

The New Zealand Native Orchid Journal

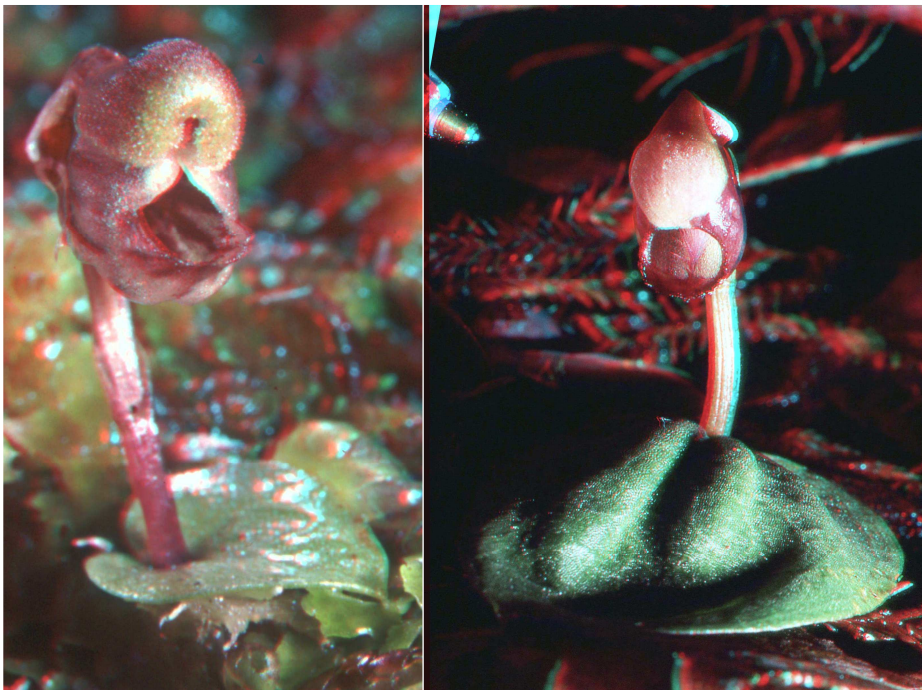


May 2016
No. 140

Orchids in 3D Eric Scanlen

Corybas carsei and *Corybas rotundifolius*

You will need anaglyph spectacles to view these: \$5 from the editor...



Bruce Irwin compared the two in *NZNOGJ* 1987; 23: 9,

Corybas carsei

Corybas rotundifolius

<p><i>Dorsal sepal:</i> apex deeply cleft & margins inturned.</p> <p>Midline thickened twds apex.</p> <p>More or less as long as labellum.</p> <p>Twds apex, outer surface minutely papillose.</p>	<p>Apex not cleft—obtuse to acute—often infolded over lat. lobes of labellum giving appearance of shallow sinus.</p> <p>Not so thickened</p> <p>Shorter than labellum on mature fls. May be = in bud.</p> <p>Apex not papillose.</p>
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<p><i>Labellum:</i> Midlobe & front margin of lat. lobes 2–3 x thicker than rest of labellum.</p> <p>This thicker area twds apex carries back-facing hairlike calli which end abruptly at the inner edge of the thickening and shorten towards apex. <i>Short appressed</i> backward facing calli also present along the raised midline of labellum nearly to column.</p> <p>Lateral lobes of labellum meet above to form a tube.</p> <p>apparently butted—<i>not</i> overlapped—easily separated.</p>	<p>No thickening noted.</p> <p><i>Long prominent</i> backward facing cilia only on raised midline of labellum, from near apex to about ¼ labellum length, where they end abruptly. Some fls may have a very few short cilia (or calli) close to nerves of midlobe.</p> <p>Lateral lobes distinctly overlapped to form a tube.</p> <p>Not easy to separate.</p>
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Original paper

NZ Orchid Key: a new smartphone app

By Murray Dawson, Landcare Research

Smartphones have rapidly become the device of choice for New Zealanders and the rest of the world. Their processing power, storage capacity, and portability have come of age, making it possible to run comprehensive productivity apps including identification tools. Uptake of this technology will continue to increase into the foreseeable future.

It is timely then that a powerful app for identifying native orchids is now available for smartphones and tablets from the Android Google Play Store (https://play.google.com/store/apps/details?id=com.lucidcentral.mobile.nz_orchid) and Apple's iTunes (<https://itunes.apple.com/us/app/nz-orchid-key/id1063192594?mt=8>).

This free app, called the NZ Orchid Key, is easy-to-use, has lots of colourful photographs, and covers a wide array of plant characters, including leaves, flowers, habitats, and distribution for identifying native orchids. In total, 43 characters and 212 character states were incorporated for identifying native orchids in the key. Users choose whichever characters in the app matches the orchid specimen they are identifying through a process of elimination. If a user needs help to understand what a particular character state means, they can bring up an explanation page for it.



Orchid Key icon, illustrating the mauve sun orchid (*Thelymitra malvina*).

Each species within the app is supported by a descriptive profile, providing all the information needed to verify the identification. Species profiles include links out to online resources on native orchids – Michael Pratt's original New Zealand Native Orchids website profiles (which were adapted for the app), and also New Zealand Plant Conservation Network (NZPCN) and Flora of NZ online pages.

However, the app itself is a self-contained download, so it can be used in the field without Internet access. Because of its completeness, the NZ Orchid Key also provides a comprehensive resource for learning about native orchids, which should appeal to the non-expert wanting to know more about this fascinating group of plants.

Development of the native orchid app

Murray Dawson of Landcare Research, Lincoln, led the project, in collaboration with the NZNOG.

Murray was interviewed on the native orchid app by Radio New Zealand Nine to Noon's host Kathryn Ryan on 18 December 2015. This interview can be heard on the RNZ website at www.radionz.co.nz/national/programmes/ninetoonoon/audio/201783381/app-for-identifying-endangered-native-orchids

Kathleen Stewart and Jenny Dent worked with Murray measuring characters from hundreds of herbarium specimens held at Lincoln and Auckland. These measurements filled gaps and supplemented characters available online and in published descriptions (see References).

Michael Pratt provided his species profiles to use within the app, sourced from the New Zealand Native Orchids website (<http://nativeorchids.co.nz>).

The remaining author of the NZ Orchid Key is Wellington-based botanist and photographer Jeremy Rolfe who contributed his high quality orchid images. As most readers will know, Jeremy has co-authored two books on native orchids with Peter de Lange, also of DoC (de Lange et al., 2007; Rolfe and de Lange, 2010).

Other images were crowd-sourced from members of the NZNOG and the Nature-Watch NZ orchid project (<http://naturewatch.org.nz/projects/new-zealand-native-orchids>). Thanks to the generosity of these contributors, the new app contains an amazing collection of more than 1,500 pictures that would have taken several lifetimes for one person to accumulate. This is a great example of what can be achieved through outreach, citizen science, and crowd-sourcing.

The NZ Orchid Key first became available as an app late November 2015 (for Android) and early December 2015 (iOS). It is part of a series of free interactive keys for identify-

ing New Zealand native and naturalised plants. Online versions are hosted by Landcare Research (www.landcareresearch.co.nz/resources/identification/plants), and the app work extends the accessibility of these online keys.

The NZ Orchid Key should raise public awareness of our treasured native orchids, and is a useful tool for those who need help in identifying them.

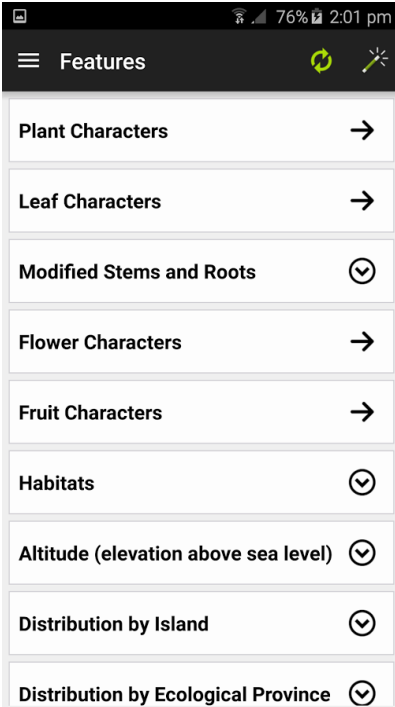
Acknowledgements

Funding for the NZ Orchid Key was provided by the New Zealand TFBIS (Terrestrial & Freshwater Biodiversity Information System) Programme.

Special thanks to NZNOG members Allan Ducker, Carlos Lehnebach, Mike Lusk, Eric Scanlen, Ian St George, Gordon Sylvester, and many others for providing images and advice throughout the project.



Start up screen



▲ Orchid key characters

References

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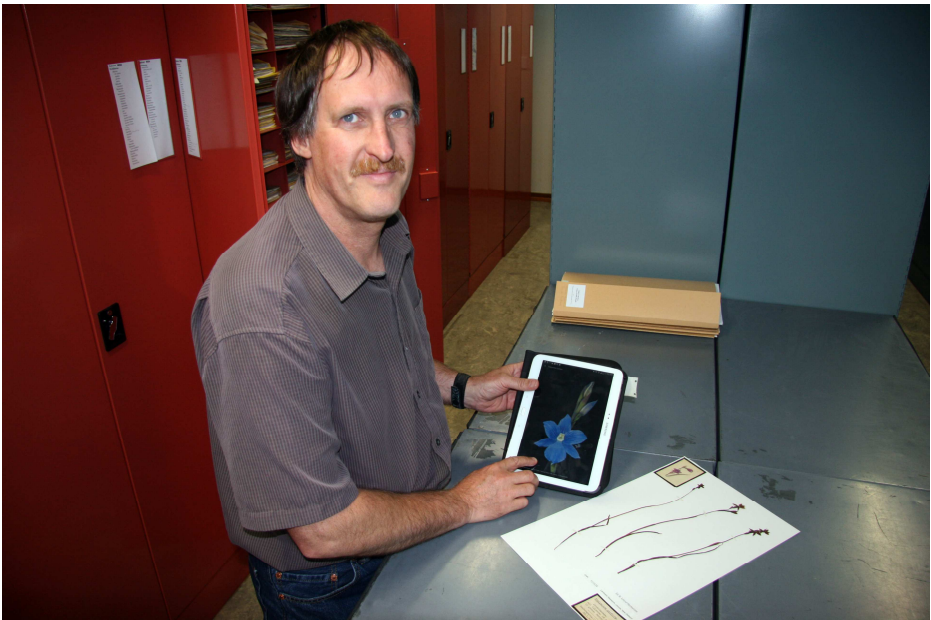
NatureWatch NZ New Zealand Native Orchids Project: <http://naturewatch.org.nz/projects/new-zealand-native-orchids>.

New Zealand Plant Conservation Network: www.nzpcn.org.nz.

New Zealand Native Orchids: <http://nativeorchids.co.nz>.

Ngā Tipu o Aotearoa – New Zealand Plants databases: <http://nzflora.landcareresearch.co.nz>.

▼ Murray Dawson, in the Allan Herbarium at Lincoln, demonstrating the NZ Orchid Key app. Alongside is a herbarium specimen of *Thelymitra cyanea* (striped sun orchid), one of many specimens that contributed measurements used within the app. Photo: Caroline King.



Pterostylis (Hymenochilus) tanypoda and *P. tristis* pollinator species

By Georgina Upson

Sciarid flies, black fungus gnats, appear to be the pollinators of *Pterostylis (Hymenochilus) tanypoda* and *tristis*. Male insects can be observed showing intense interest in the flowers and becoming entrapped by the sensitive labellums. In *Pt. tanypoda* a gnat has been observed in pseudocopulation with the forward facing process while another has been found with pollen attached to its thorax and the stigma it was adhered to confirming its ability to perform pollination services. Briefly, the “tanypoda” gnat is 1.4mm in length and has macrotrichia on the posterior wing veins. The “tristis” gnat on the other hand is 1.0mm in length without posterior macrotrichia and is clearly a different species. Compared with described N.Z. species of sciarid these are both small with only eight out of over fifty species being 1.5mm or less.

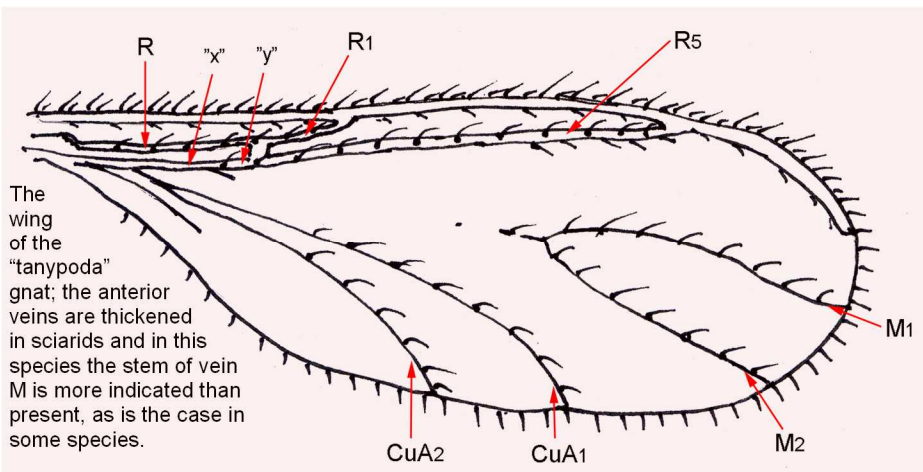
Because Sciaridae are rather uniform species identification relies on a number of small details; eg, the number of bristles on the scape of antennae, thorax or patterns of hairs and bristles on gonostyles (claspers) or the front tarsus (second leg segment). In other words slide mounted specimens under microscope examination are required for identification. Magnifications up to 400x are used. The woefully inadequate 80x magnification available to the author, while frustrating, does permit some progress toward establishing genus or species. By necessity this can only be regarded as a preliminary examination and is coupled with a desire not to damage the few delicate specimens that are available. The bristles and hairs important for identification can readily become dislodged.

In 1927 19 species of sciarid had been described (Tonnoir and Edwards¹), but in 1999

W. Mohrig and M. Jaschhof published a further paper on Sciarids² which raised the number of described species to over 50. This was achieved by examining most of the older specimens and from a large collection gathered by Jaschhof from around the North Island in 1992–3.

First consider “tanypoda” with its distinctive posterior wing macrotrichia. It has macrotrichia, dorsally, on all posterior wing veins plus ventral macrotrichia on R₅. It seems that it belongs in either the *Ctenosciara* or *Epidapus* genera. Mohrig and Jaschhof report that *Ctenosciara* are readily recognized by the presence of these posterior macrotrichia along with other features. The stable arrangement of these macrotrichia forms a good guide to species determination. Further a peculiarity of *Ctenosciara* is the presence of macrotrichia on the ventral side of R₅ and sometimes on the distal parts of veins R₁ and M which it shares only with some palaearctic species of *Trichosia*, *Leptosciarella* and *Epidapus*. There are 6 species described plus a further one unconfirmed all of which are recorded as 2.2–3.2mm in length.

Epidapus on the other hand lacks a definitive concept for the genus, because species attributed to this genus display differing features as more are found. “Almost all characteristics have had to be modified as shown by ‘usually’ in the genus characterisation”. This precedes almost all characters. N.Z. species have new and unusual characteristics. It was thought to be a young evolutionary group but with typical species found in Baltic amber dated 35 million years ago the genus is now regarded as old, with distinct relationships to the genera *Leptosciarella*, *Trichdapus* and *Ctenosciara*. There are four species, mostly



small, described in N.Z. only one of which has posterior wing macrotrichia *Epidapus Chaetovenosus*. It also has ventral macrotrichia on R_5 . Due to the presence of these dorsal macrotrichia and the shape of the gonostyles Mohrig and Jaschhof consider this species to be a "living missing link" in these phylogenetic relationships. With poorly defined characteristics and the "new and unusual" nature of the New Zealand members of this genus ascertaining whether a gnat should belong there could pose challenges.

The "tanypoda" gnat; 1.4mm in length, has posterior wing macrotrichia dorsally on the whole of M_1 and M_2 , The distal $\frac{2}{3}$ of CuA_1 and CuA_2 and R_5 including "y" but excluding "x". It has ventral macrotrichia on R_5 in the the distal third. The wing vein proportions show $R_1 \frac{1}{2} R$, a short R_5 and "y" appears shorter than "x" which seems more akin to *Epidapus* species.


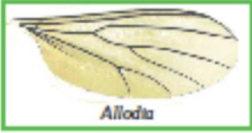




Epidapus Chaetovenosus: 1.5mm in length, has posterior wing macrotrichia on the distal half of M_1 and M_2 , The distal $\frac{1}{4}$ of CuA_1 and R_5 excluding "x" and "y". It is without Macrotrichia on CuA_2 . It has ventral macrotrichia on R_5 in the distal third. Of the wing vein proportions R_1 unequal to R ; "y" = "x".

Ctenosciara rufulenta (form a) 2.2–3.2mm in length, has posterior wing macrotrichia on

whole of M_1 and M_2 , the distal $\frac{2}{3}$ of CuA_1 and CuA_2 and R_5 including "y" excluding "x". It has ventral macrotrichia on most of the length of R_5 . It has wing vein proportions $R_1 \frac{2}{3} R$. "y" = "x".

E. chaetovenosus was described from two specimens one each from Mt Egmont and Tongariro National Parks. Palpi of *E. chaetovenosus*, while three segmented are shortened with the basal segment swollen and the third very reduced. The palpi of "tanypoda" have a longer third section or more "normal" proportion. Unless these prove to be an extremely variable species the large difference in macrotrichia arrangement and vein proportion alone would seem to exclude this species as the identity of "tanypoda".

Ctenosciara seems to be the only other described N.Z. genus that "tanypoda" may belong in. Of these only *Ctenosciara rufulenta* has wing macrotrichia that approach those of "tanypoda" This is said to be a stable feature in this genus. "Tanypoda" differs in this respect from *C. rufulenta form a* only in R_5 having only the distal third with ventral macrotrichia however additionally veins R_1 and R_5 are shorter and "y" appears shorter than "x". Mohrig and Jaschhof have described and illustrated three forms of *C. rufulenta* that show minor differences noting that there are many transitional specimens. They believe

Pterostylis Fungus-gnats		
Superfamily Scarioidea – Fungus Gnats		
Family Mycetophilidae – Fungus-gnats		
Genus Leia		
1	sp 1	Pterostylis ftschii
		Pterostylis pedunculata
2	sp 2	Pterostylis atrans
3	sp 3	Pterostylis baptistii
4	sp 4	Pterostylis laza
Genus Allodia		
5	sp 1	Pterostylis diminuta
Genus Mycetophila		
6	sp 1	Pterostylis obtusa
7	sp 2	Pterostylis alaeata
8	sp 3	Pterostylis grandiflora
9	sp 4	Pterostylis pedoglossa
10	sp 5	Pterostylis alata
11	sp 6	Pterostylis cocinea
12	sp 7	Pterostylis tunstallii
Genus Mycomya		
13	sp 1	Pterostylis smaragdina
14	sp 2	Pterostylis acuminata
		Pterostylis Xaenigma
		Pterostylis cucullata
		Pterostylis nutans
		Pterostylis falcata
		Pterostylis Xingens
		Pterostylis oreophila
15	sp 3	Pterostylis curta
16	sp 4	Pterostylis monticola
17	sp 5	Pterostylis alpina
18	sp 6	Pterostylis sanguinea
19	sp 7	Pterostylis chlorogramma
20	sp 8	Pterostylis smaragdina var. prasina
		Pterostylis smaragdina var. rubrirostrata
21-22	sp 9 & 10	Pterostylis melagramma
23	sp 11	Pterostylis crassa
24	sp 12	Pterostylis lustra
Genus Orfelia		
25	sp 1	Pterostylis basaltica
		Pterostylis biseta
		Pterostylis cheraphila
		Pterostylis maxima
		Pterostylis ualida aff.
26	sp 2	Pterostylis boormanii
		Pterostylis setifera
27	sp 3	Pterostylis rufa
28	sp 4	Pterostylis pusilla
29	sp 5	Pterostylis despectans
Family Sciaridae – Dark-winged Fungus-gnats		
30	Genus? sp 1	Pterostylis nana
31	Genus? sp 2	Pterostylis alaeata
32	Genus? sp 3	Pterostylis concinna
33	Genus? sp 4	Pterostylis dolichocheila
34	Genus? sp 5	Pterostylis robusta
35	Genus? sp 6	Pterostylis mutica
36	Genus? sp 7	Pterostylis cygnocephala
37	Trichostia sp 1	Pterostylis decurva

Principal wing venation of genera, produced from photographs of Victorian species, with the main veins highlighted in black.



A female fungus-gnat. Females have much thicker abdomens than males.

Members of Mycetophilidae and Sciaridae were observed on *A. caudatus*, *A. collinus* and *A. pusillus*. Of the Mycetophilidae, *Leia*, *Mycetophila*, *Orfelia* and *Sciophila* both sexes were on the labellum as potential pollinators. Sciaridae were not identified, but few would be a potential pollinator.

Page 177 from Rudie Kuitert's *Orchid pollinators of Victoria*, reproduced with permission. The Sciaridae seem to be the pollinators of similar species *Pp. cygnocephala* and *mutica*.

that they are a single species perhaps in the process of differentiation. Mentioned is a single specimen of *form d* with no information provided, the identity of which they are uncertain. There is an unconfirmed *C. xanthonota* described by Tonnoir and Edwards from a single female which closely resembles *C. rufulenta* but has macrotrichia on the wing membrane at the tip of the wing which they were unable to connect with any males. This was stated to be 3mm in length. Differences in the wing morphology along with the rather large size differential between these and “tanypoda” does not seem to support their being of the same species. No species of the genera *Trichosia* or *Leptosciarella* that share ventral macrotrichia have been described in N.Z. It therefore seems probable that this is an undescribed species of *Ctenosciara* or *Epidapus*.

There is only one described species of N.Z. Sciaridae of the same diminutive 1mm size as the “tristis” gnat. This is *Epidapus parvus*. *Epidapus parvus* has palpi with only a single section and short narrowed gonostyles. “Tristis” has at least two sections to the palpi and has strikingly long, hooked rear facing gonostyles. Apparently this *Epidapus* is not the identity of “tristis”. The most likely genus seems to be *Corynoptera*. This genus has a somewhat chequered history. At one time the type species was placed in *Epidapus* then *Lycoria* but was reinstated in 1960 despite the type specimen’s apparent demise during WW2. A syntype has been found to confirm the genus concept. This is a large genus that has been divided into groups. This gnat appears to possess an apical tooth on the gonostyle which would place it in the nigrohalteralis or ancylospina groups. The ancylospina group seem to have primarily short broad relatively straight gonostyles. The nigrohalteralis group on the other hand have “excavated” gonostyles, mostly “weak” on the inner side which give a curved appearance. This group also has a high proportion of small species. The closest to “tristis” in this respect is *Corynoptera facticia* although even that does not appear to have the greater

than 90 degree hook that “tristis” appears to possess in the gonostyle distal half. The wing vein R₁ is very short in “tristis” only 1/3R whereas in *C. facticia* R₁ is 2/3R. The eye-bridge of *C. facticia* is 2–3 facets wide while “tristis” appears 1–2. These and other features cannot be properly ascertained without higher magnification however *C. facticia* does not appear to be an identity for “tristis” and is larger at 1.4mm long. The author is uncertain as to the genus of “tristis” but there does not appear to be any already described N.Z. species it can be attributed to.

Of interest is that Mohrig and Jaschhof completed their study with specimens collected only from the North Island apart from the few already known species. *Pt. tanypoda* is absent from the North Island. *Pt. tristis* has only been found twice, by Hill in 1885 and much later by Druce both on the eastern side of Ruahine Range. Irruptions from southerly storms that travel up the east coast of New Zealand may account for these. Perhaps they have failed to establish permanently owing to the absence of pollinators. Given that most *Corybas* (*Nematoceras*) are pollinated by species of the same genus is this also likely to be the case here?

Definitions

Palpi; Antennae like appendages surrounding the mouth parts.

Gonostyles: Part of the genital complex that are hinged and act to hold the female during copulation.

Macrotrichia: in Diptera the larger microscopic hairs on the surface of the wings.

Eyebridge; The facets that form the eyes extend across above the antennae to touch, or nearly so, each other forming a bridge.

“x” The distance from the stem of M to the joint with CuA.

“y” The distance from the crossvein to the stem of M.

References

1. Tonnoir and Edwards; New Zealand fungus gnats (Diptera, Mycetophilidae), Transactions R.S.N.Z.,Pg 747-878. (1927)
2. Mohrig and Jaschhof; Sciarid flies (Diptera, Sciaridae) of New Zealand, Studia Dipterologica supplement7 (1999)

The type locality Ian St George

Kumeroa and *Bolbophyllum ichthyostomum* Col.

Dusky Sound and *Bolbophyllum pygmaeum* (Sm.) Lindl.

In 1893 William Colenso described *Bolbophyllum ichthyostomum* from a specimen Henry Hill sent to him from Kumeroa in Central Hawke's Bay. Hill had succeeded Colenso as Inspector of Schools and, like Colenso, collected specimens on his school rounds—and would send them to Colenso.

B. ichthyostomum, sp. nov.

Plant small, epiphytal, prostrate, creeping, densely matted. Stems slender, 3in.–5in. long, tortuous, dry, whitish, longitudinally striate, emitting many thickish terete succulent white rootlets, their tips obtuse. Pseudobulbs on upper side of stems $\frac{1}{2}$ in.– $\frac{1}{2}$ in. apart, sessile, ovoid, $\frac{1}{6}$ in. long and subglobose, $\frac{1}{10}$ in. diameter, wrinkled, glabrous, shining, pale-green. Leaves, 1 to each bulb at top, with a narrow circular sheath at base, oblong and oblong-ovate (sometimes oblong-lanceolate), tip obtuse, sometimes slightly retuse, $1\frac{1}{2}$ –2 lines long, deeply sulcate, thickish, slightly recurved, minutely and regularly rough-dotted-hairy above, and with minute microscopical circular dots below, obsoletely parallel-nerved, 3 nerves on each side of midrib visible between the eye and light; margins closely ciliolate with coarse, stiff, patent, obtuse hairs, petiole; petioles short, $\frac{1}{20}$ in. long, stout, glabrous. Flowers very small, few, solitary, scattered, white; peduncle arising from under bulb, stout, erect, 2 lines long, with a simple sheathing scarious bract near the top; perianth (*post anthesin*) adhering to tip of upper valve of ovary (marcescent), expanded about 1 line diameter; sepals and petals ovate-deltoid obtuse, silvery-shining, very membranous; ovary large, subobovoid, gibbous, 2 lines long, yellow, thickly glandular-echinate (as, also, top of peduncle above bract), bi-

valved; valves gaping, but not to base largely concave, dissimilar, broad, $\frac{1}{10}$ in. diameter, obtuse; margins undulate uneven, thickened; the upper and larger valve with 2 lateral nerves; the lower 1 central one. Seeds very minute, sub-fusiform, thin, white, scarious.

Hab. On trunks of trees, forest near Kumeroa, River Manawatu, County of Waipawa; May, 1893: *Mr. H. Hill*.

Obs. I. This interesting little plant is allied to *B. pygmaeum*, Lindl., which *prima facie* it closely resembles, differing largely, however, on close examination, particularly in its glandular-echinate ovary and leaf. It is also a still smaller species. The ripe capsule gaping so curiously at its sutures, somewhat resembling the open mouth of a fish, is the cause of its specific name.

II. Although I received a large patch, or mat, of the plant (about 4in.–5in. each way), I only detected 6–7 pale-yellow capsules, all alike in size and form, and broadly gaping, and each bearing its minute withered flower, the plant being long past flowering, so that all allowance must be made for the imperfect description of the perianth. The microscopic seeds were also plentifully shed, scattered like dust over the neighbouring plants. Perfect flowers are much desired. [1]

The specimen is in Herb. Colenso at Te Papa, labelled in Colenso's writing, "Hill's *Bolbophyllum*".

But in 1906 Cheeseman would write, "I do not see upon what grounds Mr. Colenso has separated his *B. ichthyostomum*. The type specimens in his herbarium appear to me to be typical *B. pygmaeum*. [2] Every botanist since then has agreed.

Banks and Solander had collected the plant at Mercury Bay (**Fig.1, 2**), but it was not until 1808 that JE Smith described it as *Dendrobium pygmaeum*, from a specimen collected at Dusky Sound by Archibald Menzies, surgeon on the *Vancouver* expedition which called there briefly in 1791 (**Fig.3**), *D. pygmaeum*. Stem creeping, bulbiferous. Leaves nearly sessile, elliptical, downy, coriaceous, solitary from each bulb. Clusters.... Gathered on mossy rocks and trees in New Zealand, by Mr. Archibald Menzies, F.L.S. This is but half the size of the last, with which it agrees so nearly in habit, that though its flowers are unknown, we scruple not to refer it hither. *Stems* thread-shaped, slender. *Leaves* alternate, on very short footstalks, elliptical, obtuse, revolute, coriaceous rather than fleshy; ribbed and roughish beneath; clothed above with short, prominent,

downy hairs. Each footstalk proceeds from a little round bulb, like a ring, smooth and shining, yellowish. and much wrinkled in a dry state, but apparently very succulent when fresh. [3]

In 1830 John Lindley referred it to *Bulbophyllum*, with a brief description copied from Smith. [4]

Although from an early period Colenso had “most of Lindley’s & Hooker’s works, (Colenso to Gunn 18 Jan 1848) he probably had not read Smith’s description, and certainly had not seen the Dusky Sound specimen.

He may have relied on JD Hooker’s *Flora Novae Zelandiae* description of *Bulbophyllum pygmaeum*, in which he described the leaf neither as downy nor echinate, and the ovary and perianth only as slightly pilose (hairy).



Fig.1 Sydney Parkinson made this sketch of *Bulbophyllum pygmaeum* collected by Banks and Solander at Mercury Bay.



Fig.2 Frederick Polydore Nodder’s finished engraving, from Parkinson’s sketch and the specimen.



Fig.3 Archibald Menzies’s specimen from Dusky Sound, in the JE Smith Herbarium of the Lindley Herbarium.

By 1883 Colenso had access to Dr Isaac Spencer's compound binocular microscope [J135] and he concluded that the "glandular-echinate* ovary and leaf" he was now observing must be features of a new species and set about describing it.

He had written earlier of *Earina alba*: "It possesses, however, sundry characters which that species (*E. autumnalis*) has not, or which, at all events, are not given in any published description of it that I have seen". [6] There is a circularity here.



Above: Fig.4: Echinata: the dehiscent capsule scattering seeds and showing the reason for Colenso's "fish-mouth" name.

Below: Fig.5: on scrub at Martin's Bay, Fiordland.



Those who first described a plant of course omitted details that seemed insignificant to them but which did become important to later botanists trying to differentiate similar taxa. For those later botanists to split off a new species, on the basis of characters that the early botanists simply didn't mention in the original description, seems at best unwise.

Hill's *Bulbophyllum* is the same as the others.

Colenso's observation, "The ripe capsule gaping so curiously at its sutures, somewhat resembling the open mouth of a fish, is the cause of its specific name" led Bruce Irwin to note that though the 6-lobed capsules of most orchids split open along three suture-lines, in *Bulbophyllum* only two of the sutures split (**Fig.4**), leaving a 4-lobed roof over the precious seed.

In 2002 Jones, Clements and Molloy raised the new monotypic genus *Ichthyostomum*, thus preserving Colenso's epithet, [5] but *Bulbophyllum* is now preferred.

Thirty years ago a group of us walked up the Spey river and down the Seaforth to the upper reaches of Dusky Sound. I didn't see any *Bulbophyllum* (I wasn't looking for it in those days)

* Echinata: prickly.
Coriaceous: leathery

—but later I did see it a little to the north, on a Labour Weekend whitebaiting trip to Martin’s Bay, on scrub by the McKerrow river (Fig.5). Much later still, I finally caught it flowering near Wellington (Fig.6).

Fig.7 shows the leaf.

At Kumeroa, Colenso’s type locality, 13km east of Woodville, a walking track now passes through 28 hectares of virgin native podocarp forest. This is Awapikopiko Reserve. We visited on 7 December 2013, but we could find no *Bulbophyllum* there.

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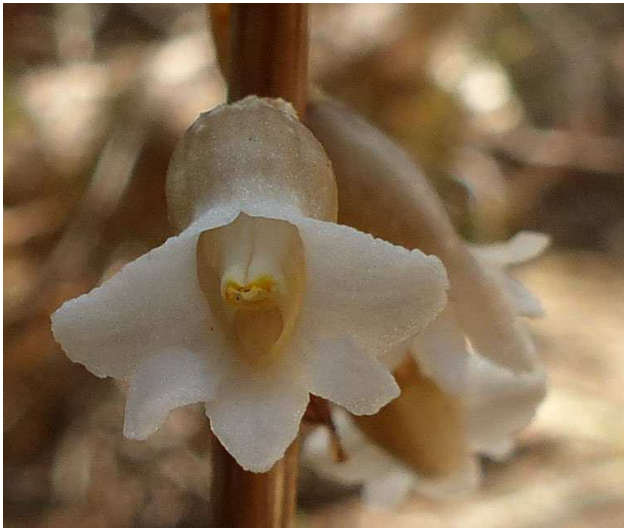
Above Fig.6: Echinate (prickly)—the flower.

Below Fig.7: Coriaceous, downy, pilose, echinate, glandular (leathery, furry, hairy, prickly, lumpy)—the leaf of *Bulbophyllum pygmaeum* has all of those qualities.



Notes...

CHERYL DAWSON photographed this 65cm *Gastrodia sesamoides* at Akitio on 28 December.



PAT ENRIGHT photographed *Microtis oligantha* on Mt Kaukau, Wellington, on 29 December.



BRIAN TYLER took these at the Ohakune Police station on 30 December: “if the first (1) is *Thelymitra* ‘Whakapapa’, what would we call the other two?” (2 & 3)



I had only seen these narrow oblong tepals on *Thelymitra cyanea* (4) but found similar *T. longifolia* in the Aorangis in December (5): I thought these had been damaged by thrips—Ed.

The destruction of orchids and other NZ wildlife

In 1847 The Earl of Derby wrote to William Colenso, asking him to collect living NZ birds for the Earl's aviaries at Knowsley; Colenso replied in January 1848 (the letter has survived among the Earl's papers in the Liverpool Record Office), apologising for his inability to do as the Earl wished, partly because of the near-extinction of many of the New Zealand birds by fire, pigs, cats, dogs and rats. He concluded by writing that it was not just birds that had been brought close to extinction, but,

The orders *Reptilia*, and *Mollusca*, have also suffered greatly: animals of the former order, of the *Saurian*¹ Family, literally swarmed throughout the Island; but now many of the larger genera are all but extinct, through the continual inroads of their adversaries—Pigs & Cats. And of the *Mollusca*—particularly the Families *Pulmonea*,² *Cardiacea*,³ and *Inclusa*⁴—several genera are becoming exceedingly scarce. For, not only have the Land and Fresh-water species been diligently and constantly consumed, but daily and nightly upon the ebbing of every tide, droves of pigs frequent the sandy shores in search of their wanted supply. I have often been astonished by the sagacity displayed by this mammal, as well as at the strength of its jaws in crushing with ease the thickest shells, apparently quite free from pain or inconvenience in its tongue and mouth, although continually filled with sharp fragments and laminæ of broken shell.—So, again, in the Vegetable Kingdom; several *Orchideous* and other plants having edible roots, and which formerly grew so very plentifully as to afford food for man, are now all but entirely lost—their roots having been eagerly sought after by the innumerable herds of wild pigs which infest the whole extent of the Country; while other smaller plants, which grew upon the surface of the soil, have also, if not quite disappeared, become exceedingly scarce....

1. Lizards; 2. Land snails; 3. Cockles and related molluscs; 4. Bivalve molluscs (pipi, toheroa, mussels, tuatua).

The New Zealand Native Orchid Journal

The main aim of the **New Zealand Native Orchid Group** is informing people about native orchids, so we permit others to copy material published here, provided the source and author are acknowledged. Authors should note this as a condition of acceptance of their work. We will submit papers by authors seeking formal publication in line with the International Code of Nomenclature to two peers. The *Journal* is published quarterly from February, and deadline for copy is the first of the month beforehand. We like copy to be typed or sent on disk or by email.

Chair: David McConachie, 42 Titiro Moana Rd, Korokoro, Lower Hutt, pleione@orcon.net.nz.

Secretary: Pam Shearer, 7 Ring Terrace, St Marys Bay, Auckland. pam@insidetrack.co.nz.

Treasurer: Judith Tyler, 4 Byrd St, Levin, bandj.tyler@xtra.co.nz.

Books and publications: Brian Tyler, 4 Byrd St, Levin, bandj.tyler@xtra.co.nz.

Webmaster: Michael Pratt, www.nativeorchids.co.nz, Michael@nativeorchids.co.nz.

The website posts journals six months after original publication.

Editor: Ian St George, 32 Hawkestone St, Thorndon, Wellington 6011 istge@yahoo.co.nz.

THE EDITOR and EDITORIAL BOARD AND MAY NOT SHARE AUTHORS' OPINIONS.

IN LATE JANUARY **MIKE LUSK** “Had a look at the top to the limestone cliffs (approx 970m asl) on the range just west of the upper end of the Boundary Stream Reserve. There's a narrow strip of coarse pasture, then a mix of *Hieracium* and natives on the very exposed cliff edge. There are many *Microtis* plants scattered about in the thin soil, some of which are fairly typical the small *M. unifolia* and others which pass pretty well for *M. oligantha*. Many however have features of both, with more up to 12 flowers, variably curled lateral sepals and many with the tilt of flower on ovary seen in *M. oligantha*. I'm wondering if they could be hybrids. I've seen similar plants at a higher alt in the Ruahine Ra but when I visited them last week they were only just out of the ground. I'll be back to look at them in a month or so.”



Pterostylis oliveri
and *P. areolata*.
A transparency dated December 1991, taken at Jagged Stream in the upper Rakaia valley on the north eastern side of the Arrowsmith Range, by **DON GEDDES**.

CHERYL DAWSON sent these photographs of *Earina aestivalis* with remarkably narrow tepals, taken in the Manawatu Gorge on 1 February 2016.



MARK THESE DATES IN YOUR DIARY NOW: AGM & FIELD DAYS 2016

Mark Moorhouse writes, “Date is set at 18–20 November. AGM will be held at the Picton Yacht Club rooms just around the corner from the Marina. A catered meal will be provided. A number of units at the Waikawa Bay Holiday Park have been booked tentatively for Friday and Saturday nights, three are self contained and sleep 4. Some basic cabins have also been booked. At present any of these can be extended another night. There is any amount of Motel accommodation available at present in Picton for those who wish to book other accommodation privately.

“A minibus will be hired to ferry passengers to and from terminals, and for field trips. If flying, a vehicle can be arranged to meet you. Even one other person bringing a car to the venue should then provide close to enough seats for field trips.

“I think at present our meeting point will be the Waikawa Marina Holiday Park for get together unless numbers coming exceed our expectations. Then I may have to revisit this. Gathering venue remains open to ideas and suggestions.

“Field trips will include a visit to the Whites Bay/ Mt Robertson area on one day. There are a number of other options which only assessment shortly before the meet will decide which is going to be most productive. Partly walk the Queen Charlotte walkway, explore one of the valleys on the West Bank Wairau like Pine Valley or the Waikakaho.

“If Marlborough members or others with knowledge of the area have better suggestions for field trips please forward them to Mark Moorhouse.
memopob@yahoo.com.au.”

LETTER TO THE EDITOR...

Nice rant at the tag names issue in your editorial in the latest journal. Perhaps the most important part of establishing a tag name should be to relate it to existing formal names (and tag names) so that it can be readily identified by anyone other than the original proposer. Just attaching a tag name to a photo is usually insufficient to make this possible, but linking it to an existing taxon (a taxonomic unit, not necessarily a species) with “similar to ..., but ...” begins to frame another person’s perspective. This is the traditional technique used in type descriptions for plants.

Size is often difficult to judge, a *Pterostylis* aff. *montana* can look like a *P.* aff. *graminea* in a photo. *Corybas rivularis* has too often been used as a comparator (*C.* aff. *rivularis*) because of a similar leaf shape and habitat when a more useful comparator might be *C. hatchii* or *C. papa* (eg for *C.* “Kaimai”). Hence I feel the first step is actually to associate the tag name with a formal name and initially treat it as part of the variation of that taxon or perhaps even as part of what appears to be a hybrid group. If you do that you begin to see that a few species are the source of a lot of our current tag names and as such identify areas in desperate need of study. *C. trilobus* seems a particular case in point. A similar situation exists I think with *Thelymitra pauciflora*.

If we look at the NZ orchids as a whole the majority of the species seem quite clear cut with some well recognised variation (eg. single leaved forms of *Aporostylis bifolia*). A few can almost be regarded as very variable containing several incipient species some of which may need formal recognition but some we may just need to accept as very variable. This is a not uncommon situation in the flora. I could give quite a few examples but a good one is *Coprosma colensoi* which has two distinct forms usually found growing together, one with very narrow leaves, the other with ovate leaves (and sometimes a range of forms between). Another example is *C. rhamnoides* (formerly called *C. polymorpha* with good reason!).

GRAEME JANE

BELONGING TO THE NZNOG MIGHT EXPOSE YOU TO ORCHID FRAGRANCES & UPGRADE ONE OF YOUR CHAKRAS to facilitate a quantum shift to cosmic awareness!

I bet you didn't know that.

Have you looked at <http://www.firstlightfloweressences.co.nz/store/catalogsearch/result/?q=orchid>?

Or do you, like me, think this is a load of unmitigated rubbish that takes advantage of the very gullible among us, and quite possibly uses NZ orchids illegally? How is it even remotely possible that this organisation can claim to have received a “New Zealand Health Industry Distinguished Service Award”?

Editorial Ian St George

1. Are you ready for focus stacking?

Four ways of putting images together for an interesting outcome are cheap and easy in this wonderful digital age...

1. **Time lapse.** If your camera has an electronic cable release input you can buy an “intervalometer” that instructs it to take shots at regular intervals. Freeware such as “Virtual Dub” stitches the images into a movie. Take a look at <http://www.aos.org/default.aspx?id=579> for good instructions. Take a look at <http://twistedifter.com/videos/flowers-in-bloom-timelapse/> for a wonderful result. Some of us should be looking at NZ orchids like this. I suspect changes in the shape of *Orthoceras* over time will be interesting; I suspect the way *Corybas* emerges from the ground and unfurls will be equally so. But there is scope for beautiful art here too.

2. **Exposure stacking.** You can look at an evening landscape and admire the cloud formations and the foreground. But your eye is infinitely better than your camera, which, depending on your exposure, either burns out the clouds or leaves the foreground dark and amorphous. Now you can take a bracket of different exposures—stopped down for the clouds, opened a bit for the middle ground and opened wider for the foreground. Load the images into your computer and activate a software package like “easyHDR” and the outcome will be as you had seen it with your own eyes. I don’t know of any freeware and this will have limited application in orchid photography.

3. **Panoramas.** “Microsoft ICE” stitches overlapping images together to create great panoramic shots or to create huge high reso-

lution shots. I have seen a Wellington sunset photograph by Werner Kaffl, made up of 80 overlapping hi-res shots that he could blow up to 10 metres wide, and retain perfect clarity. Limited orchid application.

4. **Focus stacking.** Now this is easy and is a perfect application for orchid macrophotography because it allows for huge depth of field, providing for close-ups that are perfectly in focus from front to back (just take a look at some of the extraordinary results by googling “focus stacking”) in “images”.

My current lens stops down to f32 and gives me quite good depth of field when I try to picture my 1m rule, but the exposure was 5 seconds and light diffuses through such a small aperture and creates softness (Fig. 1). The best aperture for this lens is f9 (ie, gives sharpest images), but that gives very limited depth of field (Fig. 2a). But if I take several shots, moving the camera or the focus ring for each in steps from sharp foreground to sharp background (Figs 2a–c), software such as the free “CombineZP”





Figs 2, 3: The computed image (Fig.3 at right) could have been improved further by stacking more than the three shots (Figs 2a-c) actually used.

can “stack” them to produce a final image (Fig.3) that is sharper, front to back, than even the f32 shot. The more shots you take, the better the final result. The more shots you take and the higher the resolution, the slower the stacking process as the software churns through its different tasks. There are plenty of online tutorials if you are having difficulties.

Another situation where I would like to try it is the orchid-in-the-foreground-and-habitat-in-the-background shot, like that at right, or a montane species with a mountain. How good would that look, all in perfect focus?

It requires a calm day (or indoors), a tripod, manual settings, a cable-release.

Cheating? It’s an interesting philosophical question, but when did art reject a new technique? Certainly science should not.



2. Do you think colour matters?

Lucy Moore used to say that the colours of orchid flowers are unimportant in differentiating one species from another but now we are not so sure: some entities seem to be consistent in their colour—consistently different from otherwise similar plants. Perhaps colour is important.

The trouble is, we may perceive and name colours purely subjectively; for some turquoise shades I see blue when others see green.

Eric Scanlen relates an incident:

“Some years ago I was showing 3-D orchids in true colour to an audience in New Plymouth. One *Thelymitra aemula*, I think, I said was blue (there were purplish traces therein) and a lady in the audience spoke up and said it was not blue, it was mauve. So we had a show of hands who thought it was blue—and only guys put their hands up—and who thought it was mauve and all the women plus art teacher Bruce Irwin, put their hands up. There was a long silence so I just went on with the slide show and ever since then, wondered what was going on.”

Me too; and it seems to me we should try to be objective, to standardise our reporting of orchid colour, if we do think it important. So I broached the subject of trying to standardise colour reporting in nznog@yahoo.com.

Bill Liddy told us there is a standard colour chart used by most orchid groups world wide—the Royal Horticultural Society (RHS) colour chart, but that it is very expensive (It really is—£199 was the cheapest I could find). Most judging groups in NZ therefore use the Stanley Gibbons Stamp Colour Key. “There are a few (orchid) colours that are outside the (chart) colours but it gives you a good idea.”

Cheryl Dawson pointed out one on Trade Me: “buy now” for \$60.

On EBay the cheapest new ones (from the UK) were \$35.

That seems a lot, but you cant use your computer screen because different screens interpret colour differently (yes, they *are* getting more like us).



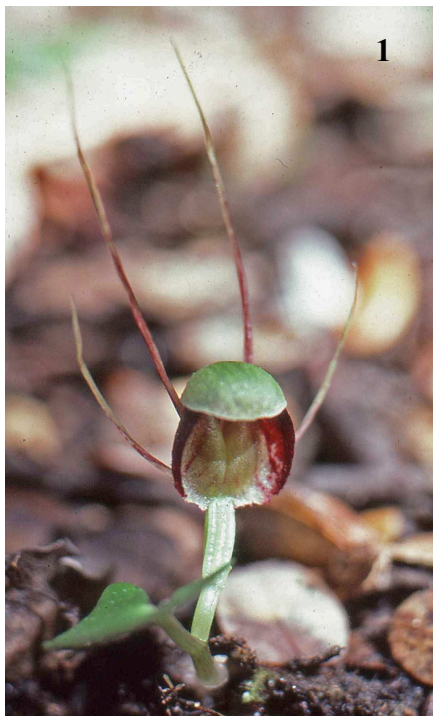
The Column Eric Scanlen

The *Corybas* “pygmy” roundup 2016

Graeme Jane and Gael Donaghy first coined “pygmy”, due to its small size, with their find of *Corybas* “pygmy sandhills” from Wharariki and Farewell Spit, reported in J73:11, Dec. 1999. Its unusual trait of flowering on almost all of the small leaved plants, in June/July, then producing masses of non-flowered, larger leaved plants, from August to November, aligned it with two other *C.* “pygmy” forms known at the time. They were Dan Hatch’s “*Corybas trilobus*” plants in the Waitakeres, (N/L 7:3 & [1]) and Ian St George’s June 1988 Queenstown specimen, **Figs. 1 & 13**, also labelled *C. trilobus*, from Five Mile Creek (J28:10,11) flowering amongst the icicles.

NB, the unique defining traits of *C.* “pygmy” are here underlined.

Bruce Irwin drew from a specimen that Graeme collected on 11 June 1999, and noted, by the J73:12, drawing, that the labellum had no “drainage channel”. This channel’s outlet shows as a narrow slit, mid lower labellum, in all self-respecting *C. trilobus* aggregate flowers, but not in any of the *C.* “pygmy” group. The Column has checked all available illustrations, including his sectioned *C.* “pygmy 1” (**Fig. 2**) from Matakawau. None of them show the usual drainage channel outlet, but the sectioned specimen does show the egg pocket, of J98:34 fame, common to *C. trilobus* agg., yet with no drain outlet. *C. cheesemanii* and the *C. macranthus* agg. are also known to have similar undrained egg pockets.



Curiously, Colenso's *C. hypogaeus* also lacks the drainage channel and shares another trait with *C.* "pygmy" group, i.e. the node is either close to, or inside, the sheathing bract. However *C. hypogaeus*, **Fig. 3**, flowers much later, in Sept/Oct. so could not be included in the *C.* "pygmy" group, could it? Other *C. trilobus* taxa lacking the drain outlet, are the July flowering *C.* "trijuly" **Fig. 4**, and August flowering *C.* "tridodd", **Fig. 5**, both from the Awhitu Peninsula and southern Waitakeres, with nodes well above their sheathing bracts.



Graeme and Gael's first mention of their *C.* "pygmy sandhills", (J69:11, Dec 1998), prior to tagging, mentioned the flower above the leaf, later to be overtopped by it. Bruce also noted this in J73:12 and Brian Tyler's pix of *C.* "pygmy 5", confirm it for that taxon. This trait may be for those two taxa alone. Gael's colour photo of *C.* "pygmy sandhills", labelled *C. trilobus*, in which both the level rimmed dorsal sepal and leaf shape, aligned it with Ian's **Figs. 1 & 13**, from Queenstown, and with his drawing-from-photo in J28, lower p.11, although differing somewhat from his upper p.11 drawing of another specimen.

Below are the Column's *C.* "pygmy" tags, adding to the J89:24,25 listing, with apologies to Graeme Jane for extending the use of his tag. Colours given are from Stanley Gibbon's STAMP COLOUR KEY.



1, Dan Hatch's *C. trilobus* **Fig. 6**, from the far north to Levin, got *C. "pygmy 1"*, being the first described, in some detail, by Dan, in Ref. 1, 1959 and NZNOG Newsletter 7:3, Sept 1983.

2, Allan Ducker's *C. "pygmy 2"* **Fig. 7**, from near Bream Tail Reserve, 17 July 1999, with its spherical, "rose-carmine" dorsal sepal and labellum sides, was growing amid *C. "pygmy 1"* but was solitary and has since been elusive.

3, Geoff Stacey's *C. "pygmy 3"* **Fig. 8**, from his Matingarahi orchid garden, also from Rangitoto Island Maureen Young [2], Cape Kidnappers, Mike Lusk and Wharariki Gorge, Georgina Upson.

4, Graeme Jane's and Gael Donaghy's *C. "pygmy sandhills"* from Northwest Nelson, J73:11, has few pix available but, may be the same as;

5, Ian St George's *C. "pygmy 4"* **Fig. 1** from Five Mile Ck, Queenstown (J28:10,11), for similar leaves and the flower having a level rimmed dorsal sepal. Note the tall seed peduncles in **Fig. 13**.

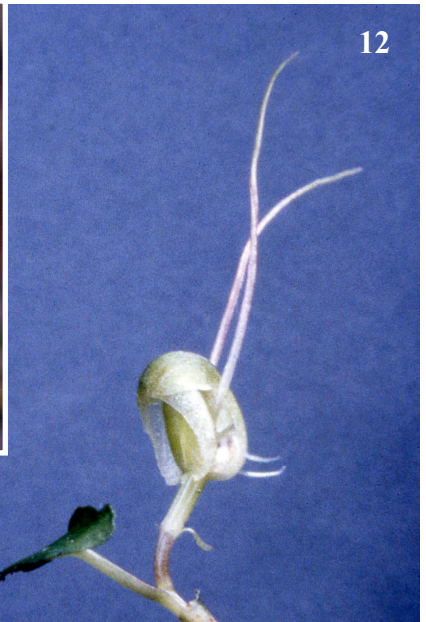




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10



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6, Brian Tyler's *C. "pygmy 5"* **Fig. 9** from Levin, has the protruding labellum, sits on the leaf as it opens like type 3, but then the petiole extends in maturity, much as Bruce wrote for *C. "pygmy sandhills"* (J73:12) but there the likeness fades. *C. "pygmy 5"* also has an *alba* form, **Fig. 10**.

7, Mike Lusk's *C. "pygmy eyelet"* Fig. 11, from Stewart Island 12 Aug 09, has 360° curls on the tips of its lateral sepals making the eyelets. Two months late for *C. "pygmy"* perhaps, but everything else fits and August isn't really too late, so near to the pole, is it?

8, Margaret Menzies' *C. "pygmy white"* Fig. 12, from Waitiri Track, Omoana photographed by Ian St George at the end of May 2002, needs serious follow-up.



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