-developed beach resort, with no likely habitat for *Cyrtostylis.*

West off the main Waipukurau-Hastings highway, Burma road winds up over the great limestone ridge that is the Raukawa range. The view east from the top, out over the fertile flatland that was all lake and swamp in Colenso's time, is spectacular. Lake Rotoatara and the Te Aute swamp were drained in 1888 by Samuel Williams, son of Bishop Williams, Colenso's nemesis, to increase his holding of arable land. He did it by turning the Waipawa River, and to compensate Māori owners for the loss of valuable water-based resources he helped them develop small farms.

Down to the west is Raukawa itself – a couple of houses and a preschool. The land is all pasture – not a bush remnant to be seen. No likely habitat for *Cyrtostylis*

References

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2. Hooker JD. Handbook. 1864.
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5. Rupp HMR, Hatch ED.Relation of the orchid flora of Australia to that of New Zealand.... Proc. Linn. Soc. N.S.W. 70: pp53-61.
6. Moore L. in Moore and Edgar: Flora NZ. 1970.
7. Dawson MI, Molloy BPJ, Beuzenberg EJ 2007. Contributions to a chromosome atlas of the New Zealand flora—39. Orchidaceae. NZ J Bot 45 (4): 511.

At Raukawa today

Descending Raukawa Ridge on Burma road

Lake Poukawa, a remnant of the once much larger Lake Rotoatara—view from Raukawa Ridge

NZNOG AGM

13-15 November 2009

As the Iwitahi Camp is no more, we have booked

Sika Lodge, Clements Mill Road, Iwitahi, Taupo

for the weekend. The lodge is about 13 km from the Reserve and about 30 km from Taupo.

The lodge can accommodate about 36 people and is set up with bunk rooms, lounge, kitchen, showers, toilets and laundry facilities.

There will be time for presentations on Friday and Saturday nights and there may be a field trip and/or working bee at the Iwitahi Reserve as well.

If you are interested in attending please email

David McConachie
pleione@orcon.net.nz so we can get an idea of numbers.

The New Zealand Native Orchid Journal

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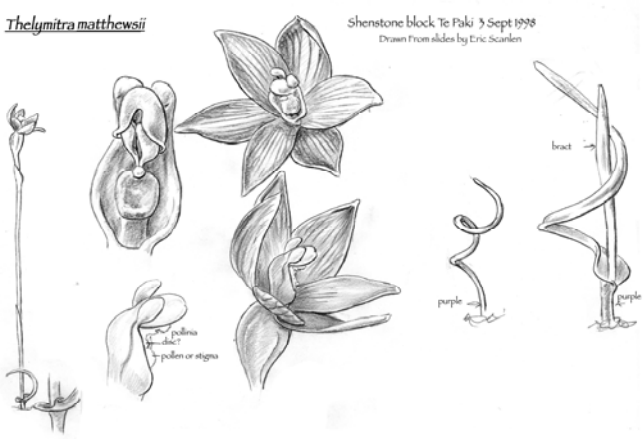
Elementary: ED Hatch

23. *Thelymitra* 3

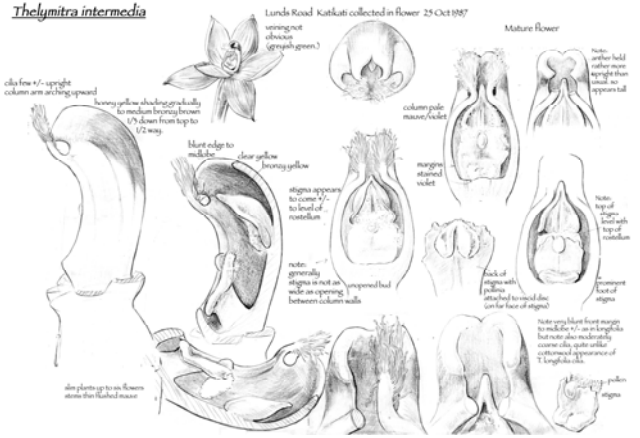
Drawings by Bruce Irwin, from Brian Tyler's "Bruce Irwin's drawings of New Zealand orchids", NZNOG, Wellington, 2007.

9: *Thelymitra matthewsii*

(for R.H. Matthews)
Leaf expanded at the base, then narrowing abruptly to spiral round the stem. Flowers dark-purple, with darker stripes. Column purple at the base, merging into yellow at the top. Midlobe absent. Lateral lobes bright-yellow, oblong-falcate, obtuse, without cilia
Distribution – Australia – Western Australia, South Australia, Victoria. New Zealand – North Id., from the North Cape to Kaitaia
Flowers – August-November – self pollinated



10: *Thelymitra* aff "pauciflora"



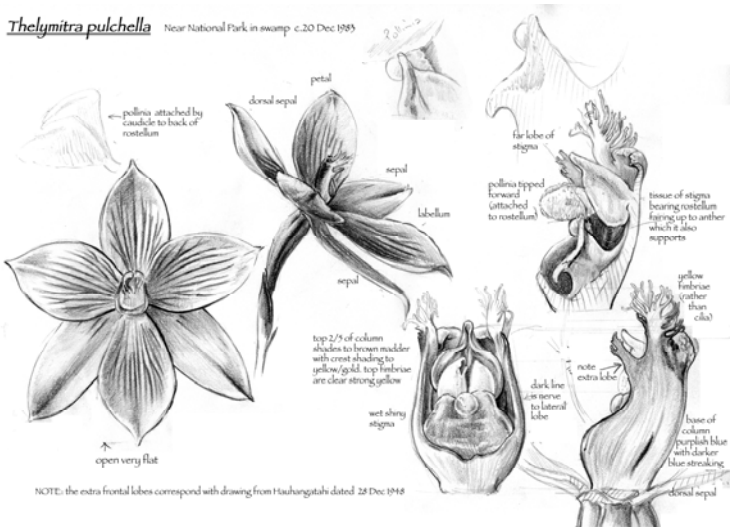
(few-flowered – not much help!) Flowers blue, shading to white. Column pale-blue. Midlobe brownish, deeply cleft, the margins bright-yellow, smooth or ragged. Lateral lobes with short, erect tufts of white cilia
Distribution – probably endemic as *T.colensoi* – Three Kings Is., North and South Is.
Flowers – November-January – self pollinated.

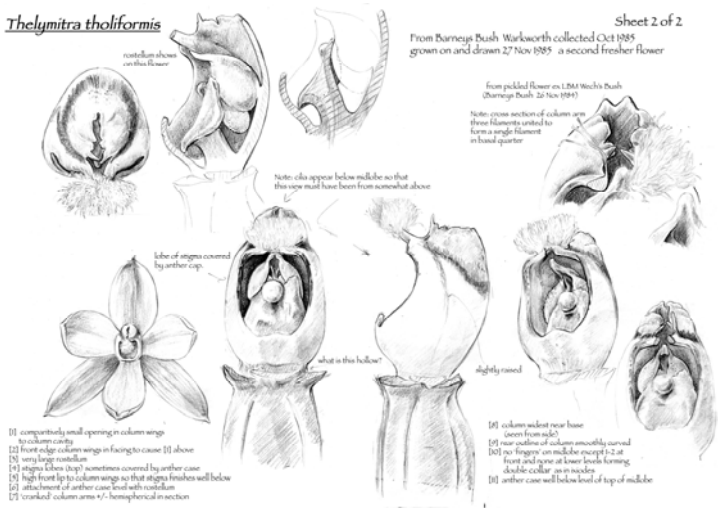
aka T. intermedia, and T. colensoi—Ed.

11: *Thelymitra pulchella*

(beautiful – it is)

Flower mauve, with darker stripes. Column reddish-blue. Midlobe not hooded, reddish-brown with paler margins. Lateral lobes reddish, with bright-yellow cilia
Distribution – endemic – North, South, Stewart and Chatham Is.
Flowers – October-February – self pollinated





12: *Thelymitra tholiformis*

(the dome-shaped midlobe of the column) Similar to *T.aemula*, but the midlobe of the column is in the form of a bright-yellow dome
Distribution – endemic – North Id., North Cape south to the Waitakere and Hunua Ranges. A kauri-zone species
Flowers – November-December – self pollinated.

This is the last of the series completed by Dan Hatch before his death in 2008

Eponymous orchids: Val Smith

Daniel Sullivan and *Sullivania minor*

Sullivan was a teacher, in charge of Moyston School (near Ararat) for 27 years. To give us an adequate picture of Grampians vegetation, he combed the Ranges, compiling the first breviary of their flora, "Native Plants of the Grampians and their Vicinity" — ten papers in volumes II and III of *Wings Southern Science Record* (1882-83). He also systematically collected mosses.

Sullivan records an amusing circumstance connected with his location of *Aotus* on heathland at the foot-hills. Four suspicious men rode up on horseback to see what he was doing, and held a "pow-wow" on the best course of action. One thought him to be a surveyor, another an artist but the third and fourth maintained that he was a fugitive from the Kelly Gang.

He was an active collector of mosses on and about the Grampians in the 1870s and 1880s, his material going to Mueller who named several species after him. Using Mueller's determinations, Sullivan wrote "Mosses of Victoria, with Brief Notes" *(Vic. Nat.* IV, p. 106, Nov. 1887) wherein he mentions having collected 200 species from different parts of the Colony.

A vital factor in promoting botanical activity in and around Melbourne was the Field Naturalists Club of Victoria, founded in 1880 with von Mueller as its patron and staunch supporter. The club's journal, *The Victorian Naturalist*, began on a monthly basis in 1884 and Mueller was a frequent contributor to its pages —79 articles and notes to August 1896. As well as general observers and collectors of plants, the club had several members with specialist knowledge, viz: Charles French (orchids and ferns), Daniel Sullivan (mosses), Rev. Francis Wilson (lichens), Henry Tisdall (fungi and algae), John Bracebridge Wilson (algae), Henry Watts (algae) and Prof. Arthur Lucas (algae) - all contributed papers to *The Victorian Naturalist* (Willis 1949).

Sullivan died on 2 June 1895 at Moyston, near Ararat, Victoria. The Daniel Sullivan Memorial Seat, Halls Gap, Ararat, Grampians, is listed in the Inventory of Historic Places on Public Land in SW Victoria.

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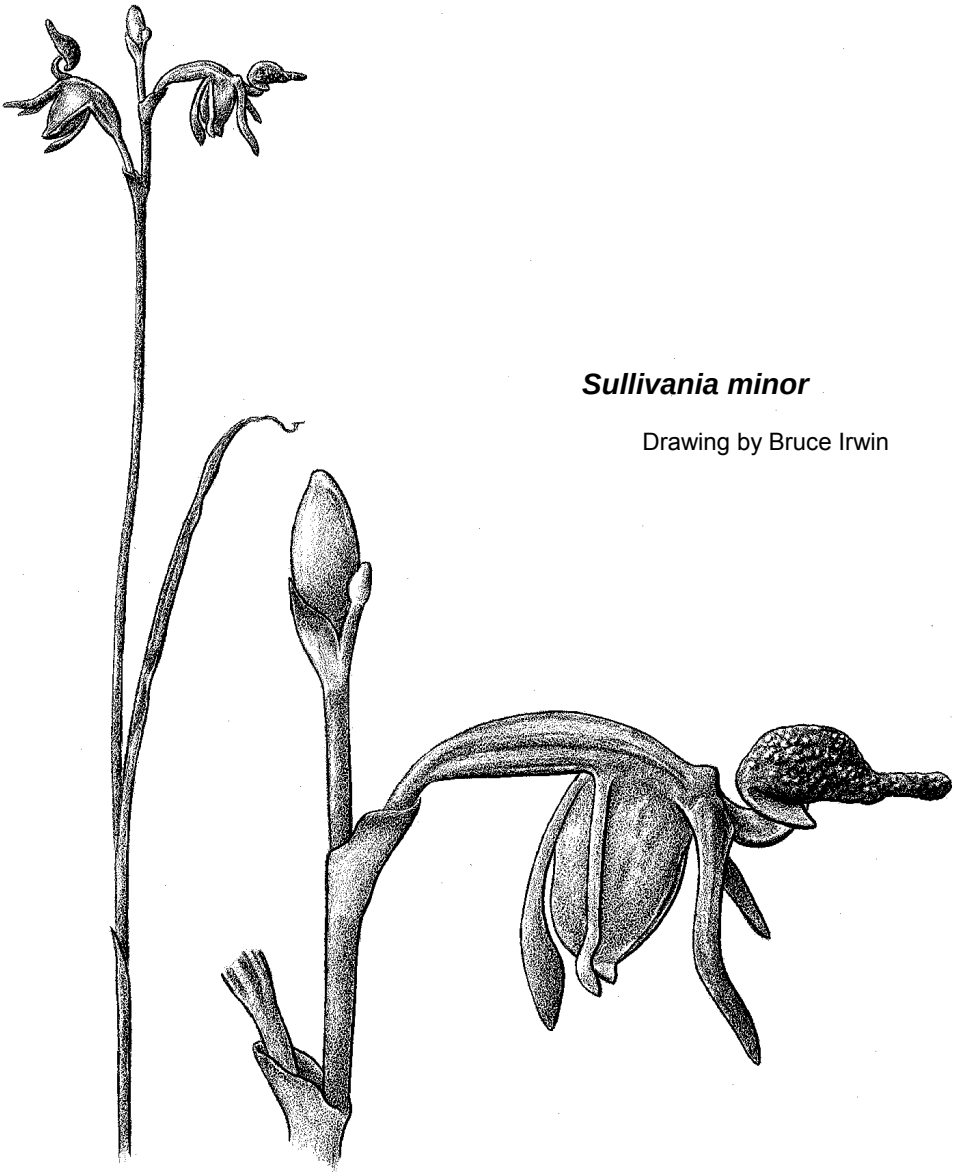
Caleana nublingii Nicholls. Victoria Naturalist 48: 15 (1931).
Paracaleana sullivanii (F.Muell.) Blaxell. Contr. New South Wales Natl. Herb. 4:281 (1972).
Paracaleana minor (R.Br.) Blaxell. Contr. New South Wales Natl. Herb. 4: 281 (1972).

Characteristics: 15cm, slender, red stemmed with single long narrow leaf and 1–7 flowers.
Habitat: sandy loam at a single site.
Flowers October to January.
Distribution: once found in Northland and Bay of Plenty, now known from a single small colony at Rotorua.
Conservation status: naturally uncommon, vagrant.
Notes: NZ plants match the widespread Australian species.



Sullivania minor

Drawing by Bruce Irwin

This is the last in this series

Far North diary: Kevin Matthews

23 MAY, "On 10 May I managed to head up to Hukatere late in the afternoon; it started raining just into the trip north and finished when I got back to the truck after a 4km or so walk: now that's sods law working again! Apart from the rain it wasn't a bad trip; the lovely maroon *Acianthus sincliarii* "hukatere" that was in full flower 2 years ago to the day was not showing, not even a leaf; perhaps the dry summer has it delayed or it may not show until next season? This was also the case with the small colony of *Cyrtostylis oblonga* that had well advanced leaf showing with just a hint of peduncle. I also hunted without success for the *Corybas cheesemanii* colony which was also in full flower 2 years prior. This colony grows in very little light compared to other colonies here about. The yellow leaf is hidden beneath the humus and leaf litter with only the pearly topped flowers betraying its presence and so they must be almost totally saprophytic. I would like to do a comparison with the broader dark green leaf *C.cheesemanii* that is commonly encountered above ground for my own benefit. Again perhaps this *Corybas* colony will not show this season; however I've noticed that all orchid leaf is showing and moving later than usual this season.

"Yesterday I took botanists Leon Perrie and Lara Shepherd to an Awanui flood plain remnant Kahikatea forest which is home to a number of rare plants. It was a perfect opportunity to see how the *Adelopetalum tuberculatum* was coming along and it certainly didn't disappoint showing off its best to date with hundreds of flowers in full bloom. Given the amount of flower out I had hoped to catch some possible pollinators in action; however the only insect seen scuttling amongst the pseudobulbs was the tiny 6-8mm but striking native cockroach *Oranatiblatta maori.* This particular cockroach has very dexterous antennae which it uses continuously – note the photo **(Fig.1)** which was taken in a previous trip to the same site. Thanks to John Early for identifying the native *Oranatiblatta*; this wee chap uses these antennae to its best advantage.There was a minute glistening drop of nectar at the base of the columns that could draw in this and other insects. A tiny unidentified native snail was also seen resting within the colony; in the following photo of the snail **(Fig.2)** the glistening nectar is clearly visible in the top centre flower. I wish I had got a fraction better focus on the nectar at the base of the column of the top centre flower but trying to hold things steady above ones head is not easy!

"The flowers and pseudobulbs were draped in spider webs that had caught the odd unidentifiable prey."

28 JUNE: "As I noted previously these orchids are a month behind flowering this season, at least here in the Far North. Even though we have *Corybas cheesemanii* thriving here on the farm I've tended to overlook them as common. This season I've made it one of my goals to look at them in detail and to my surprise have found that they do have a fragrance of sorts; the pleasant smell of field mushrooms comes to mind. I was dubious of the scent and thought it may be associated with the soil, but after isolating a soil sample from within the colony and giving it my olfactory test I was able to confirm the scent was indeed emitting from the flowering colony.
"I also lifted back a dorsal sepal to expose the labellum and saw that it has a small opening in the midlobe. I'm unsure of the purpose of this cavity; it doesn't appear to lead to the fertile parts. I'm unable to ascertain at this point if this opening and associated "tube" which runs towards the base of the labellum is open ended or closed, if there's an opening it must be very minute. In the photo depicting the midlobe opening you can see the very acute tip of the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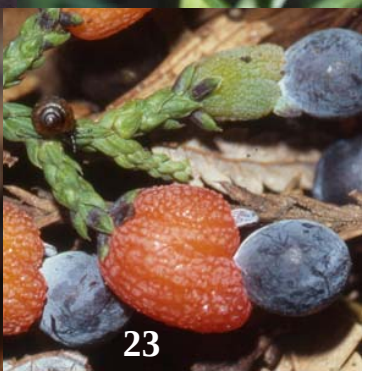
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anther rising up from the labellum base. "To find a possible pollinator and most likely a Fungus Gnat, a night visit would be needed; I couldn't detect any sign of bugs during the day."

3 AUGUST "Bill Campbell popped out to Lake Ohia Wednesday 27 July to check on some *Anzybas* leaf he had noted two years ago. To his surprise and mine they turned out to be RHM'S 'pales'. Pale indeed as you can see by the photos, there is only a faint pink showing up on the labellum outer rim as the flower matures. The flower is quite clear and this is illustrated by the fact that one can see the pollinia through the wall of the flower. I went out with Bill on the Saturday 1 August to have a close examination of the *A.* 'pale' and of course try for photos. The *A.* 'pale' is localised but nonetheless we've so far found that it covers several hundred sq. metres with small colonies scattered throughout the predominately *Leptospermum scoparium* var. *incanum* vegetation. Some flowers have already set pods with the flower well faded while others are still in flower bud. The largest flowers have a 'hang dog' look about them as in **Fig.7** but are fully intact. The occasional leaf is pandurate as in **Fig.8**. We found no red *Anzybas rotundifolius* in the immediate area, those closest to date being found some 2 kilometres to the south. I had in the past noted that some *Anzybas rotundifolius* had varying shades of red with some looking more pink especially as the flowers matured but could never reconcile this with RHM's pale form, so you can envision that I'm most pleased with Bill's excellent find."


Richard Henry Matthews

4 AUGUST: "There is no structural difference that I can detect between *A.rotundifolius* and *A*. 'pale' in the flowers. However the *A.* 'pale' flowers in general have a more hang dog look when mature i.e. the flower points more towards the ground. They also tend to retain moisture within the flower; one can observe this through the flower wall. Today I hoped to avoid moisture but despite the photo being taken late afternoon it was still present while the red *Anzybas rotundifolius* 2km away were moisture free. The main reason for this is the denser habitat of *A.* 'pale'; generally *A.rotundifolius* grows in reasonably open conditions albeit under shade however the *A.* 'pale' is growing in low light amongst dense spindly *Leptospermum scoparium* var. *incanum* interspersed with *Schoenus brevifolius*. So although I cannot detect any structural difference there is certainly a habitat difference. It's almost 110 years ago (15 August 1899) that Richard Henry Matthews sent his pale voucher of the now *Anzybas* to Cheeseman. He described it as being so clear that one could see the pollinia through the flower wall, something that struck me when I first saw the flower." (see **Cover** and **Figs 7-10**)

5 AUGUST: "Today I revisited a large colony of *Corybas cheesemanii* growing here on the farm intent on photographing a dissected labellum cut down through the midlabellum sinus (pocket). I did achieve my aim but with mixed results given the reflective surfaces (**Figs. 3-6**). The pocket has no drain and it could be as you suggest a spur (nectary) or as Eric suggested an egg pocket... or perhaps it plays some part in emitting their field mushroom fragrance? I never saw any eggs present within the flower but given the minute size of the dozens of gnats flying around the colony the eggs must be extremely small; assuming these gnats present are the pollinators."

1 SEPTEMBER: The photo **(on the back cover**) was taken on the 28 August of this very, very shy opening *Thelymitra*. Apart from been pampered it's still rather early however our temperatures have been a couple of degrees warmer up here on average this winter. Mind you *T.* aff. *longifolia* was in full bloom on the 6 Sept in the Te Paki area last year and I'm guessing they will be again in flower by now. I removed this unknown *Thelymitra* plant 3 years ago from a remote area which was/is being slowly but surely inundated by the cursed Sydney Golden Wattle. This pest plant eventually displaces most native specie including all orchids. The late Doug McCrae's orchid patch at Kaimaumau is an example of how a once prolific orchid site is now nothing but wattle leaf ankle deep in litter. You will note the unusual remnant blue on the lateral petals and also that the flower has self pollinated; the pollen is clearly visible embedded in the stigma. The column is rather squat for *T.*"sky" but I think this overall slender plant best fits the description of *T.* "sky"; one could expect a degree of variation given the "unknown parentage of *T.* "sky" and *T.* "roughleaf": would you agree? I've also learnt an invaluable lesson about taking a peek at the column of unopened flowers; the postanther often does not ring true to form. The postanther on this flower prior to ideal maturity does not balloon out thus masking its true form as depicted.

2 SEPTEMBER: These *Caladenia alata* are growing in the same colony here on the farm amongst scrubby Manuka on podzol silica. There is a white form missing the 2 golden calli from the midlobe. There seems to be no hard and fast rule with these calli—while some have none at all others can have 2 pairs or 2 on one side and one on the other. I was interested to see if the flower had any aids for pollination so took a flower for examination under the microscope. I wasn't too surprised to find the anther cap has bristle hairs for good pollinator footing. I'd previously not noticed the red topped hairs on the column of *C. alata. (see next issue—Ed.)*

Notes etc

DAVID JONES HAS DESCRIBED three new species of *Oligochaetochilus* from South Australia [*Orchadian* 2009*;* 16 (3): 119] and five threatened new species of *Hymenochilus* from southern Australia [*Orchadian* 2009; 16: 176.

MIKE LUSK EMAILED, "Here are pictures **(Figs 11-13)** of Te Mata Peak *Diplodium alobulum* with two flowers, of which I've found 2 and many more each with a long whisker opposite the uppermost bract. Eric tells me that the whiskers emerge where a second flower might have been. The plants are growing on a very dry clay bank under mainly *Eucalyptus* and *Pinus radiata*, and some are emerging through *Pyrosia eleagnifolia*."

A NEW GASTRODIA has been described from Hainan Island, southern China (east of North Vietnam). Qian-Wan Meng, Xi-Qiang Song and Yi-Bo Luo found the critically endangered *Gastrodia longitubularis* on a routine orchid survey. *See opposite. Note the long column—short columns appear to be peculiar to New Zealand species. Thanks to Pat Enright for drawing my attention to the paper in the Nordic Journal of Botany 2007; 25: 23-26—Ed.*

VIC VERCOE WAS "… copying some orchid slides to my digital camera & came across this albino looking *Pterostylis*. I took the pic on 29 Nov. 86 on the Iron Gate Track alongside the Oroua river." **(Figs 14,15).**

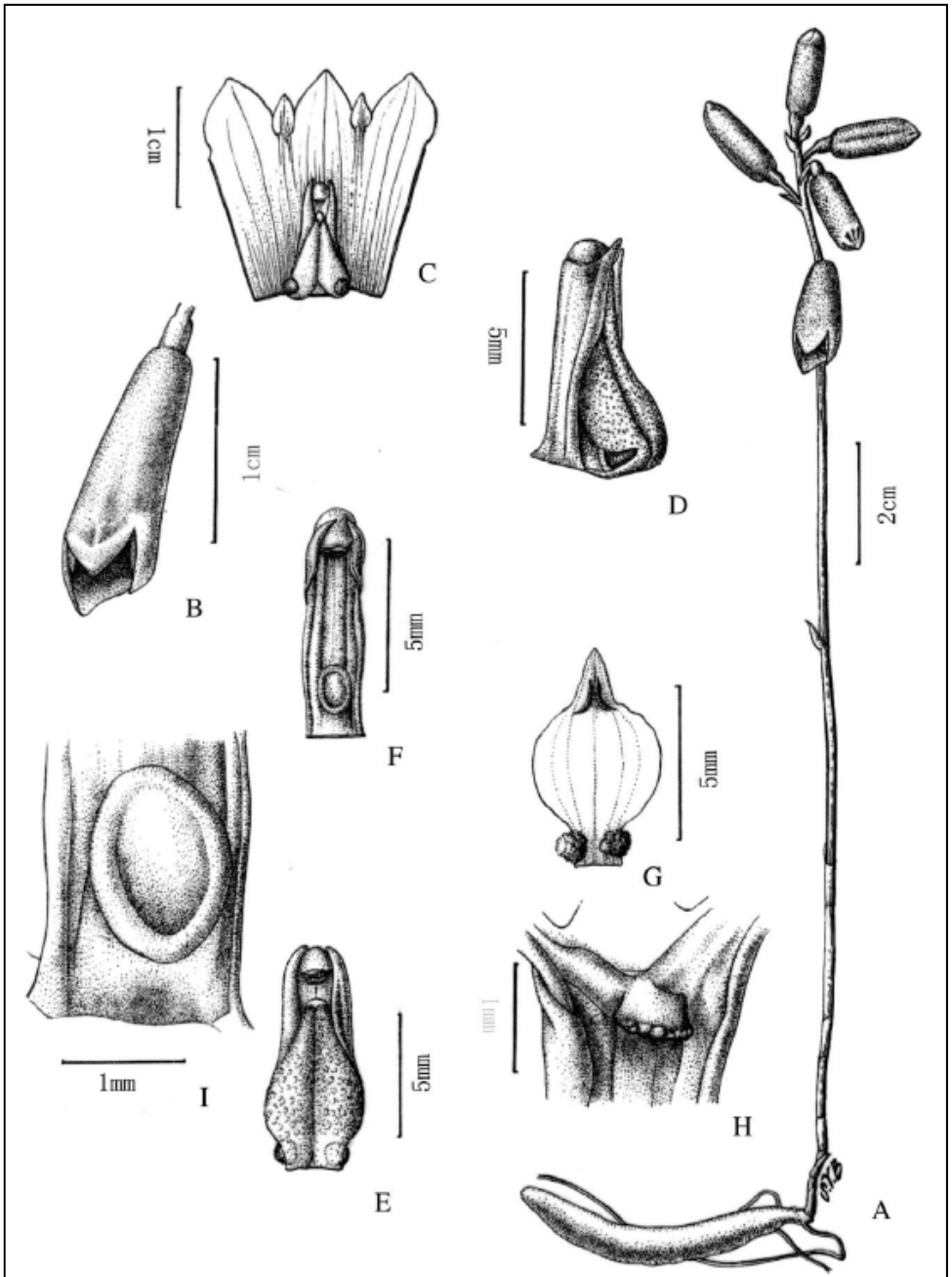
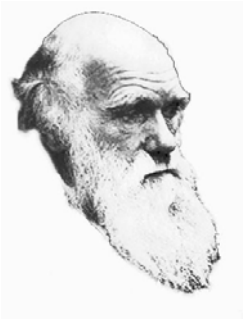


Fig. 1. *Gastrodia longitubularis* Q.-W. Meng, X.-Q. Song & Y.-B. Luo. (A) habit, (B) flower, view from above, (C) perianth tube, dissected and extended, (D) column and labellum, side view, (E) column and labellum, front view, (F) column, front view, (G) labellum, (H) rostellum, (I) stigma.

JAN KELLY EMAILED (29 August), "I have two photos of a Passion Vine Leaf Hopper at its springy plumed stage, thought that one of them might just be an insect using an orchid stem as a perch, but two indicates a more specific interest perhaps. Both taken when we lived in Albany, one on a *Microtis* stem, the other is on *Orthoceras novae-zeelandiae* and seems to be inside the flower. **Fig. 18** shows Passion Vine Leaf Hopper, *Scolypoda australis*, on a sparse *Microtis* – a second one at the top, perhaps. Not a good photo but I kept it anyway. We had a great many of these Leaf Hoppers from season to season, they were particularly crowded on the young stems of *Blechnum* ferns. **Fig. 19** *Orthoceras*: the photo shows a leaf hopper tail inside the centre top of the flower. Quite obviously a small spider has found the orchid a good structural shape to build on. Whether it hides inside the flower I don't know, but the flower would be a safe location for it. **Figs. 21–23** *Singularybas oblongus*, intact, and eaten away, in Kauri litter. It took me three seasons to get that good photo, the flower was already gone the first two times I found it. I saw a miniature snail on its stem once (not on the flower) but didn't get a photo. There is a rounded shape under the leaf that could be a snail or a water drop, possibly the latter. I've included a photo of one of the local snails on nearby Kahikatea fruit, though, for comparison in size. There are a number of different miniature snails in that leaf litter, mostly unidentified it seems. I've been hunting through the orchid discards from Haast, not having deleted them irrevocably, and came across this beauty **(inside front cover)** – knocked out of the collection because I had got the stem in focus rather than the flowers. Can see 12 thrips right off, and some other things – several aphids, and perhaps two very small cicada-types sitting head to head on the right. We shall go back this coming summer and see if we can do better at this site. **Fig. 20:** *Pterostylis* "blue-tongue": here it is, it was very common on one slope, just at the bush line where Manuka scrub met Kauri forest."

PHOTOGRAPHER KATHLEEN SHEPHERD'S website has some good orchid photographs, among them two excellent shots of the big Southland/West Coast *Pterostylis*—she calls it *Pterostylis* "bluff". Go to http://www.westofsouthernalps.co.nz/Gallery. Phil Norton's photo of the same taxon is shown at http://www.sailsashore.co.nz/orchids/orchids.htm.



DARWIN QUOTE for this issue: "False views, if supported by some evidence, do little harm, for every one takes a salutary pleasure in proving their falseness: and when this is done, one path towards error is closed and the road to truth is often at the same time opened." (*Descent of man*, Ch.XXI).

JAN KELLY " photographed this **(Figs 16,17)** from the DOC boardwalk at Hapuka estuary, Okuru, south of Haast, on January 16 this year. All the orchids in this spray had brown marks. I've just checked another set of photos of *Earina autumnalis* seen in the Waitutu forest in Southland this February, and the petals on those ones are all quite perfect. *Interesting shots, not just for the Thrips, but for the spots. Colenso sent a specimen to Hooker in October 1848, "1607. Earina rupestris, W.C. dry rocks, base of range, banks of R. Makororo; labellum curiously dotted, &c." Hooker identified it as Earina autumnalis, which he wrote, had "Flowers as in E. mucronata, but crowded, white, speckled"; perhaps this is what he was*

New Zealand Native Orchid Group Meeting 2009

Sika Lodge.

Clements Mill Road, Taupo

Directions: 27 km east of Taupo turn right off SH 5 (Napier Taupo Road) into Taharua Road and follow for 9.5 km. Turn right into Clements Mill Road

Sika Lodge is situated 13km. from the reserve. It is set up with bunk rooms, lounge, kitchen, showers, toilets and laundry facilities.

Accommodation: these are bunks you supply your own bedding etc.

The units are:
3 x 8 bunk (24 beds) with heater in room.
4 x 2 bunk (2 bed) bottom a double and single above.

1 lounge with heater and fireplace (wood supplied) TV etc.
1 kitchen with all utensils supplied fridge & freezer
2 toilet & shower rooms.
1 2 toilets & 3 showers.
2 1 toilet & 1 shower.
1 wash house; washing machine & dryer plus freezer.

2 nights per bed $50 (may reduce depending on final numbers)

Food – Catered Friday Dinner, Saturday Breakfast, Lunch and Dinner, Sunday $20

Proposed Programme
Friday Night,
Welcome and Catchup
Free Discussion

Saturday
Visit Iwitahi, Look out for other potential orchid spots
AGM (including Presentation of Hatch Medal)
3-D Orchids – Eric Scanlen

Sunday
Another look round.

Agenda for NZ Native Orchid Group Inc. AGM
To be held at Sika Lodge, Clements Mill Road, Iwitahi, Taupo on 14 November 2009 @ 8PM.

1.Present and apologies
2.2008 minutes and issues arising
3.Chair's report
4.Treasurer's report
5.Elections
6.Presentation of Inaugrual Hatch Medal
7.General business

Minutes of NZ Native Orchid Group Inc. AGM
held at Camp Wakarara, Hawkes Bay, 6 December 2008 @ 8PM.

Present: David McConachie, Judith Tyler, Brian Tyler, Ian St.George, Mary & Bob Watson, Graham Jane, Gary Penniall, Ian Reid, Bruce Irwin, Val.Smith, Wilma Fitzgibbons, Mike Lusk, Ernie Corbett, Eric Scanlen, Glyn Wren, Margaret Menzies, Claire Francis, Ina McClellan , Bill Liddy, Don Isles.

Apologies: Gordon Sylvester, Joy Wray, Michael Pratt

President's report: David McConachie made the president's report for the year and then asked for a minutes silence in honour of the late Dan Hatch. After the minute's silence David asked if anyone present wished to pay tribute to Dan Hatch's memory. Tributary speeches and recollections of his life made by Ian St.George and Eric Scanlen.

Treasurer's report: Judith Tyler presented treasurer's report and balance sheet. Ian St.George moved report be accepted. Seconded by Gary Penniall.

Matters arising from previous minutes: Courtesy copy of 2007 AGM minutes forwarded to John West as requested 4 Jan 2008.

Election of Officers: Vote of thanks proposed by Bill Liddy and seconded by Wilma Fitzgibbons to the executive for their work during the year. Also a suggestion that positions be re-offered to executive if they were willing to accept Executive willing and unanimously re-elected.

Ian moved Michael Pratt be offered a position on the executive or offered a vote of thanks for his sterling work as Webmaster. Seconded by Judith Tyler and meeting unanimously in favour.

Items of Business

Bill Liddy as representitive of OSNZ gave a report on Iwitahi. Bill advised that status

of reserve still yet to be decided and that the 'Taupo Orchid Society' is looking into ways of raising funds for continuing work at the reserve, possibly electing a sub-committee to administer it. A meeting to be called in near future with OSNZ and Taupo Orchid Society to look into this.

Next AGM 2009 if possible to be held in general Taupo Iwitahi area. Bill Liddy proposed enquiries be made as to availability of Rangitaiki Hall as venue and with those attending to find own accommodation in general area.

Ian Reid suggested Rangitaiki Hotel as possibility for accommodation for future trips to Iwitahi. Limited accommodation available at $70 per night dinner bed and breakfast. Also Sika Lodge 13 km from Iwitahi has accommodation at $20 per night. President requested secretary to write an official letter to Ian Reid to request if he could approach proprietors of 'Rangataiki Lodge' to ascertain possibility of accommodation for between twenty to thirty members of NZ Native Orchid Group for 2009 AGM. Preferably during months of Dec. 2009 or Jan. 2010.

Pokaka and Te Kauri Lodge still possible venues for 2010 AGM. To be discussed at a later date.

The Executive decided that Ian St George's proposal of a medal to be struck to commemorate the contribution to NZ Orchidology of the late Dan Hatch was an excellent idea and should be proceeded with. It is proposed that the medal be awarded annually by the NZNOG Executive to the person (nominated by any member of the group and selected on a majority vote of the executive should there be more than one nomination) who had in the opinion of the Executive made the most outstanding contribution to NZ Orchidology, as outlined in the Groups' aims. An appeal to be announced in next journal for funds to go towards costs associated with striking medals.

After members looked at Eric Scanlen's new *Colour Field Guide* it was proposed by Judith and seconded by Gary that Ian and Eric get individual quotes for printing 300 copies and then get them printed at the lowest quote. Motion carried.

Ian reported that work is progressing on printing of Colenso's letters. Still waiting to hear back from Lottery Grants if funds to be made available to cover cost of printing.

David proposed that a copy of Bruce Irwin's book on New Zealand Native Orchids be sold to The Royal Botanical Gardens - Edinburgh Library if they wish to purchase one. One spare copy is still available.

A field trip to Arthurs Pass is proposed for Dec 2009 or Jan 2010. The numbers of those interested are needed to allow arrangements to be made. Ian to place notice in Feb. Journal requesting those parties interested to confirm. David to write to Gordon Sylvester re. enquiries about best flowering times due to his local knowledge.

No further business arose and meeting closed at 9pm.

Gary Penniall Secretary.

The Column: Eric Scanlen

Hair ladders in greenhoods

Have you ever wondered why there are hairs up the inner margins of column wings in the greenhoods? What? you didn't *know* that greenhoods had hairs up the inner margins of the column wings? Well, nor did the Column until Kevin Matthews sent photos of them adorning the column wings about this time last year of *Diplodium alobulum* and *D. trullifolium* See **Fig. 24** from Taipa, 2 August 2009.

So the Column smiled, was this another distinguishing trait of his proposed *D.* "brumobulum" taxon (J77:18,23) with *D. alobulum*'s Vee sinus to the synsepalum and *D. brumale*'s turned down dorsal sepal and wide lateral petals? Not in the least. This was just another false lead, as it turned out, in the light of this year's awakening.

Close inspection of all the evidence showed that all self respecting *D. alobula*, in maturity, develop droop-snoot dorsal sepals and their lateral petals, especially in the far north, take on that *D. brumale* cobra hood look as in **Fig. 25.** They have fooled many, especially in those Sept/Oct field trips to Te Paki. Furthermore, *all* the greenhoods have ladder like hairs up the inner margins of their column wings most of the time. Have a look at Bruce Irwin's drawings. There are exceptions on selected specimens it seems. The drawings show no sign of hairs in the column of *D. alobulum* for instance. Undoubtedly Bruce's drawing specimen lacked them. But Kevin has found, in *D. alobulum* around Kaitaia, that this species has abundant hairs on some with very few on others. The Column was inspired to do a 3.5km trek up a deteriorating Otau to Cosseys track on 5 August to check on a large colony of *D. alobulum* seen there 18 years before. This common orchid is uncommon in the greywacke of the Hunua Ranges but the colony was still there. Like the Kaitaia specimens, they had hairs up the inner margins of the labellum wings and droop-snoots on the mature flowers. *D.* "brumobulum" died at that moment; gone and unlamented! The Column tenders his sincere apologies for ever proposing this taxon and now has to amend the Journals index accordingly. Those wide droop snoot *P. alobulum* in the far north, still call for a fuller investigation, he muttered.

Why is this hair-ladder trait so consistent in the greenhoods? Bruce Irwin's drawings faithfully show them in all NZ greenhood genera, *Pterostylis*, *Hymenochilus, Plumatochilos* and *Diplodium*. It seems that pollinating insects, entrapped by the triggered labellum and trying to escape through the column wings, use the hairs as ladder rungs for added leverage because of the drag of the sticky rostellum. **Fig. 27** is an unfortunate fungus gnat pollinator inside a *Pterostylis australis* from Borland stream, 26 Jan 2004. Note pollen on its back from a previous flower, clear glue on the rostellum, anchoring the gnat and only tiny ladder-rung-hairs on the margin of the column arm beneath; here pressed against a lateral petal. Apparently the rungs were too small even for this small insect to get any purchase so it has succumbed because of it. Bruce's drawing shows no hair rungs on *P. australis*; too small to show at that scale no doubt. Kevin pointed out that the hairs are always on the column wing's inner margins for a good reason; that is, to ensure that any insect aligned to clamber up these ladder rungs, automatically rubs rostellum glue onto its back before unwittingly attaching the pollinia with the glue. That seems entirely possible and would explain why those column wing hairs, in that position, are all but ubiquitous in the greenhoods — even on those species assumed to be self pollinating.

The essentiall rostellum in greenhoods is not well known even though Dan Hatch depicted it clearly in his 1951 thesis [1] but it is otherwise difficult to find in the literature. **Fig. 29** by Ian St George, clearly shows the rostellum in "self pollinated" *Pterostylis montana* sensu Moore. It also shows its bulging heart shaped stigma (not present in *P. montana* s.s.) adapted thus to catch its own pollinia as they drop, as also clearly depicted. Note the hair-ladder on the inner margin of the column wing.

"Aha", you say, "why would self pollinating species have ladder rungs for non-existent pollinators?" Good question. How about pollinating greenhorn insects in greenhood species by mistake? The Column is ill-at-ease with the concept of obligate self pollination because that is tantamount to obligate in-breeding and thus inevitable demise of the species. Triggering labella and ladder rung hairs in so called "self pollinating greenhoods", thus become a nail in the coffin of any obligate self pollination hypotheses. Both traits signify active facilities for insect pollination, occasional insects perhaps but visiting often enough to overcome the insidious effects of in-breeding.

"Then why does *P. tasmanicum,* with a non triggering labellum, have column wings at all? and why are they better equipped than other greenhoods, with ladder rung hairs, right to the top of the column wings?" Excellent questions. Firstly, that wagging, yellow plumed labellum is only an insect attractant, isn't it? Perhaps the greenhorn greenhood pollinators, still crawl in at the base of the galea, where there is enough space, then clamber up between the column wings to escape because the other upward escape route is blocked, not by a triggered labellum but by 1) the lateral petals squeezing in, 2) back slanting yellow and white labellum spikes and 3) dense and interlocking column wing hairs, right up past the rostellum. **Fig. 28** from the Shenstone Block, Te Paki, 25 Oct 2001, shows those copious column wing hairs, the usual cobwebs, spider debris and a tiny insect skulking around, to add to the confusion. Bigger bugs would need ladder rungs, for pollinating *P. tasmanicum* in the normal way. **Fig. 28** from 27 Sept 1997, shows no bugs but a fragment of its own pollinia on the base of the stigma, no doubt for fall-back self pollination after the insects have failed to cross pollinate it. What do you think?

What we need is a dedicated video expert to put a cellophane window in the side of a *P. tasmanicum*, camp out by the colony for a week or so (because the rare pollinators are likely to arrive at the crack of dawn to try to relieve their night starvation) and show us just how this anomalous species does get pollinated. Any volunteers?

Reference

1. Hatch ED the 3rd. Checklist of the New Zealand Orchids, together with a Key to the Genera and Species, and some Notes on their Distribution. *Tuatara* 1951. 4: 28-40. Also NZNOG Historic Series No. 3: 116

Final notice of the trip planned for 4 Jan 2010 to Arthur's Pass.

Looks to be a winner: if you are planning to join up with the group already going please advise the convenor Gordon Sylvester by 1 Dec 2009. The Arthur's Pass Outdoor Centre wants firm figures early in December. We will be the only group in attendance for that week, but they do not want to make up accommodation unnecessarily.

Costs are being kept to a bare minimum, as the travel costs will be high for some. Your early notification will also assist in the purchase of food from Christchurch. (While there is a general store in the village the mark-up is excessive. Hence taking in our own supplies).

Be prepared for Alpine conditions: it can, and does snow at any time of the year: the grass is always green.

Please email Gordon at southcol@xtra.co.nz, or phone 03 7369930; if he is not there please leave a message.

Captions for inside back cover

(The Column)

Fig. 24. *Diplodium alobulum* at Taipa, 2 August 2009 by Kevin Matthews. Note the white hairs on the inner margin of the column wings. The triggered labellum leaves only a small space for an insect to crawl through using the hairs for purchase thus ensuring glue from the rostellum wipes onto its back before contacting and dragging off the pollinia.

Fig. 25. *Diplodium alobulum* a mature specimen from the waterfall, Shenstone Block, Te Paki, 3 Sept 2000. Allan Ducker mistook this, understandably, for *D. brumale*. The Column has yet to see *D. brumale* anywhere in the far north but at the time he noted the Vee sinus and dubbed it *D.* "brumobulum" which is now dumped.

Fig. 26. *Plumatochilos tasmanicum* with window, showing no bug but a piece of its own pollinium where it has dropped onto the base of the stigma and effected fall-back self pollination. Both column wings show hairs at the tip, the remainder being obscured inside the wings.

Fig. 27. *Pterostylis australis* from Borland stream, 26 Jan 2004. Microscopic column wing hairs below the unfortunate fungus gnat may have been too small to give it purchase to break free from the rostellum glue sticking to pollinium gathered unwittingly from the previous flower visited.

Fig. 28. *Plumatochilos tasmanicum* Shenstone Block, Te Paki, 25 Oct 2001, shows spider debris in copious column wing hairs which are squeezed by the lateral petals thus blocking one of the pollinator's escape routes leaving only, through the column wings past the pollinia. The tiny insect on the left may be a red herring. It marred three of the Column's 3-D images as it clambered upwards expertly avoiding the cobwebs.

Fig. 29. *Pterostylis montana* sensu Moore by Ian St George, showing the column with one wing removed. Note the rostellum below the pollinia, hairs on the inner margin of the column wing, swollen heart shaped stigma having caught its own pollinium as it dropped.

See “The column”