

Table 1. The amounts of nectar taken from flax flowers at low and high tides at four Wellington sites. All flax plants grew within 30 m of the sea except a few at Hokio which grew up to 1 km inland. Only newly opened, fresh, pollen-laden flowers were sampled. A micropipette was used to extract nectar from the plants at Evans Bay and Moa Point but a glass syringe was used at the other two sites.

Date	Location	Number of flowers	Tide	Time (hrs)	Nectar ( $\mu$ l)	mean $\mu$ l/flower
<i>Phormium tenax</i>						
10.12.94	Hokio Bch	100	High	1706	3.2	32
11.12.94	Hokio Bch	100	Low	1100	6.2	62
15.1.95	QEII Park	100	High	0935	6.5	65
15.1.95	QEII Park	100	Low	1530	5.2	52
<i>Phormium cookianum</i>						
22.10.94	Evans Bay	100	High	2018	2.3	23
22.10.94	Evans Bay	100	Low	1416	1.2	12
24.10.94	Moa Point	100	High	0912	6.5	65
24.10.94	Moa Point	100	Low	1338	7.0	70

## Further Notes on *Corybas rivularis*

Bruce Irwin<sup>1</sup>

Since I wrote "*Corybas rivularis* - One Species or Several?", which was published in Wellington Botanical Society Bulletin No. 46, continuing observations have modified some of my views.

### **CORYBAS "A"**

Although when well grown, *Corybas* "A" usually appears quite distinct, occasional plants are found which tend towards other forms at present included within *C. rivularis* in the broad sense. I have sometimes recorded these plants as *Corybas* "a" (not capital A). Possibly some of these plants are hybrids, but I am more inclined to regard them as *Corybas* "A" which, because of unsuitable growing conditions, do not fully develop characters which make *Corybas* "A" so distinctive. One group of such plants grows on an east-facing bank near Waitomo. Most of the bank is moderately fertile and *Corybas* "A" is common,

<sup>1</sup> 192 Bellevue Road, Tauranga.

but on one small, almost bare, slimy patch, flowers of quite different appearance occur. The leaves are very small. Flowers, though red, are not the intense, almost black/red of *Corybas* “A”. The labellum is narrower and much shorter than usual so that the opening to the column cavity appears lower on the labellum than usual and it lacks the bead-like gland. All these differences might be caused by poor nutrition.

In bog conditions at Rangataua, a reddish *Corybas* grows, often almost engulfed in cushions of *Sphagnum* moss. Normal *Corybas* “A” seems to be absent, replaced by this *Corybas* “sphagnum” which resembles the poorly nourished Waitomo plants. Although I still use the tag name *C.* “sphagnum” I suspect that these Rangataua plants are really *Corybas* “A”. I am aware of other aberrant colonies which may or may not prove to be *Corybas* “A” but more study is required.

### **CORYBAS “WHISKERS”**

(A form not mentioned in “One Species or Several?)

Quite distinct forms of *Corybas rivularis s.l.* can appear so alike that very careful examination is necessary to distinguish between them. For many years I have considered the small green-flowered *Corybas* on Mt Messenger as distinct. Occasionally other small green flowers were found, often remote from North Taranaki which seems to be the stronghold of *C.* “Mt Messenger”. Outwardly these flowers resembled *C.* “Mt Messenger” and that is what I presumed them to be. Then in September 1991, inland from Waverley, I found a small, green *Corybas* on a bank which was rather drier than those usually favoured by *C.* “Mt Messenger”. The flowers reminded me of a watercolour of apparently identical plants from New Plymouth which I had painted 40 years previously. I applied the tag name *C.* “whiskers” because of the pale stubble on margins and inner surface of the labellum (Fig. 1). the stubble is obvious only when the labellum is viewed in good light from the side. For several years the Waverley colony was the only one known to me.

During the 1994 flowering season, I monitored a *Corybas* colony near Horopito. When green buds appeared above sessile leaves I reasoned that the plants must be either *C.* “Mt Messenger” or *C.* “rest area”. On 20th October flowers were open. Clearly they were not *C.* “rest area”, so in answer to my companion’s question, I stated that they were *C.* “Mt Messenger”. I regretted that hasty identification when next day I examined the flowers carefully. Though not quite identical to *C.* “whiskers” from Waverley, they matched closely enough.

During the next few weeks I found four more colonies between Tangiwai and Arapuni. With each finding, I was reminded of small, green *Corybas* sent to me in October 1993 by Noeleen Clements from Mt Tiger near Whangarei and by Maureen Young from near Warkworth. Maureen’s specimens were so small that I felt the tag name *C.* “ratty” would be appropriate. Were *C.* “whiskers” and *C.*

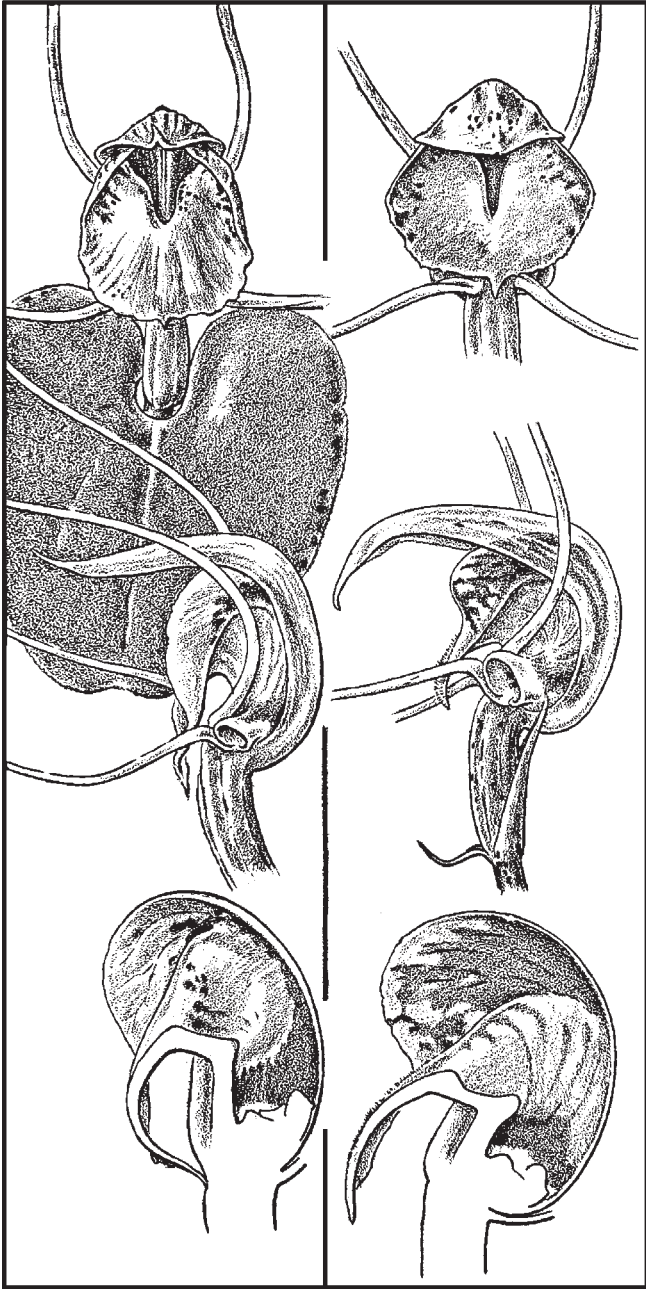


Fig. 1. Comparative views of *C.* "Mt Messenger" (left) and *C.* "whiskers" (right).

“ratty” one and the same? I wrote to Maureen. She was able to send very late flowers which did have stubble but were already collapsing. Fresh flowers this coming season may confirm my suspicions.

Because of the extraordinary flower shapes, it is difficult to carry in one’s memory the differences between any two forms within *Corybas rivularis*. The following notes should help to distinguish *C.* “whiskers” from *C.* “Mt Messenger”.

1. *C.* “whiskers” has pale stubble on the inner surface of the labellum. *C.* “Mt Messenger” does not.
2. *C.* “whiskers” is much deeper proportionally from front to rear of the flower.
3. *C.* “whiskers” has a definite flat undersurface between the two points of flexure of the labellum, whereas the undersurface of *C.* “Mt Messenger” forms a continuous curve.
4. *C.* “whiskers” has comparatively enormous flaring auricles on the labellum.
5. The labellum tip of *C.* “whiskers” often juts forward aggressively. That of mature *C.* “Mt Messenger” reflexes to lie against the ovary.

#### ***CORYBAS* “MT MESSENGER”**

It is possible that until I recognised *C.* “whiskers” as a distinct form, some flowers were identified incorrectly as *C.* “Mt Messenger”. One suspect colony is that mentioned in the article “One Species or Several?”, growing within 3 m of a dry ridge top at Omoana.

#### ***CORYBAS* “WAIOURU” (*C. macranthus* var. *longipetalus*)**

Extensions to the known range are – Egmont National Park, Rimutaka Range and probably localities in the South Island.

#### ***CORYBAS* “REST AREA”**

The original colony has been rediscovered. Two healthy colonies are now known to exist 33 km apart.

#### ***CORYBAS* “KAIMAI”**

*C.* “Kaimai” seems to be replaced, north of Auckland city, by *C.* “ratty” and it shares important characteristics with *C.* “whiskers” and even *C.* “Kerikeri”. It is tempting to regard them all as a single very variable species but since *C.* “Kaimai”, *C.* “Kerikeri” and almost certainly *C.* “whiskers” all occur at New Plymouth, this can hardly be so.