NEW ZEALAND NATIVE ORCHID GROUP Newsletter no.7 September 1983

Dear Member,

Summer is almost here! It's actually a bright, mild, sunny day here while I'm writing this, no matter that it seems to be our first for months! Orchids are popping up all over the place and it's time to put on our boots and go and have a look at past discoveries, always hoping for new ones.

My article on the new species of Pterostylis resulted in a very prompt reply (I'd only just posted the newsletter!) from David Morgan of Palmerston North; enclosing 2 slides of an

identical plant found just north of Wanganui. Thanks very much David for extending the range of this species.

The only other thing I have to report is that owing to a very poor response re a native orchid conference, plans are shelved for this year. Thanks to those who did reply, maybe next year more will feel able to 'jump in' and give it a go.

Thanks to those who have contributed, articles. What about all of you who haven't? There's a wealth of information out there somewhere waiting to be shared i I enjoy reading all the snippets and from the encouraging response to the newsletter, so do many other people, but it needs contributors to keep it going.

> Happy orchiding, Dorothy Cooper, 14 Avalon Crescent, Lower Hutt.

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ORCHIDS OF THE WANGANUI DISTRICT

Kevin Luff

(Kevin also reports that in December 1981 he found a colony of about 20 plants of Acianthus vlridis up the Ohakune Mountain Road, Mt. Ruapehu, about 3000' up, plants were not flowering.)

## Wanganui Orchids:

Spiranthes sinensis; few localities in damp places on roadsides near Raetihi

Acianthus fornicatus; common in beech and lowland forest

Adenochilus gracilis: enormous colonies near Raetihi in beech

Caladnnia catenata: frequent in various situations

Chiloglottis cornuta: common everywhere

Corybas aconitiflorus: two localities found; both on high beech ridges - at Atene Reserve and ridge near Wanganui River

Corybas oblongus: few localities in lowland bush and on hill country banks

Corybas trilobus & macranthus: common everywhere
Corybas orbiculatus: frequent in lowland bush and hill country banks

Corybas cryptanthus: was recorded from Wanganui in Allan but I have not seen it Thelymitra longifolia: very common on banks and in scrub

T. hatchi single locality on hill country bank

T. pauciflora; few localities on hill country banks

Pterostylis banksii: common in hill and lowland hush

P. banksii var. patens: locality south of Raetihi on a bank

P. graminea: few localities in lowland bush

P. montana: common in hill country

P. irsoniana: single locality in hill country bush

P. alobula: common everywhere

Orthoceras strictum: few localities on hill country banks Prasophyllmn colensoi: few localities on hill country banks

P. nudum: two localities known, both in sphagnum bogs

Microtis unifolia: common everywhere

Earina autumanalis & macronata: common everywhere

<u>Dendrobium cunninghamii</u>: common everywhere, mostly in hill country where there is a higher rainfall

Drymoanthus adversus: common, mostly i:i higher rainfall areas

Bulbophyllum tuberculatum: four localities known all in lowland forest, three

localities are in reserves, all plants are on Tawa trees

Bulbophyllum pygmaeum: three known localities all on Hinau trees

Chris Ecroyd 32 Haniera Place, Rotorua

No doubt others have found that herbarium specimens of orchids pressed and dried in the usual manner are difficult to work with. The flowers are generally distorted and you can never quite see the critical part you need unless the specimen has been pressed with great care. A simple solution to this problem is to dry the flowers by immersing them in finely powdered silica gel (40-60 mesh) with some indicator crystals added. From time to time the silica gel will need to be oven-dried. Spread the crystals out in a flat container and dry at 190°C until the indicator crystals turn blue again. The silica gel can be kept ready for use in an airtight container of suitable size.

Drying could take 3-5 days depending on the size of the plant and the dryness of the silica gel. Once dried, specimens can be stored in airtight jars and if kept dry, the natural shape and structure of the flower can be retained indefinitely. The dried flowers readily absorb moisture from a damp atmosphere and become limp. Alternatively, the dried flowers can be treated like normal herbarium specimens though larger flowers like <a href="Pterostylis">Pterostylis</a> may need to be pressed lightly.

The results so far with <u>Caladenia</u>, <u>Pterostylis</u> and <u>Spiranthes</u> have been encouraging. Detailed flower structure can be clearly seen but the colour retention which is initially very good has slowly faded in some specimens since drying.

I would be interested in receiving any comments on how successful others find this method.

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OCCURRENCE OF THELYMITRA IN 'TOP OF THE SOUTH' REGION

Jean Jenks, Upper Moutere

- Thelymitra carnea is relatively plentiful on the pakihi lands of Golden Bay.

  Plants are small, usually with only 2 flowers which bloom Oct. and Nov,

  The clay banks and roadsides of Kaiteriteri and the Marlborough Sounds are
  also locations where they thrive in poor soil.
- T. dentata flowering during Dec. and early Jan. has been observed growing on clay banks and in poor soils along with T. hatchii.
- <u>T. decora</u> is one of the rarer orchids by comparison. Isolated plants are located in only a few areas. Both situations have similar conditions of scrub which is dominated by manuka, again harsh soil type.
- <u>T.hatchii</u> is one of the later flowering sun orchids. Again plants thrive in dry, stony, clay soils. Large plants in an old quarry site near Golden Bay are up to 60cm tall with many blooms on the flowering spike during Nov. to Jan. period.
- T. formosa isn't abundant in this area, but a few plants have been observed growing on a clay track bank in Cobb Valley. A mulch of bush litter was provided for these orchids which flowered in Jan.
- <u>T.ixioides</u> is an Oct. Nov. flowerer. The plants usually prefer full sun and are abundant on the pakihi areas of Golden Bay,
- T. pauciflora and T. longifolia appear to be less particular in soil type or situation requirements. Both are very successful natives found growing abundantly in most conditions, even in pine plantations. Flowering period is again governed by the area usually being from Oct. through to Dec.
- <u>T. pulchella</u> with this plant there is a wide colour range varying from white to blue and bluish-mauve. Flowers appear from Nov. to Jan. and grow in similar habitats to the others.
- T. venosa owing to this species love of a moist mossy habitat it isn't plentiful in the general area. Some quite large clumps do thrive in a swampy area south of Tadmor. Most of the flowers are the typical blue, but a few of the pink variety have been seen in Jan.
- Of the 12  $\underline{\text{Thelymitra}}$  previously recorded in New Zealand, the above list numbers 10. Of the two remaining,  $\underline{\text{T. matthewsii}}$  hasn't been reported since early this century and could now be extinct, and  $\underline{\text{T. intermedia}}$  is not fond of the southern climate and favours the northern situation of the Auckland area.

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## COMMENT ON CORYBAS CRYPTANTHUS

E.D. Hatch

(This paper should be read in conjunction with -

Hatch - Notes on the structure and development of the terrestrial orchids Newsletter no.2,p.4.

Campbell E.O. - The morphology of the fungal association of <u>Corybas cryptanthus</u> - J. Roy. Soc. N.Z. 2 1972,p.43)

In order to understand <u>Corybas cryptanthus</u> it is necessary to know something about the development, of the more normal Corybas species.

Corybas trilobus, since it comes into the story, will do as an example. In Auckland the trilobus tubers begin to sprout about August, meristem soon branches, one rhizome running along the surface beneath litter, another rising towards the light. The horizontal rhizome develops secondary branches which wander in all directions for several centimetres and eventually form terminal tubers (enlarged nodes), The size of the tubers (on which depends the size of the next season's plants) varies with the amount of organic matter and mycorrhizal fungi in the surface litter. The vertical rhizome goes on to develop a leaf, which again varies with the size of the original tuber, the larger the tuber the larger the leaf. Leaf size also affects the size of the new season's tubers, the greater the area of chlorophyll exposed to the light, the more nourishment synthesised, and so until, after several season's growth, the tuber is large enough (has enough food stored) to produce a flower and the tall seeding peduncle. This elongation of the peduncle, which occurs also in Chiloglottis, assists in dispersing the seed over a wider area than would be possible from ground level. The new tubers produced by the flowering/seeding plant are usually (not invariably) small, and the build-up cycle begins all over again. In Auckland the flowering plants begin to show in June, followed (as 1 said above) in August by masses of leaf-only plants, so that until the end of the season a colony will present a mat of green, soil-hugging leaves, scattered through with a much smaller number of seeding peduncles. When cryptanthus is also present, its peduncles are only distinguishable by a few red flecks on the stem and the absence of a leaf. Not surprising that it is overlooked! In the Atuanai State Forest I have also seen trilobus growing with Yoania so that the uninitiated could quite easily assume that the leafless Yoania flower-stems belonged to the flowerless leaves of the Corybas. So much for trilobus.

<u>Corybas cryptanthus</u> - It will be obvious from the above that the chlorophyll in the green leaf provides nourishment for the tubers to store, and that the tubers (a) tide the plant over the dry/cold season and (b) provide a means cf vegetative increase. In the epiparasitic group (<u>Yoania</u>, <u>Gastrcdia</u> and <u>Corybas cryptanthus</u> in New Zealand) nourishment is obtained from fungi which are themselves parasitic on host plants.

<u>C. cryptanthus</u> lives then, on the beech and manuka at second hand, much as we could be said to live on grass by eating the animals which use it for food. The chlorophyll, now no longer necessary, disappears from the plant and the leaf becomes redundant and shrinks to a mere bract which sheaths the flower in the bud. The rhizome being perennial the tubers are reduced to tiny globules in the axils of the bracts. The plant lives in areas which are more or less damp throughout the year. In the event of the substrate drying out, which it sometimes does, tubers are formed. Vegetative reproduction is achieved by the plant growing and branching ahead and dying away behind. When the point of dissolution reaches a fork the branch rhizome becomes a separate plant.

Corybas cryptanthus was first found by William Colenso in a 'Fagus forest' near Norsewood in 1860. It was growing among trilobus and this confused Colenso considerably. In Trans. N.Z. Inst.16:1604,p.336, he described (as Corysanthes hypogaea = underground) a composite plant with the green leaves and green-and-red flowers of trilobus, and the underground flowering habit of cryptanthus. This description is so nearly that of trilobus that it is treated as a synonym, (see also Flora 2:1970, p.120)\*

There is no further record of cryptanthus until September 1924, when Mrs E.A. Hodgson found it at Hendley in northern Hawkes Bay (A.P. Druce W'gtn, Bot. Soc, Bull. 26: January 1953 p. 19).

Between January and March 1934 K.W. Allison collected plants from 3 localities on the Napier road from Taupo to Opepe, and placed specimens in the herbarium at AK. (Hatch Trans. R.S.N.Z. Bot.2:1963, p.188).

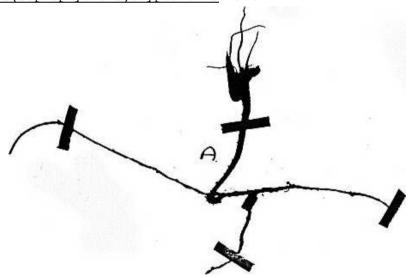
On 25 October 1949» Bruce Irwin and Owen Gibson were returning to New Plymouth from a holiday in the far north and Stopped near Wellsford for lunch.(Irwin Wgtn. Bot. Soc. Bull.23:September 1950,p.23; Hatch N.Z. Gardener September 1951,p.27). Here in manuka scrub Owen found a most unusual colony of seeding Corybas. which lacked leaves, tubers and chlorophyll, and yet appeared to be thriving. Late in the evening of that same day they brought me specimens and sketches.

In December 1949 Bruce Irwin found 3 seeding plants growing with <a href="trilobus">trilobus</a> under beech in the Waitotara valley near Wanganui.

On June 5 1950, Bruce Irwin and I, with Frank Bartlett of Silverdale, went to Wellsford and after a little trouble (the tree to which it had been tied had blown over) found the handkerchief which marked the spot. Of the original colony there was no trace, (perhaps the digging around had upset the delicate balance of the association) but after some search we found 2 plants

in early bud. On 29 July 1950 Bartlett and I went again to Wellsford and this time our persistence was rewarded by a single plant in full flower, which I described (Trans. R.S.N.Z.79:1952,p.366,t.71) as Corybas saprophyticus.

Alick Dockrill was quick to point out to me that this name had been used by Schlechter for a quite different species of <u>Corybas</u> from New Guinea in 1911, and in Trans. R.S.N.Z.83:1956.p.577. I renamed it <u>Corybas cryptanthus</u> = hidden flower. It has since popped up all over the place, usually being sat on for lunch, mainly under <u>Nothofagus solandri</u>. but sometimes with manuka (<u>Leptospermum scoparium</u>). Corybas(saprophyticus)cryptanthus Hatch



A no.569 Leptospermum scrub between Warkworth and Wellsford. 29.7.1950

B same locality; 25.10.1949 J.B.Irwin and O.E. Gibson