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Editorial

The Pacific genus *Earina:* how many species are there?

[modified from a paper that first appeared in the Orchadian in 1993].
by Ian St George, Wellington

In 1970 Lucy Moore wrote of the genus *Earina* in *Flora of New Zealand* Volume II, "*c.* 10 spp., 5 in New Caledonia, 2 in NZ, and 1 each in Tahiti, Samoa and Fiji (possibly 2)" [1]. If she were right, that would mean there should be ten or eleven (or twelve if you add the third New Zealander *E. aestivalis*) species in the genus.

How many are there really?

New Zealand: *E. autumnalis* and *E. mucronata* are well-known. The third New Zealand species is *E. aestivalis*. Three for New Zealand.

New Caledonia: Halle (1977) combined three species (*E. brousmichei, Agrostophyllum drakeanum* and *E. valida*) into one - *E. valida*, two (*E. crassicaulis* and *E. deplanchei*) into *E. deplanchei*, and continued *E. floripecten* [2]. Three for New Caledonia.

Samoa: Christophersen (1935) listed *E. samoensiana* [3]. Kores (1989) wondered if *E. samoensiana* should be included in *E. valida*, but was unable to examine any authentic material [4]. Smith (1991) listed *E. valida* in Samoa [5], and Lewis and Cribb (1989) included *E. samoensiana* in synonymy with *E. valida* [6]. *(Paul Ormerod of Cairns informs me that the Type material for E. samoaensiana is in Melbourne, and that though the material is poor, both Clements and he regard it as E. valida).*

Vanuatu: Lewis & Cribb (1989) listed *E. valida* [6].

Fiji: Gibbs (1909) [7] listed *E. laxior.* Parham (1972) listed *E. laxior* and *E. plana* [8]. Kores (1989) lumped *E. laxior, E. plana* and *E. brousmichei* (after Halle) [2] into *E. valida* [4]. He also agreed with Halle that *E. floripecten* differed from *E. valida.* Smith (1991) agreed about the lumping, and listed New Caledonia, New Hebrides, Fiji and Samoa for *E. valida* [5].

Tonga: Yucker (1959) did not list *Earina* among the Tongan flora [9], though Halle (1977) included Tonga in the distribution of *E. valida.*

Tahiti: only the 1838-42 United States Exploratory Expedition (USEE) reported finding an *Earina* from Tahiti, and apparently (see Smith [5]) they mixed up some of their specimens. Del Castillo (1893) included *E. laxior* among Tahitian plants, but he referred only to a USEE specimen and wrote, "I have not seen this plant" [10]. Halle doubted that *Earina* occurs as far east as French Polynesia. We can dismiss Tahiti.

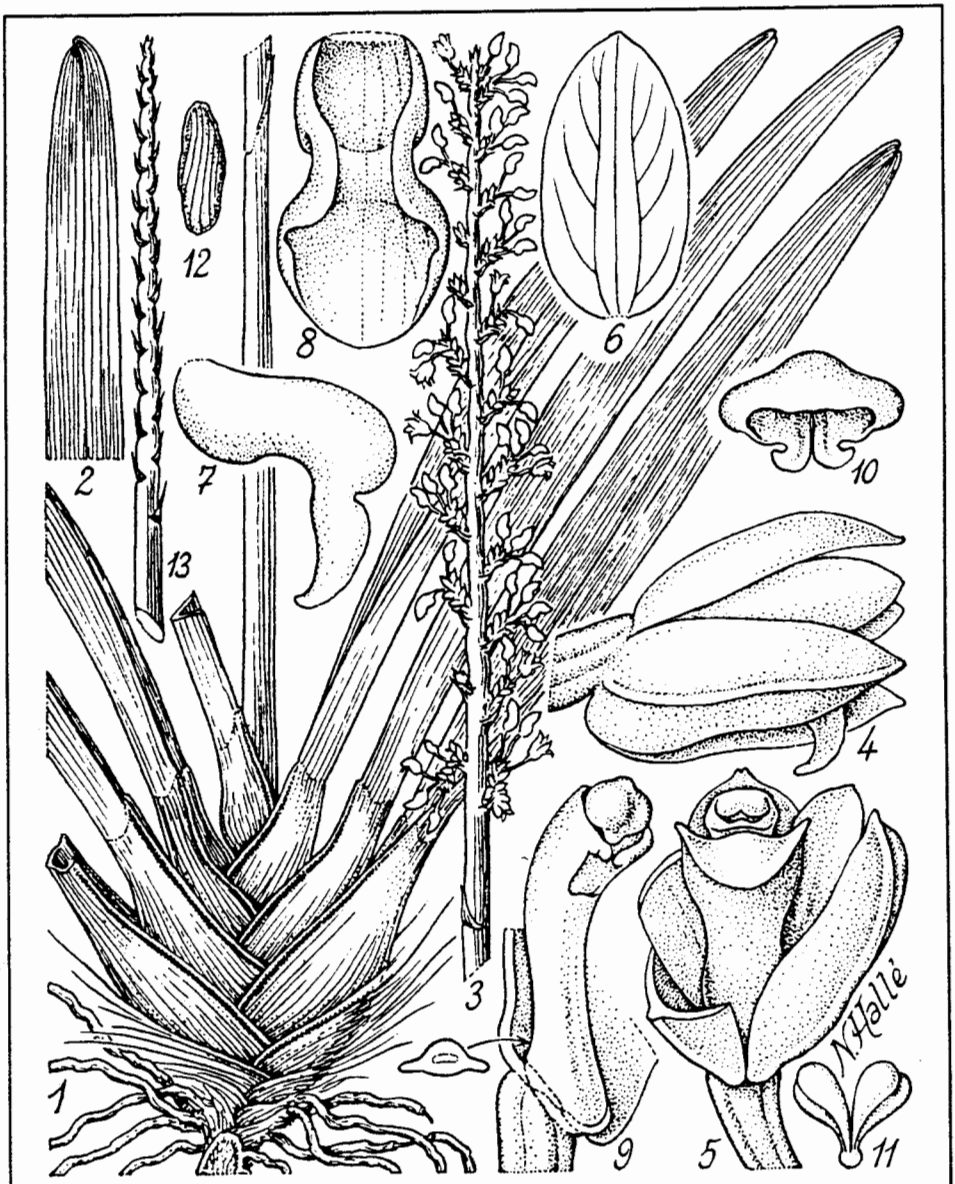
The species

The currently recognised species are as follows.

*E. valida** is a big epiphyte with overlapping pairs of sheaths, wide towards the base, 5-12cm long. Leaves stiff, ribbonlike, 10-48 x 0.8-2cm. Inflorescence terminal, 30-75cm high, on a very long naked scape, 4-8mm wide. Racemes 5-20cm long, comprising numerous multiflowered bracteoles. White 5mm flower with wide elliptical petals, the labellum with a clear sac at the base. New Caledonia, Vanuatu, Fiji, Samoa? Tonga? humid forests, rarely scrub; on trunks or branches, sometimes high. Spring and summer flowering (Figure 1).

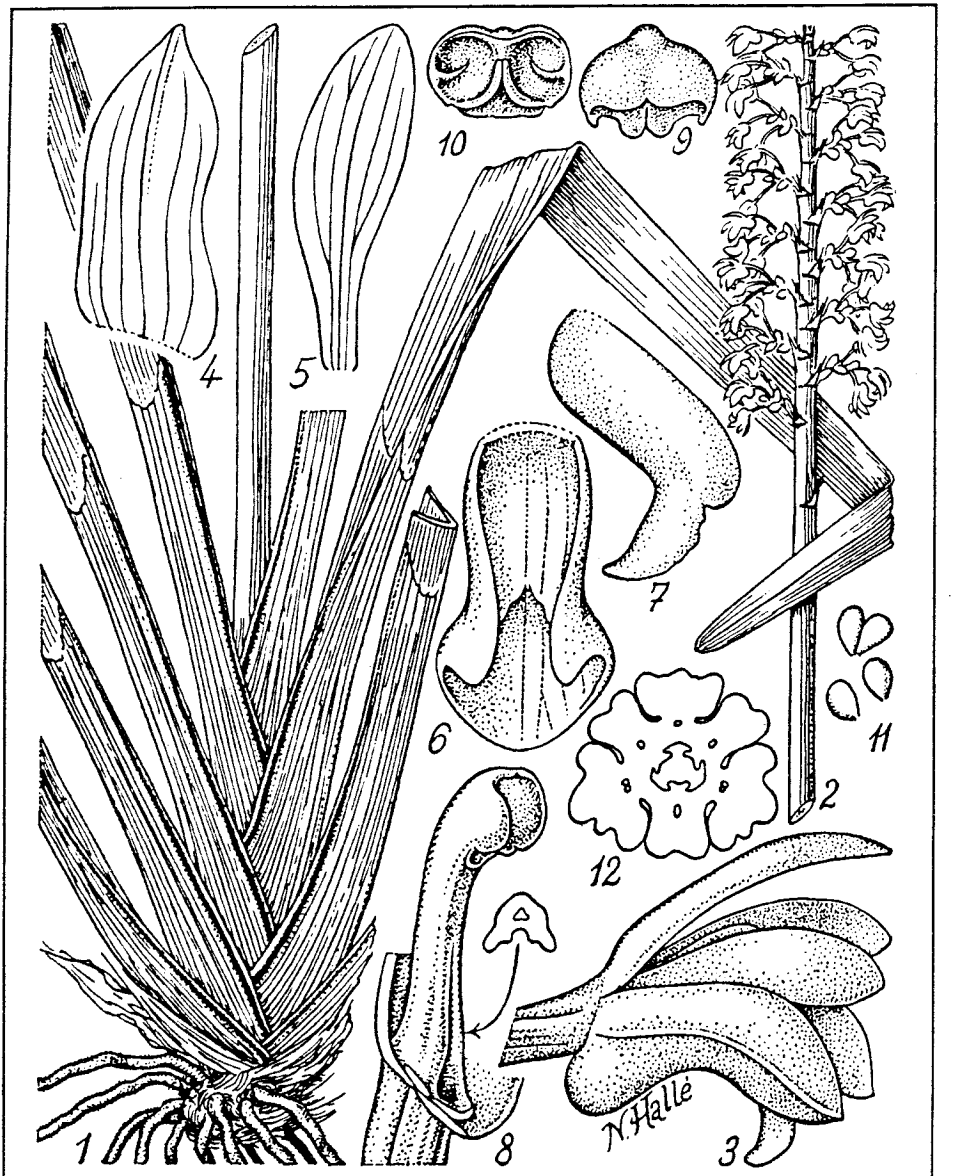
*E. floripecten** is very similar, but is a terrestrial, with spatulate petals, the labellum base concave but not clearly saccate, the base of the column conspicuously grooved. New Caledonia: rocks, bushy slopes, scrub. Flowers November (Figure 2).

*E. deplanchei** is a terrestrial (rarely epiphytic), with a stiff 4-10mm diameter stem, "like a little bamboo". Long scape, 4-13cm beyond the last leaf. White, yellow or green flowers, or yellow-green with a cream labellum, grouped on dense little lateral pannicles. Sepals 6mm long, very straight column. New Caledonia: high places, ferrugenous soils, more or less in the open, rarely in the forest. Flowers October-December (Figure 3).



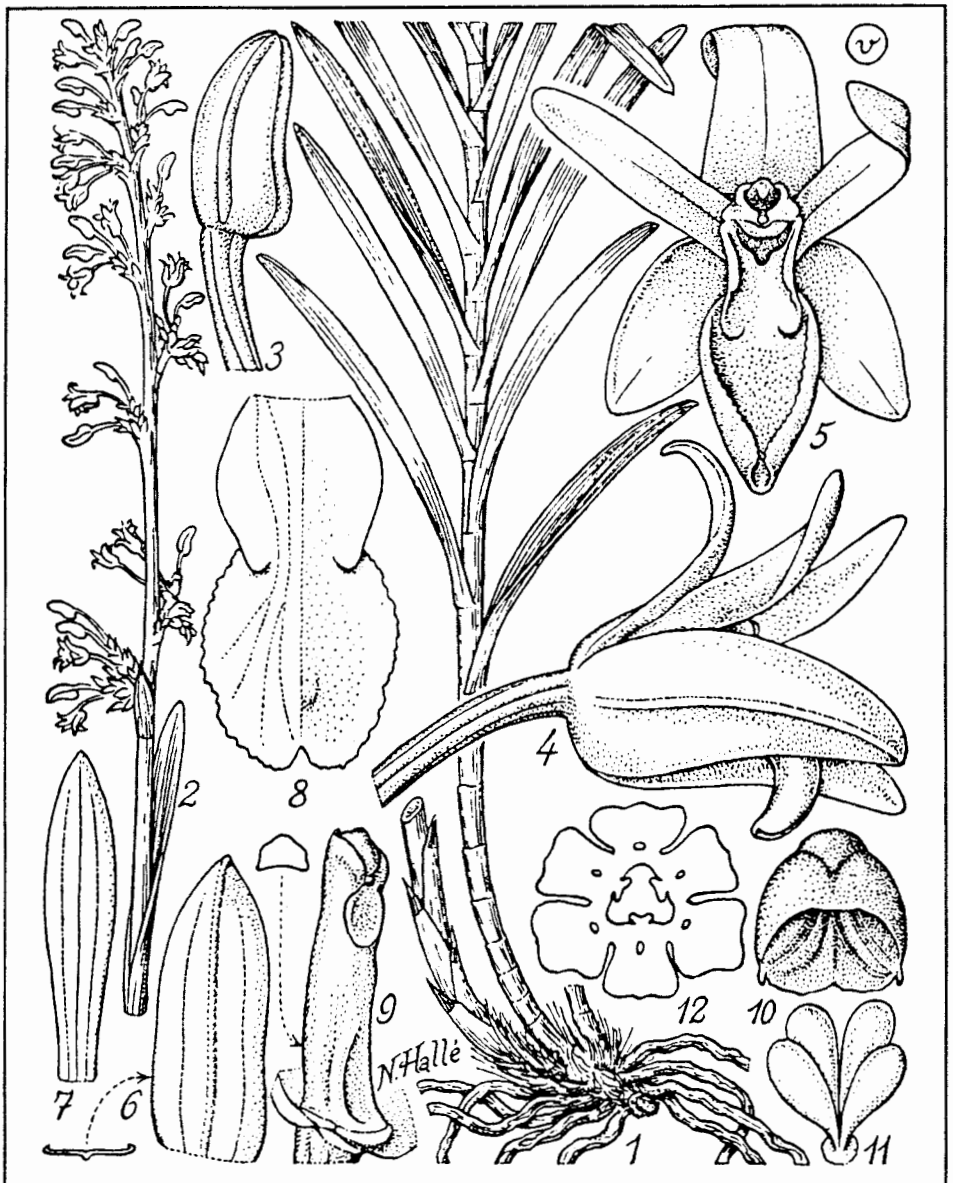
PL. 128. — **Earina valida** Reichenb. f. : **1**, base de l'appareil végétatif × 0,66; **2**, extrémité d'une feuille × 1; **3**, inflorescence × 0,75; **4**, fleur, sépale médian 4 mm; **5**, fl. vue de face; **6**, pétale 4,4 × 2,7 mm; **7**, **8**, labelle, profil et face, env. 5 × 3 mm; **9**, colonne, long. env. 4,5 mm; **10**, anthère, de face, 1,3 mm; **11**, pollinie, 0,5 mm; **12**, graine, 0,15-0,2 mm; **13**, jeune inflorescence. — *MacKee 16432*, sauf : 8, 10, 11, *Vieillard 1298*; 12, *MacKee 26884*.

Earina valida: drawing by Nicholas Hallé, 1977.



PL. 129. — **Earina floripecten** Kränzl. : **1**, base de l'appareil végétatif × 0,66; **2**, inflorescence × 0,9; **3**, fleur, sépale médian 5 mm; **4**, sépale latéral 5 × 2,5 mm; **5**, pétale 6 × 2 mm; **6**, **7**, labelle, face et profil, larg. 2,5 mm; **8**, colonne, long. 4,5 mm; **9**, **10**, anthère, face et dessous, 0,9 mm; **11**, pollinie, éléments de 0,5 mm; **12**, coupe de l'ovaire, diam. 1,2 mm. — *Franc 2413*, sauf : 4, 5, 12, *Virot 1400*.

Earina floripecten: drawing by Nicholas Hallé, 1977.



PL. 130. — **Earina deplanchei** Reichenb. f. : **1**, base de l'appareil végétatif × 0,66; **2**, inflorescence × 0,66; **3**, bouton 4,2 × 2,5 mm; **4**, **5**, fleur, vue latérale et face; **6**, sépale latéral 6 × 3 mm; **7**, pétale 6 × 1,2 mm; **8**, labelle vu de face, à plat, 6 × 3 mm; **9**, colonne, long. env. 4 mm; **10**, anthère, vue antérieure, 0,7 mm; **11**, pollinie 0,5 mm; **12**, coupe de l'ovaire, diam. 1,5 mm. — *MacKee 24502*, sauf : 1, *Cribs 1286;* 8, 12, *Buchholz 1263.*

Earina deplanchei: drawing by Nicholas Hallé, 1977.

E. autumnalis and *E. mucronata* are the well-known New Zealand epiphytes.

Earina aestivalis is a NZ coastal species, similar to *E. mucronata* with racemes of larger, darker flowers; more robust habit with shorter, broader leaves. New Zealand: apparently confined to west coast from Northland perhaps to Fiordland; also the Chathams. Flowers January-February. Some still doubt the validity of this species: *E. mucronata* is variable in habit and colour, and may flower in spring and summer.

Summary

Earina is a Pacific island genus currently regarded as having two very different growth forms. Four species have slender, long, leafy, cane-like stems: the New Zealand *E. autumnalis*, *E. mucronata* and *E. aestivalis*, and the New Caledonian *E. deplanchei*. Two have short, congested, rather fleshy stems completely obscured by the iris-like bases of the foliage: the New Caledonian *E. floripecten* and *E. valida*, the latter also from Fiji, Vanuatu, Samoa and perhaps Tonga. It is hard to understand why both forms are thought to belong to the same genus.

Acknowledgements

I am grateful to Dan Hatch for helpful comments, to the Museum of New Zealand Te Papa Tongarewa for permission to reproduce the Parkinson and Forster prints, and to the laboratoire de Phaneragamie, Museum national d'Histoire naturelle, Paris, for permission to reproduce the drawings from Halle.

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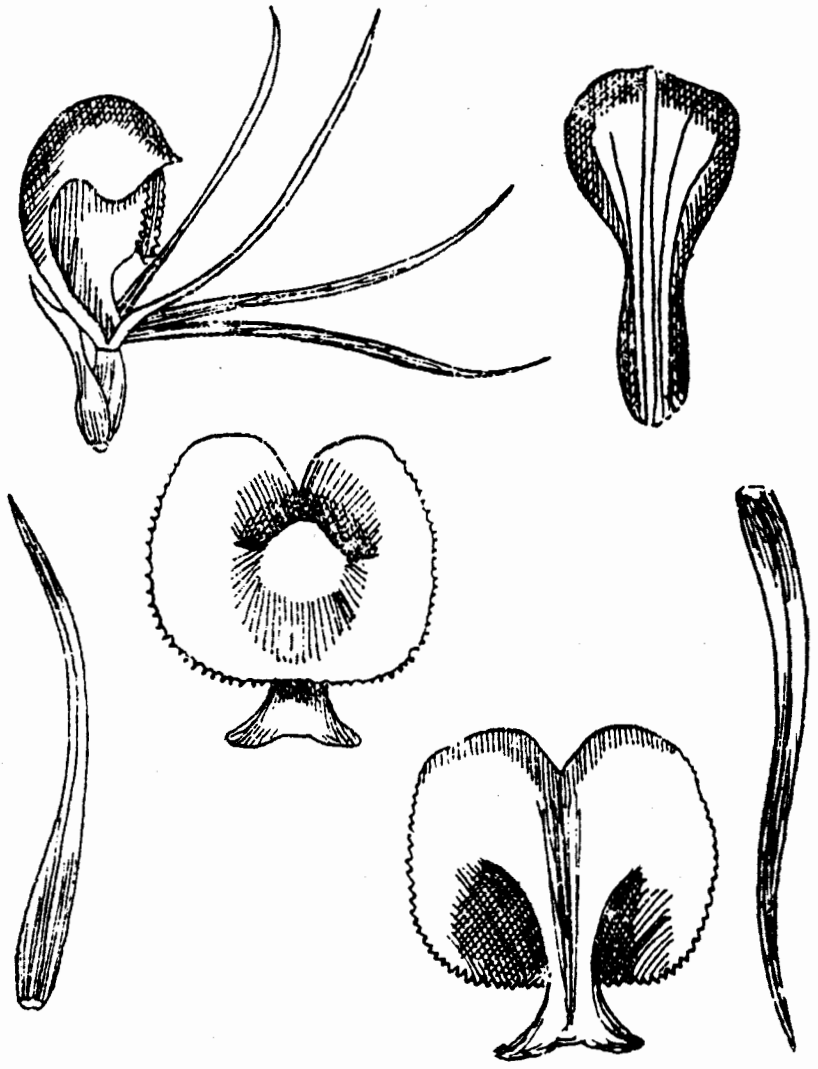
NZ Native Orchid Badges

Heather Crofsky has arranged the production of collectors' badges for the Group. An annual conservation badge will be produced, and a commemorative badge for the First New Zealand Native Orchid Conference to be held in December. In adition there will be an Iwitahi badge available shortly. Watch this space



Corysanthes saprophytica Schltr.

Close relations

Corybas saprophyticus drawn by Rudolph Schlechter and first published in 1914. Reproduced from *The Orchidaceae of German New Guinea.* Australian Orchid Foundation, Essendon, 1982. p88.

Original papers

A *Pterostylis* from Taranaki in 1866

by I.M. St George and E.D. Hatch

Among the specimens of *Pterostylis* from New Zealand in the Kew Herbarium is a letter and illustration in a sometimes difficult to decipher longhand. It has been transcribed below, with marginal numbers referring to the notes that follow.

Arr$^{d.}$ & forwarded to Dr Hooker 13/3/67 **Notes** *(see p11)*
New Plymouth
7th November 1866

1.

My dear Sir,

I regret much that I had not the opportunity of seeing you again when you were in 2.
New Plymouth, having once before had the pleasure of meeting you at the house of Mr Spencer Headley in Parnell, in company with my very old friends the Taylors of Whanganui.

I trust I shall have the pleasure of your company on the next occasion of your visiting 3.
this district, which I understand from Mr Richmond, you intend to do in the summer.

I forward to you a sketch and description of a species of Pterostylis which I gathered the other day (on the afternoon of Sunday, after you were gone away,) and which is certainly none of the seven species named by Hooker J. in the "Handbook". The color (sic), habit, habitat, and above all the texture of the plant discriminate it altogether from P. Banksii, and Graminea, and the leaves from any other. If not an Australian or Tasmanian species, nor hitherto described as a Native of these Islands, which is a point I cannot settle, in the utter absence of any books or references, I would suggest the name of P. Ochroleuca, unless preoccupied. Probably however it is an already known species of the neighbouring Colonies, and perhaps (I speak from mere guess, and without having seen the plant named,) it may prove to be P. Praecox, which is stated to be nearly allied to P. Graminea - I have given you the Diagnosis and Description in Latin, which language I mostly prefer for its accuracy in all kinds of natural sciences, not less than for its early associations with my first Botanical Studies and Text Book, the "Flora Brittanica".

The plant I found on Sunday is, as yet, the only specimen I have seen, and it has not been recognised by any one here as previously noticed, unless by one old lady, who states that she gathered it some years ago near the Colonial Hospital; but the accessories of time, color, and locality mentioned by her make me tolerably certain that her plant was P. Graminea, which I cannot separate specifically from smaller states of P. Banksii.

Another lady, with Miss King on that occasion, does not seem at all to recognise my 4.
plant as the one they found on that day plentifully - if I get further specimens (and I shall not be easy till I do,) I will forward to you without delay.

At any time when I may chance to meet with anything deserving of attention, I will not fail to communicate it to you.

Allow me to remain,
My dear Sir,
Yours very sincerely,

5.

Edwin B Dickson.

PS

The existence of gold and platinum in the iron sands is not a new discovery at all; 6.
this same was pointed out to me about eight years back by the late Dr Peter Wilson of this place.

Pterostylis.....? 7.

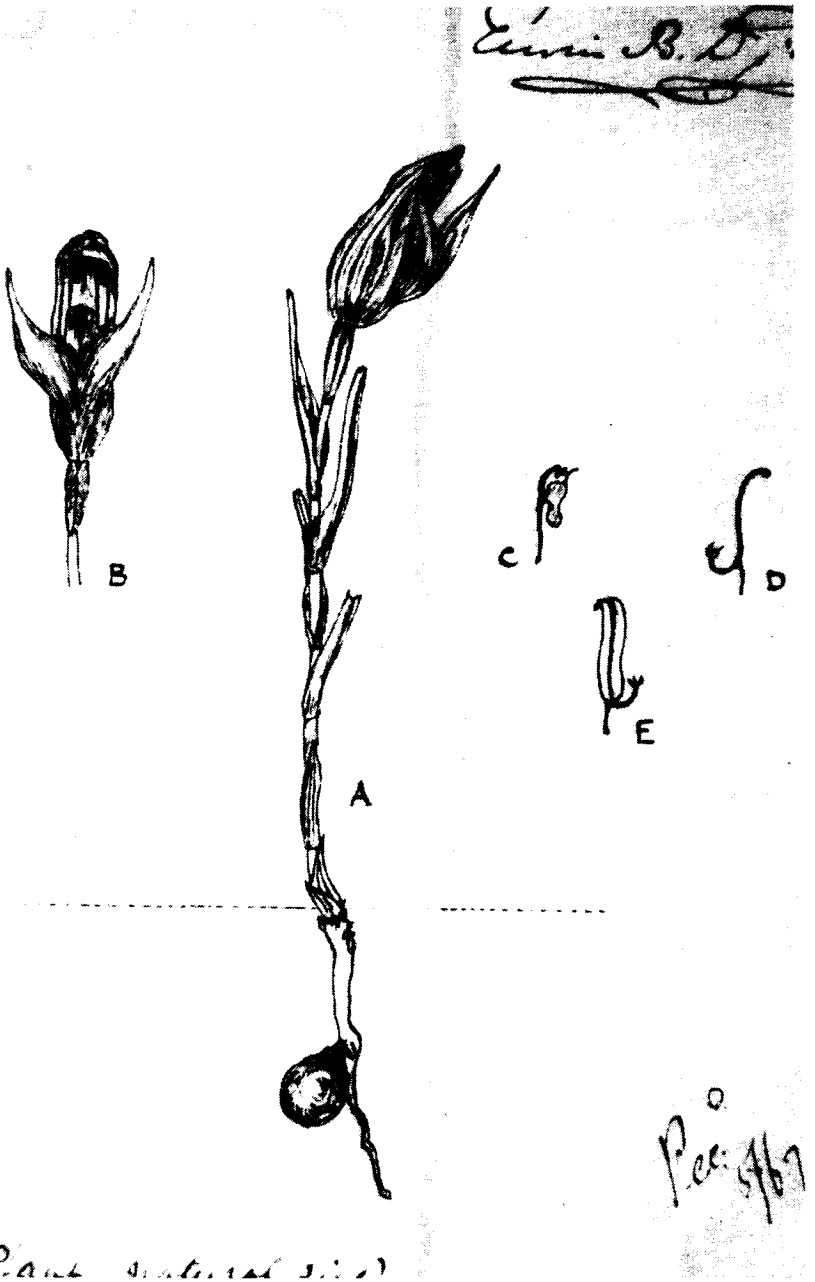
(Plant) a span high with a single flower. Leaves cauline, blunt, linear-lanceolate, the midribs translucent. Stem a span high, thicker towards the ground, with a few bracts closely sheathing the base. Flower solitary, an inch high, yellowish-white, with delicate green striate veins. Sepals and petals connected at the rear into a galea. Lateral sepals produced into caudae. Labellum included in the galea, the hooked appendage with a fimbriate tip. Column with broad wings, the lower portions rounded, the upper shortly mucronate, the mucrines curved forwards. Leaves short, blunt, attached to the stem nodes, linear-lanceolate, pale, flat, one and a half inches long. Midribs white, more or less translucent. Basal leaves absent. Root of a single sub-rotund tuber, rhizome internodes few, thick, white. The whole plant is a pale yellowish-white. It grows in marshy soil near the Huatoki stream and though inconspicuous is not uncommon. It seems not to occur in Australia or Tasmania. Allow me to suggest for it the name *P. ochroleuca.*

cf the Australian species *P. praecox?* 8.
Edwin B. Dickson
Nov. 6 1866.

Sketch to accompany description of Pterostylis, found 4 Novr 1866, near Huatoki stream, New Plymouth.

Edwin B Dickson.

A. Plant, natural size;
B. Flower, from the front;
C. Column, with wing;
D. Lip, with appendage, in profile;
E. Ditto, from behind.
All natural size.


B
C
D
E
A

Notes

1. ***Who was "My Dear Sir"?*** The letter was written in 1866 to someone of botanical repute whom the writer had met in Parnell, who had recently visited New Plymouth, and who sent the letter on to JD Hooker at Kew. Kirk arrived in 1863, and was corresponding with Hooker by 1867 (his name and lists appear in the 1867 edition of the *Handbook*), but his first excursion outside Auckland was to the Waikato in 1870; Cheeseman was only 20; Colenso, who never visited Taranaki, was politicking in Hawke's Bay; Petrie was in Otago; Carse was nine years old; Sinclair had been drowned five years earlier. Hector, Buchanan, Skey and Gore moved to Wellington from Otago in April 1865; Hector and Buchanan already had reputations as botanists - they had sent collections to Hooker. Hector travelled north via New Plymouth to Auckland in 1864 trying to raise money for the NZ Exhibition in 1865 (fashionable Parnell was probably a good place to do it); and his notebooks reveal that in October 1866 he was in Taranaki on his Geological Survey. Furthermore "He was the friend and advisor of all scientific workers looking for help and encouragement" (Burnett RIM. *The life and works of Sir James Hector.* MA Thesis, University of NZ 1936). Hector's handwriting was so bad even he couldn't read it, and it was a neat hand that wrote *"Arrd and forwarded to Dr Hooker"*. Nonetheless Hector has to be the best bet for "My dear Sir".

2. ***Mr Spencer Headley's*** (of Parnell) name is hard to read - it could be Madley, Hindling, Weadley, etc; ***the Taylors of Whanganui*** were perhaps the family of Rev Richard Taylor of Putiki.

3. ***Mr Richmond*** may have been HR Richmond, Superintendent of the Taranaki Provincial Government.

4. ***Miss King*** may have been a member of the well-known King family of New Plymouth - of which Dr Truby King was later to become an illustrious member.

5. ***Who was the writer?*** Edwin Brodie Dickson's name and a glimpse into his story appears in *Quill and wax* (p 26), a collection of biographical notes about people who worked for the New Zealand Post Office in its early years. On 5 May 1856 Dickson was appointed Temporary Clerk in the Native Secretary's office in Auckland. On 1 January 1859 he was appointed Clerk to the Postmaster-general in Auckland at an annual salary of 182 pounds. On 12 September 1862 he was "superceded". In 1863 he became Secretary to the Post Office in Auckland - effectively second in command; the position was abolished later. On 1 October 1864 he was appointed Chief Postmaster in New Plymouth on a salary of 250 pounds - replacing J.S. Smith who had resigned; in 1868 his salary was reduced to 225 pounds. On 1 January 1869 he was succeeded by J.S. Smith. He spelt "colour" as "color", common American usage in 1866, but he used the *Flora Brittanica* in his first botanical studies, so he was probably British.

6. ***Dr Peter Wilson*** was surgeon at the Colonial Hospital in New Plymouth - see Gail Lambert's *Peter Wilson: Colonial Surgeon* (Dunmore Press, Palmerston North, 1981).

7. A Latin description paraphrased by EDH - the handwriting is undecipherable in places, so an exact translation is difficult.

8. ***What was the Pterostylis he called P. ochroleuca?*** Certainly not *Pterostylis praecox* (= *P. alata: Australian Orchid Research 1,* 1989). From the Latin description and drawing it appears to have been the pale yellow *Pterostylis* "aff. *montana*".

Synonyms

by E.D. Hatch, Auckland

There are a great number of synonyms in the local orchid literature - far too many in fact. And yet most have been coined in good faith. How this came about might make an interesting tale. So let us begin at the beginning -

1: Solander

1769 and the grey dawn of taxonomy, only 16 years after the publication of Linnaeus' *Species Plantarum.* Cheeseman, in the *Manual NZ Flora*, Ed.1: (1906), said - "Every botanist who prepares a Flora starts from the standpoint reached by his predecessors in the same field". Solander had no predecessors - his was a virgin field. The *Primitiae Florae* is full of wonder that such strange plants could really exist.

Solander described eight orchids from NZ and placed them in four Linnaean genera - *Arethusa*, *Ophrys* and *Serapias* (1753), and *Epidendrum* (1763). He considered these to be provisional placings and commented on *Ophrys cornuta* (*Orthoceras*) - "This plant differs from *Ophrys* in the swelling at the base of the nectarium and the 2 petals surrounding the base of the column;" and on *Serapias regularis* - "There are strong reasons for placing this plant in a separate genus - the regular, spreading, 6-tepalled corolla etc." (Forster, having studied Solander's MS, took this option up with *Thelymitra*).

Parasites - With the exception of the ferns, which he somehow sensed were not, Solander tended to classify all those plants which grew in the forks and on the branches of trees as parasites. Most of these were epiphytes which use their host trees merely for support and not for nourishment. In northern Europe, where he learnt his botany, the only vascular plants growing on trees were the mistletoes, and without time to investigate properly, it was natural for him to assume that these southern perching plants were also parasites. Once mooted, the idea persisted, and we find Darwin writing as late as 1845 (*Voyage of the Beagle* - Everyman p233) "...in New Zealand...where orchideous plants are parasitical on the trees." Of the twelve plants Solander described as parasites, three actually were mistletoes - the remainder were ordinary epiphytes, including *Lycopodium varium*, although he didn't consider the ground dwelling lycopods to be parasites. In passing Swartz named his genus *Dendrobium* - "life from the tree", under the mistaken impression that these plants were parasites, which of course they were not.

Among these "parasites" were four orchids which he placed in the genus *Epidendrum* - *Bulbophyllum pygmaeum*, "please allow me to draw attention to this rather remarkable bulb-bearing plant, with its creeping stems"; *Dendrobium cunninghamii*; *Drymoanthus adversus*; and *Earina mucronata*, "this description of the roots creeping on the bark of the stems and branches of trees will seem incredible". Of two of these, the *Bulbophyllum* and the *Drymoanthus*, he saw no flowers, so that a provisional placing was the best he could do.

He considered that two NZ orchids - *Thelymitra longifolia* and *Pterostylis banksii*, also occurred in Australia. This too was forgiveable, others have done much worse. By and large we can conclude that Solander was an experienced professional botanist and did very well indeed. Our one regret must still be that his work was never published. Indeed, early causes of synonomy were the efforts of later

botanists to credit Solander with the very appropriate specific names he coined.

2: J.R. & G. Forster 1776-1786

During Cook's second voyage the Forsters recorded three orchids from NZ. They took up Solander's suggestion and described his *Serapias regularis* as the new genus *Thelymitra*, and gave his *Ophrys porrifolia* the new specific name of *unifolia*. They also discovered and described *Epidendrum (Earina) autumnale*. These names were duly published which was a good thing.

But in 1786 George Forster rejected *Thelymitra longifolia*, which he had earlier described with his father, and resurrected Solander's *Serapias regularis*. There seemed no point in this, unless he was trying to placate (OK crawl to) Banks, since Solander had died in 1782 and was no longer around to impress. This was synonym #1. In fairness to these oldtimers there was then neither a Code of Nomenclature nor a rule of priority so they were free to do as they liked.

3: Swartz 1799-1800

Swartz transferred George Forster's *Epidendrum autumnale* to *Cymbidium*, and his *Ophrys unifolia* to *Epipactis* as *E. porrifolia* (Sol.). He also renamed *Thelymitra longifolia* as *T. forsteri*. These generic changes were not errors per se, but represented Swartz's opinion to which he was entitled. The synonyms however had now risen to three!

4: Brown 1810

In the *Prodromus* Brown described a number of Australian genera, representatives of which were later found in NZ. Brown's Latin diagnoses were unfortunately brief and sometimes cryptic, and were not illustrated. Later botanists working in NZ without access to his type material in the British Museum were often uncertain whether or not their discoveries had been previously described, and to be on the safe side often described them again, creating yet more synonyms. Isolation from Kew and the British Museum, without access to specimens, books or illustrations was the major source of error, continuing to the present time.

Brown included Forster's *Ophrys unifolia* and Swartz's *Epipactis porrifolia* in his new Australian genus *Microtis*, but made no attempt to define them. Forster's material was in Paris, but the battle of Waterloo was still four years away and France was out of bounds.

In 1826 Sprengel made the combination *Microtis porrifolia* (Sol.) R.Br. Synonym #4.

5: Richard & Lesson 1832

The French voyages which culminated in the *Essai* of Richard & Lesson were handicapped by the persisting anti-French feeling in Britain - they could hardly ask Brown for a loan of his BM material. On the credit side however they had the Forster specimens and MSS in the Paris Museum. The antipathy however worked both ways. The British remained largely ignorant of Forster's material and this affected Lindley's view of *Earina*. q.v.

Richard followed Swartz in using *Thelymitra forsteri* and *Cymbidium autumnale*, and confused Brown's genus *Orthoceras* with *Diuris* (both have prominent lateral sepals). He also confused the NZ *Dendrobium* with the related Pacific Island species named (*Epidendrum*) *biflorum* by Forster. Synonyms now totalling 6.

7: Lindley 1834

Lindley described *Earina mucronata* (Sol.), citing as a synonym *Epidendrum autumnale* Forst. f. He obviously had no idea of the true nature of *autumnale* (see above) and went on in 1843 to describe plants of this species from Rotorua as *E.*

sauveolens. Synonym #7. (J.C.Bidwill - *Rambles in NZ* p67). And in 1840 he redescribed as *Orthoceras solandri*, Richard's *Diuris novae-zeelandiae*. Synonym #8.

Meanwhile in 1835 W.J. Hooker redescribed *Microtis unifolia* as *M. banksii*. Synonym #9.

I could go on in this vein indefinitely and only produce confusion. Briefly then there are several sorts of synonyms -

1: names created in ignorance of the fact that the plant had already been described - example Cheeseman's *Corysanthes matthewsii* = *Corysanthes rotundifolia* J.D.Hook.

2: names which, while ending up as synonyms, were originally published as the expression of the writer's opinion, to which he was entitled - example Smith's *Dendrobium pygmaeum* (Sol.).

3: names published in ignorance of the fact that they had been used earlier for quite different plants - example Hatch's *Corybas saprophyticus* (*cryptanthus*), duplicating Schlechter's name.

George Forster's print of *Earina autumnalis*

(modified from a paper that first appeared in the Orchadian 1993: 11(2): 56-65)

by Ian St George

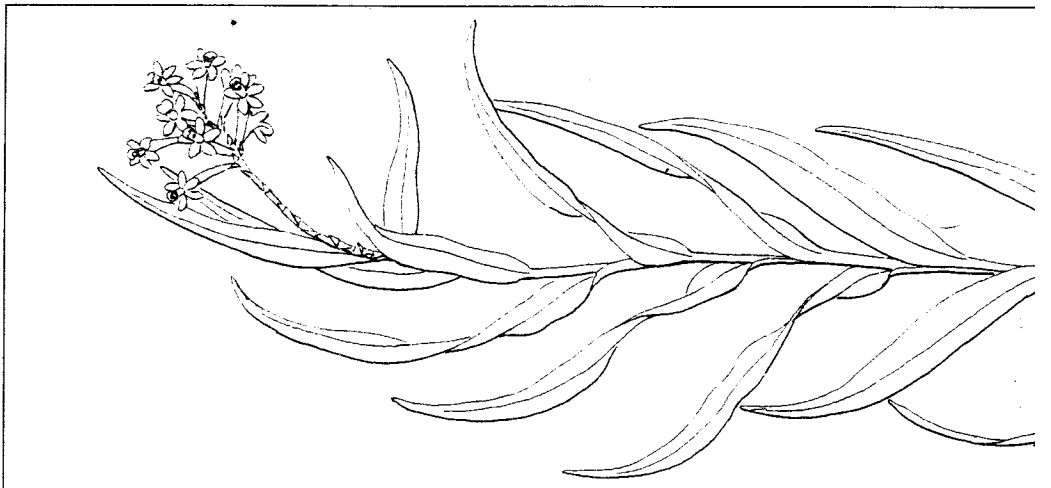


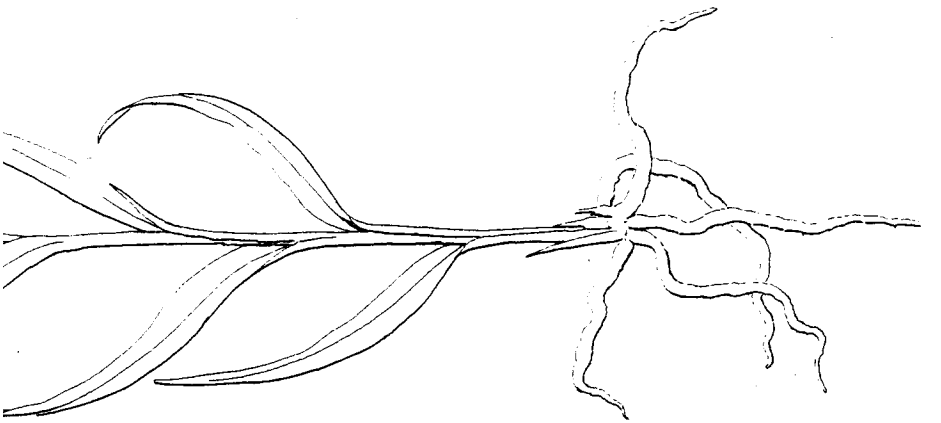
Figure 1: *Earina autumnalis:* monochrome lithographic print

If Captain Cook's naturalists didn't find *Earina autumnalis* during the first (*Endeavour*) voyage, why is there a print of *E. autumnalis* (Figure 1) in the British Museum collection of illustrations from that voyage?

The young Sydney Parkinson made sketches of many New Zealand plants for the naturalists Joseph Banks and Daniel Solander; there were seven orchids, one of which was *Earina mucronata*. That was in 1769. Parkinson died in Jakarta, and back in London Banks ordered copper engravings based on the illustrations, and left them to the British Museum in 1820. Prints were made from several of these engravings in 1895. Sets of the New Zealand flora were sent to the Department of Education - the set used by Kirk is now in the National Museum collection, and that used by Cheeseman in the Auckland Institute and Museum. A print of *Earina mucronata* is among them. (Figure 2), and it is certainly engraved from Parkinson's drawing.

In each of these sets there is also a print of *Earina autumnalis*. But this orchid was not among those found on the first voyage, and furthermore the print is the work of a different artist - quite inferior in detail to the other prints - unfinished looking (Figure 1).

In March 1773 on Captain Cook's second voyage, the *Resolution* naturalist Johann Reinhold Forster saw at Dusky Sound "a very fine *Epidendrum* in flower, which spread a very agreeable smell" [2]. Anders Sparrman later (1786) wrote "Leaves sheathing the stem, lanceolate, densely nerved; peduncles paniculate, terminal, with scale bracts; lip of the nectary erect with rounded apex" [3]. Forster's son George made a partly coloured sketch and labelled it "*Epidendrum Autumnale*.... N.Z. Dusky Bay March 29th. 1773". The sketch is in the British Museum (Natural History), and it is from this sketch that the *E. autumnalis* engraving was made.



rint of a drawing by George Forster (1773) - actual height 37cm.

Figure 2: *Earina mucronata:* detail of a monochrome print from a copper engraving by Frederick Polydore Nodder, from a sketch by Sydney Parkinson (1769) - full size.

At some time this sketch and print had been separated from the other Forster plant drawings in the British Museum, and kept among the Parkinson ones. Michael Hoare missed them in his list of Forster plant drawings [2]. How did they get there?

Many of Forster's drawings were sold to Banks in 1776; some time after that the sketch and print were left with the illustrations from the first voyage. The engraver is unknown, but a number of engravings were said to have been made for a planned book of Forster plant illustrations.

It would not really matter, except that this mixup probably caused botanists to confuse the two New Zealand species for two centuries. The sequence goes something like this:

1799: the Swede Olaf Swartz changed the name of Forster's *Epidendrum autumnale* to *Cymbidium autumnale*, no doubt after seeing Forster's Dusky Sound specimen in Paris [4].

1832: the Frenchman Achille Richard used the name *Cymbidium autumnale* in his *Essai d'une Flore de la Nouvelle-zelande* [5]. He wrote that he had seen the Paris material.

1834: the Englishman John Lindley pointed out that not all epiphytes were suited to hothouse conditions [6].

He mentioned a few temperate-climate species, among them

> *Earina mucronata*..., although occurring as far to the Northward as 35° S. Lat. in humid forests at the Bay of Islands, in New Zealand, exists also in abundance in the "very (permanently) damp woods which clothe the shores of Dusky Bay, (Lat. 45° 45' S.) on the western side of the Larger or Middle Island of New Zealand," where it was originally observed by Forster, in Cook's Second Voyage, and where it has been since met with by Mr. Cunningham, whose words we have quoted.

Lindley made two mistakes: Allan Cunningham had not ventured south of the Bay of Islands, so could not have "met with" an *Earina* or anything else in Dusky Sound; and Forster's Dusky Sound specimen was not *E. mucronata* - it was *E. autumnalis*.

Lindley went on to describe formally the genus *Earina* and the species *E. mucronata* (using but not acknowledging Solander's specific name); he mistakenly included in synonymy Forster's *Epidendrum autumnale* (and Swartz's *Cymbidium autumnale*). The French had seen the specimen of *E. autumnalis*, but the English had only read of it: 1834 was a mere nineteen years after the Battle of Waterloo, and Lindley would not have been welcome in Paris to see the Forster specimen (politics always takes precedence over science). But if he had seen the Forster sketch in London, he had not appreciated the differences.

1836: Allan Cunningham followed Lindley's example and included only *E. mucronata* in his list of New Zealand plants [7].

1839: J.C. Bidwill was at Rotorua from Tuesday 13 March to Wednesday 21 March. He wrote [8],

> I discovered in the woods here... a most beautiful epiphytal orchideous plant, with a very powerful perfume; if this plant would grow out of doors in England, as I think likely, it would be quite a new feature in gardens.

He wrote a footnote: "Probably *Earina mucronata*", but (as Dan Hatch points out) adding the perfume to the date of flowering, it seems more likely that this

was *E. autumnalis*, and perhaps the actual specimen eventually described in

1843: by Lindley as *E. suaveolens* ("fragrant") [9]:

> This extremely rare Orchidaceous plant was sold the other day among a collection of New Zealand varieties, brought to this country by Mr Bidwill... from Mr Bidwill I learn that it grows near Rotorua in New Zealand, on trees not very densely covered with leaves; that it is very rare even there, and most deliciously perfumed.

Lindley could see that Bidwill's plant was not *E. mucronata*, with which he was familiar. But he had still not seen the Paris specimen, or he should have known that Bidwill's plant was already described - was in fact *E. autumnalis*.

1844: W.J. Hooker wrote on *Earina mucronata* with an accompanying illustration by W.H. Fitch. As Lindley had, Hooker quoted Forster's *Epidendrum autumnale* and Swartz's *Cymbidium autumnale* as synonyms [10]. He had not been to Paris or appreciated the Forster sketch either.

1853: J.D. Hooker separated *E. autumnalis* and *E. mucronata* in his *Flora NZ* [11]. But he made a further error which may have added to the confusion: after each species he wrote *"Banks et Sol. MSS. et Ic."* - referring to Solander's unpublished manuscripts and Parkinson's drawings from Cook's first voyage, by then in the Banksian collection in the British Museum. Hooker must have found drawings of both *Earinas* in the first voyage collection and attributed both to Parkinson (he did it again for his *Handbook of the NZ Flora* in 1864).

1977: Despite the fact that New Zealand botanists have separated the two for over 100 years, Nicholas Halle wrote that Lindley's *E. mucronata* was an illegal name for *E. autumnalis* [13]. In **1989:** Kores [14] and in **1991:** Smith [15] have repeated the error.

Acknowledgement

I am grateful to Dan Hatch for translations, for his helpful comments, and for showing me some of the historical material.

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Pterostylis micromega and other wetland plants near Waverley

by Colin Ogle, Department of Conservation, Wanganui

Just before Christmas 1993 I was part of a team of five staff from the Department of Conservation at Wanganui who surveyed part of Ihupuku Wildlife Management Reserve near Waverley (Manawatu Ecological Region). No detailed survey was known for this wetland reserve before, and we made some significant botanical discoveries.

Pterostylis micromega

One which was widely reported in the national media in early January was the swamp hood orchid, *Pterostylis micromega*. This orchid is listed as endangered nationally [1]. A flower and leaf were taken from one of the orchids, leaving the bulb in the ground, and sent fresh to Brian Molloy at Landcare Research in Lincoln. He confirmed its identity and preserved it in fluid for further study.

Although recent editions of the NZNOG *Journal* use the name *P. furcata* for this orchid, Brian Molloy noted (pers. comm. 24.12.93) that he is maintaining the name *P. micromega* for NZ plants, which he recognises as being distinct from the Australian *P. furcata* and *P. falcata*.

The nearest previous location for *P. micromega* to this site is Ngaere Swamp near Eltham (Egmont Ecological Region). Ngaere Swamp has been totally drained and converted to high production dairy farms. *P. micromega* is one of five species cited for the Ngaire (*sic*) Swamp by Thomas Cheeseman [2], including the small dicot herb *Gratiola nana*, the sedge *Schoenus carsei*, and the orchids *Thelymitra cyanea* (as *T. venosa*) and *Prasophyllum* sp. aff. *patens* (as *P. patens*). Cheeseman's specimens of these plants are lodged at CHR (the Landcare Research NZ Ltd herbarium at Lincoln) but are undated (B. Macmillan pers. comm.). Of the five species, there are no subsequent Taranaki records for the first three. The *Thelymitra* still occurs in peat bogs within Egmont National Park. The *Prasophyllum* is recorded for similar sites [3] although I know of no recent records.

Other Orchids

Two of us returned to the swamp in mid-January 1994 and surveyed another 3km of edge. Although we did not find any more plants of *Pterostylis micromega*, we found a few plants with withered flowers of what was probably *P.* "aff. *montana*" growing under dense flax. More common was *Spiranthes sinensis* in full bloom, scattered through boggy pasture along some 2km of edge. We stopped counting after reaching 200 plants; in places we would have seen 10 plants in patches of less than 10m ^{2}. Had we overlooked *Spiranthes* in the parts we had surveyed the month before? We returned to part of that area and found only a single plant of the orchid, which suggests that it is only locally common.

The other orchids found in this partial survey of Ihupuku Swamp included three plants of *Prasophyllum colensoi*, a species which is common in montane open country of the North Island but uncommon near the coast. *Microtis unifolia* was common around the boggy margins.

Features of Ihupuku Swamp

Ihupuku Swamp is one of the largest wetlands in Wanganui Conservancy of DOC. Almost 39ha were reserved for wildlife management by the NZ Wildlife Service in 1985, but another 20ha or

more remain in private ownership. The wetland is long and narrow, and lies in several valleys of the plain between Waverley and the coast.

The reserve alone has about 12km of edge, and is about 200 metres wide at its widest point. Such physical features plus the dense vegetation make the swamp very difficult to survey. It is dominated by flax (harakeke), toetoe, cutty-grasses (*Carex* sedges), and a small-leaved swamp coprosma (*Coprosma tenuicaulis*). Cabbage trees are locally common. The swamp edges are stock trampled, but the cattle seem to be thwarted by the dense taller reeds and scrub. Areas pugged by cattle still have a range of small stature native herbs, with several species of native buttercups, willow-herbs, and sedges being common.

Other significant plants

Among the 91 indigenous vascular plant species so far recorded [4] at Ihupuku Swamp are several others which deserve special mention for their regional rarity or unusual aspects of their distribution. Among these is the nationally rare native buttercup, *Ranunculus macropus*, which at Ihupuku is widespread and locally common. Several plants of a native clematis, *Clematis quadribracteolata*, were found in one spot. This *Clematis* was previously known only in the central North Island and eastern South Island. At least another nine plant species are regionally uncommon, including bur-reed (*Sparganium*), jointed twig-rush (*Baumea articulata*), and two species of NZ's largest-flowered swamp willow-herbs, *Epilobium pallidiflorum* and *E. chionanthum*. Many plants of *Tmesipteris elongata* were found on fibrous bases of the swamp tussock, *Carex secta*. This is a previously unrecorded habitat type for *Tmesipteris* in New Zealand (P.J. Brownsey pers.comm.).

Acknowledgements

My thanks to my Department of Conservation colleagues who helped in one or more of the surveys of Ihupuku Swamp, namely John Barkla, Jim Campbell, Wayne Hutchinson, Norman Marsh.

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New Zealand Native Orchid Group Conference, Iwitahi, 2-4 December 1994

Have you offered your paper or your photographs or artwork yet?
(see the centrefold in the March 1994 *Journal*)

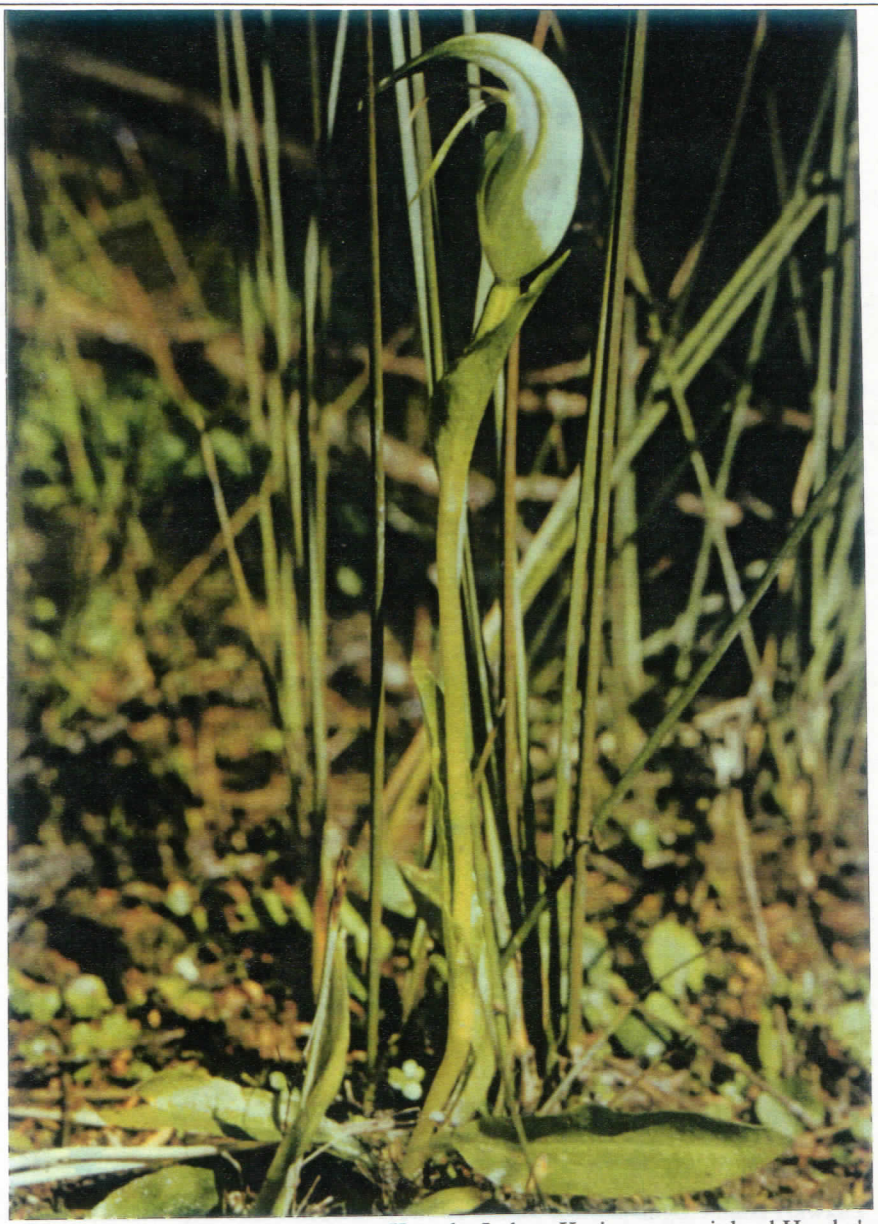

Figure 1: *Pterostylis micromega* at Kaweka Lakes, Kuripapango, inland Hawke's Bay; on boggy edge of lake with fluctuating water levels. 30 December 1974. Photograph by Colin Ogle.

Australian notes

A walk in the black forest

by Reg Angus

This poignant piece is reprinted from the A.N.O.S. Warringah Group Newsletter.

In the aftermath of the bushfires I obtained permission to assess the damage to some of my favorite local orchid sites.

Only one inspection was authorised with the condition that I reported on return and went nowhere other than the area nominated.

Close to those tracks the firefighters had been able to access, the shrubs and trees were denuded. The trunks and stems were scorched at the base but most of the upper section appeared OK and will recover.

The steeper hillsides were a scene of complete devastation, but the resilience of the Australian bush is well documented. However there was evidence of a longer term potential problem.

The charring of small bushes, ground cover grasses and particularly *Allocasuarina* spp. which were thick in the area, had allowed water from the firehoses, running back down the slopes, to erode large quantities of over-burden, which had slid down the slopes. If we receive heavy rain this effect will be magnified.

What had been treeed and bushy hillsides were almost bare, log-strewn, black, smouldering and smokey inclines which will benefit from some rain, yet will suffer severe erosion from heavy rain.

Closer to the creeks on flat ground, green grasses were already 15cm high yet it was only four days after the inferno. A domed orange fungus (*Anthracobia muellerii*) with underlying mycelium growth was in profusion on the ground (probably triggered by ethylene gas rising through the soil). This fungus is found only after fires and the authorities at the Department of Ag. had not seen it before - though it is well documented.

Insects hunted through the now cold ashes and birds hunted insects in their turn. Kookaburras, magpies, pied currawongs, noisy miners, turtle doves, pee wees and even a dollarbird and an eastern rosella were present though I saw no mammals or reptiles at the time.

The seedpods of *Hakea* spp. looked like masses of baby birds on the twigs, their beaks wide open pleading for water. The ejected seeds had landed in the hot and sometimes burning ash on the ground in order to absorb enough heat to germinate. The only other way I know to germinate these incredible seeds is to boil them in water for about twenty minutes before planting....

What of the orchid areas? Well thankfully most terrestrials other than *Cryptostylis* spp. and some *Pterostylis* spp. are dormant underground at this time of year.

My main cncern was for a tree that you may have seen in some of my photographs. It leans out over the water and about four metres of its trunk is completely hidden by *Dendrobium linguiforme.*

Every tree along the water's edge had been burnt to the ground or waterline except for one. Yes, it was still there. The orchids were singed brown, some small patcehs were burnt black but here and there were green patcehs of still live plants. I believe nearly all of that *D.*

linguiforme including the brown singed sections will survive.

So what is the future of the terrestrials in the area? David Jones is working on an autumn-flowering *Pterostylis baptistii* aff. I located in this area. It should not be long before, hopefully, the leaves will be appearing, promoted particularly by ethylene. *Prasophyllum elatum* will eventually be flowering throughout the bushfire areas in places that were not even suspected.

A year after the last fires completely ashed the Chiltern Rd area *Prasophyllum elatum* appeared with flower spikes 1.5m high. I had not even known of its existence in the previous six years of observation in the area.

Similarly *Caleana major, Genoplesium bauerii* and other orchids will flower profusely in the same way that *Caladenia menziesii* accurred as a virtual carpet in the Adelaide Hills and Victoria after the Ash Wednesday fires.

On the down side, particularly at Chiltern Rd, Ingleside, *Pterostylis daintreana* and the two forms of *P. parviflora* including *P.* aff. *parviflora* grow in moss on sandstone rocks. The enormous heat of the fires added to the superheated rocks will probably have destroyed both mosses and orchids.

Katandra Bushland Sanctuary, where only the "yurt" was saved, produced a lyre bird feasting on roast grubs and a very large Goanna (*Varinus varinus*) probably looking for handouts. There are lots of terrestrials in Katandra, but the lithophytic *Dendrobium speciosum* var. *speciosum* and the great clumps of *Liparis reflexa* plus the epiphytic *Cymbidium suave* have little chance of recovery.

Andrew Marshall of NWPS told me that at 11 p.m., where the West Head fires had been at their hottest, he had stopped his car to avoid four eastern pygmy possums, *Cecarteteus nanus,* chasing moths and other insects on the roadway and adjacent rock shelves.

When you actually see one of these mouse sized creatures (they were originally called doormouse possums) they are so delicate you wonder how they survive all their predators let alone raging bushfires.

To those who lost homes, to those who exhausted themselves fighting the holocaust whether protecting their own or other people's homes, to those who suffered fear and trauma, I extend my complete sympathy.

The luckier ones can look forward to the next couple of seasons as a fairyland of terrestrial orchid bloomings in the wild.

✾ The Australasian Native Orchid Society has changed its address: it is now GPO Box 978, Sydney NSW 2001.

✾ If you are in Australia and interested in seeing some of their native orchids, try the **Geelong Group show** at Masonic Hall, Gheringhap St, Geelong on 5-6 November; or **Port Hackling Group Spring Show** 11 September and **Sarcanthinae Show** 30 October in the Heathcote Scout Hall, Oliver St, Heathcote.

✾ Highfields Orchid Park at Toowoomba has sent a catalogue of flasks of Australian native *Dendrobium* hybrids. Contact the editor for details if you are interested.

✾ Colin Bower reported (in the A.N.O.S. Victorian Group *Bulletin* of March 1994) progress on determination of the pollinators of sexually deceptive terrestrial orchids in the subtribe *Caladeniinae* in New South Wales. None of the *Caladenias* he studied occur in New Zealand, but he did some work on *Chiloglottis valida* and *C. formicifera.* "All *Chiloglottis* so far studied have a wasp in the genus *Neozeleboria* as their primary

pollinators. However, there are many examples of shared and multiple pollinators in *Chiloglottis*....

"... *C. formicifera* has a different pollinator on the coast than ...for inland populations.... the inland pollinator was equally attracted by inland and coastal *C. formicifera.*

"*C. valida* attracted *Neozeleboria monticola* on the central tablelands, but *N. cryptoides* at Mt Kaputar.... *C. valida* and *C. trapeziformis* readily attract each other's pollinators. This is the basis for the formation of the hybrid *C* x *pescottiana...."*

Bower goes on to report the implications of his observations for orchid taxonomy: the fact that different wasps are attracted to two similar species supports the taxonomists separating the two species. For instance, *C. valida* has different pollinators from similar *Chiloglottis* species recently raised to specific rank by David Jones, thus verifying the taxonomic change.

Orchid artists

Fanny Eva Richardson (1872-c.1945)

The whole Richardson family was said to be artistic.

Fanny was the third daughter. The Richardson's roots were in Cheltenham, Gloucestershire, and they lived on "Oaklands" station at Mataura in Southland - the Hon. G.F. Richardson was in the early years of the century a Minister of the Crown. Fanny's sister Ethel achieved a reputation as a landscape artist, living at Waiho near the Franz Joseph glacier around the 1940s.

Fanny was probably self-taught. By 1937 she was teaching art to Lady Galway at Government House in Wellington. At one time she was employed at the Lands and Survey Department, and worked in the Map Room in the old Government Buildings. She exhibited at the Wellington Academy of Fine Arts in 1889 and 1891, and among the Academy papers in the National Library is a letter in her handwriting dated August 1915 in which she resigned her membership. She never married. The Lyceum Club in Wellington once had a large number of her works on their walls.

The National Museum, Wellington has a collection of Fanny Richardson's watercolours of flowers, many of them of native orchids, and among them are illustrations of *Orthoceras novae-zeelandiae*, *Dendrobium cunninghamii*, and *Pterostylis banksii;* another shows greenhoods and sun orchids.

Acknowledgement

I am indebted to Enid Goulter, a niece of Fanny Richardson, for biographical details.

Orthoceras novae-zeelandiae, watercolour by Fanny Richardson

New Zealand Native Orchid Group members, 1994

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Notes

✾ Dan Hatch wrote (7 April) on the seedhead of *Corybas cryptanthus* doubled over to break the surface, "The *Corybas* flower is protected in the bud by both the folded leaf and the floral bract, and so rises above the surface unharmed. In *C. cryptanthus* the open flower is still below the surface and in order to protect the developing ovary the plant bows its head so to speak, and shoves upwards with its shoulders, straightening out once it is clear of the clutter. This method is normal in beans and podocarps at least, and possibly in other groups."

"Epiphytic terrestrials! I have recorded from the Waitakeres on several occasions, *Acianthus sinclairii* and *Corybas acuminatus* growing two metres up the stems of *Cyathea medullaris*. The rough surface seems to make an ideal landing ground for orchid seeds blowing about in the bush. *Pterostylis alobula* and *banksii* too, seem to like perching in the crevices of buttressed tree roots, but these are really not far from the ground."

✾ Bruce Irwin wrote (14 April) on my editorial on Colenso, "You seem to consider that your Glenross *Corybas* must be *C. papillosa*, also that *C.* "Glenross" is identical with *C.* "Waiouru".

"Firstly your *C.* "Glenross" has petals almost as long as lateral sepals whereas on *C. papillosa* sepals are 2-4 times the length of the petals. That suggests *C. macranthus* of course. Colenso commented that *C. papillosa* was 'a fine species closely allied to *C. macrantha*'. Knowing Colenso's tenedency to separate out very minor variations I would read that as 'Very very close to *macrantha*'

"As to your suggestion that *C.* "Glenross" is identical to Dan's *C. macranthus* var. *longipetalus* (i.e. *C.* "Waiouru") I agree that they do appearidentical, but how can the very different flowering seasons be explained? Assuming these plants to be identical, then obviously the climate of Napier must be much less favorable than that of Waiouru. I doubt if the inhabitants of Napier would agree with that conclusion.

"*C. macranthus* var. *longipetalus* (i.e. *C.* "Waiouru") flowers in exposed habitats at Waiouru, early in September. That seems reasonable because an apparently identical plant flowers at Pukeiti near New Plymouth during July/August. Your flowers of *C.* "Glenross" reached me on 5 October. In *Journal* 49 you state that the Type sheet of *C. papillosa* is dated December 1885 which can hardly be correct unless that plant was *C. macranthus* as I suspect." - *thanks Bruce, this is exactly the sort of debate the Journal welcomes - Ed.*

WAITAKERE WONDER, 24-26 June 1994

Come to the Waitakeres, stay in the Huia Lodge and see the orchids of Auckland.
The Lodge sleeps 24, but if we fill it up other arrangements can be made. Tea, milk, sugar, coffee and the Saturday night meal will be provided at $12 per head and there will be a small charge for accomodation. Other food, sleeping bags, and clothing and footwear for wet weather will be necessary.
Contact Allan Ducker - 09 8462345 or 92 Mt Royal Ave, Mt Albert, Ak3.