

# Orchids of the Wellington district

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compiled by Ian St George

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## Introduction

A.P. (Tony) Druce's "Orchids of the Wellington District" was published in the *Bulletin of the Wellington Botanical Society* in 1950, and enlarged in a number of subsequent papers in the same journal. Many Wellington enthusiasts will have a copy of this valuable reference, but the papers are reprinted here (with permission from Carol West, editor of the *Bulletin*) because they should be universally available.

Dorothy Cooper's recognition and formal description (*N.Z. J. Botany* 1983; 21: 97-100) of *Pterostylis cardiostigma* from Day's Bay was an important event in Wellington orchidology. Otherwise new records of orchid species found here after 1968 have mostly been made in the *Newsletter* (now the *Journal*) of the New Zealand Native Orchid Group: the records I can trace are referred to in the species list at the end of this booklet. I am grateful to Gordon Sylvester for information on other Wellington species.

Orse, alas, has changed many of these manuka hillsides, and several of the species Druce found forty years ago cannot be found in the modern environs. Taxonomists, alas, have changed many of the orchid names, and several of those Druce used forty years ago cannot be found in the modern lists -

<i>Acianthus fornicatus sinclairii</i>	= <i>A. sinclairii</i> ;
<i>Acianthus reniformis oblongus</i>	= <i>Cyrtostylis oblonga</i> ;
<i>Caladenia carnea minor</i>	= <i>C. minor</i> ;
<i>Corybas aconitiflorus</i>	= <i>C. cheesemanii</i> ;
<i>Corybas macranthus typicus</i>	= <i>C. macranthus</i> ;
<i>Corybas rivularis</i>	= <i>C. acuminatus</i> ;
<i>Orthoceras strictum</i>	= <i>O. novae-zeelandiae</i> ;
<i>Prasopphyllum nudum</i>	= <i>Genoplesium nudum</i> ;
<i>Pterostylis banksii patens</i>	= <i>P. patens</i> ;
<i>Pterostylis banksii typica</i>	= <i>P. banksii</i> ;
<i>Pterostylis barbata</i>	= <i>P. plumosa</i> ;
<i>Pterostylis furcata micromega</i>	= <i>P. furcata</i> ;
<i>Pterostylis montana typica</i>	= <i>P. montana</i> ;
<i>Pterostylis nana</i>	= <i>P. puberula</i> ;
<i>Pterostylis trullifolia alobula</i>	= <i>P. alobula</i> ;
<i>Pterostylis trullifolia gracilis</i>	= <i>P. trullifolia</i> ;
<i>Pterostylis trullifolia rubella</i>	= <i>P. brumalis</i> ;
<i>Sarcophilus adversus</i>	= <i>Drymoanthus adversus</i> ;
<i>Thelymitra venosa</i>	= <i>T. cyanea</i> ;
<i>Thelymitra caesia</i>	= <i>T. pulchella</i> ;
<i>Thelymitra pachyphylla</i>	= <i>T. pulchella</i> .

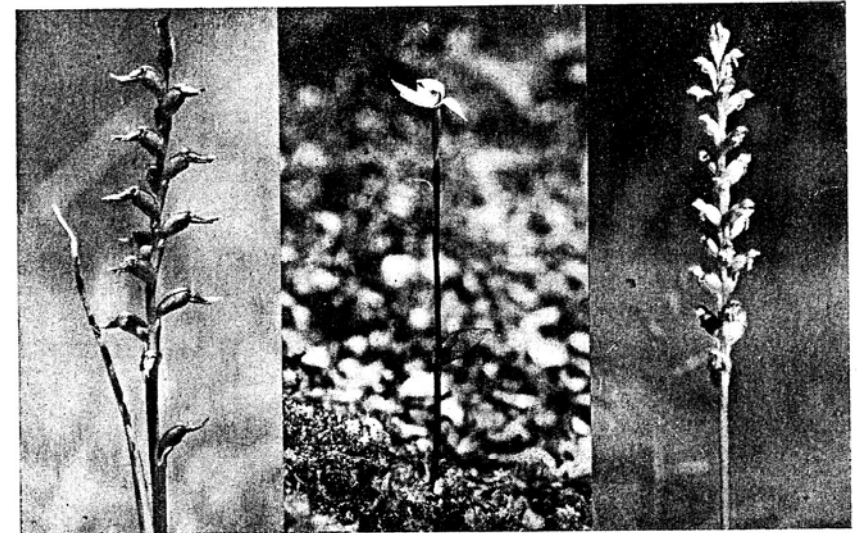
## Orchids of the Wellington District

A. P. DRUCE

The hills around Wellington have at the present time one of the richest orchid floras in New Zealand. Only the Auckland district surpasses Wellington. Yet few people are aware of this and fewer still have searched closely for these fascinating plants. It is not surprising therefore that several of the orchids growing about Wellington have remained unrecorded for a long time. Altogether forty-two orchid species and varieties are now known from this district.

For the purpose of this article the Wellington district is taken to include all the Rimutakas, all the western hills and to extend up to the tops of the Tararua Mountains. Very few orchids are found on the western hills (i.e., the hills to the west of the Hutt Valley and Wellington Harbour) from Cook Strait north to about Haywards. Mixed bush clothed these hills originally—beech was absent. The soils differ from those across the harbour and second-growth is more often tauhinu than manuka. In some way or other the conditions are not right for most of the orchids.

Over the rest of the district however, wherever manuka holds sway there are large numbers of orchids of many species. On Mrs.



*Prasopphyllum colensoi* (left), *Adenochilus gracilis* (centre) and *Microtis unifolia* (right).



*Pterostylis nana* (left) and *Pterostylis barbata* (right).

Samson's section at Pinehaven for instance over twenty species may be found and a sample area nearby showed that at least 10,000 individual orchids grow per acre in that locality. There cannot have been anything like these numbers a century ago for most of the manuka land was in bush and the orchids of the bush, besides being different, are comparatively few in number. The dominant trees on most of the clay hills were species of beech. The soil was thin and the pastures established after clearing were soon invaded by manuka which was probably restricted to river-flats, slips and a few clearings originally. Whether the orchids were all present to start with or whether some species came in from elsewhere it is impossible to say, but the number of plants must have increased manyfold as the manuka spread. If left long enough manuka scrub would lead to forest again on these hills but every year there are numerous destructive fires. Not only do the fires prevent regeneration but they favour the spread of gorse so that manuka, after increasing rapidly, is now steadily decreasing. Orchids do not thrive on gorse-covered hillsides—neither do botanists.

For anyone wishing to search for the manuka orchids, the best area is probably between Silverstream and Upper Hutt on the low

hills immediately to the east of the Hutt Valley. But there are large areas that can be looked into right along both sides of the Rimutakas, along the eastern foothills of the Tararuas from the Puffer to Mt. Holdsworth and on the western side of the Hutt Valley from about Haywards to the lower end of the Akatarawa.

In the relatively undisturbed tussock, scrub and bush of the ranges, the orchids are probably growing much the same as they were a hundred years ago. Quite a few species are found but most of them do not occur in very great numbers.

In constructing the key to the local orchids (p. 9) care has been taken to avoid the use of technical terms as far as possible. It is hoped that by its use any plant may be tracked down with a minimum of trouble—provided of course the plant can be recognized as an orchid to start with. The key is designed for fresh material and is practically useless for dried plants. Specimens, except in the case of epiphytes, must also be in flower. Although made specifically for the Wellington district, the key can be used with reasonable safety as far north as Wanganui, Taihape and Central Hawke's Bay. If the recent volumes of the Transactions of the Royal Society of New Zealand are available, they can be consulted with benefit, for many of the orchids are illustrated there with clear drawings by Mr. E. D. Hatch. The key should not be regarded as infallible for there are doubtless other orchids still to be found in the district, especially in the genera *Thelymitra* and *Pterostylis*.

The diagram showing the flowering periods of some of the orchids (p. 8) is based on observations made in the Hutt Valley over the past four seasons. In most cases the higher the altitude at which the individuals of a species grow, the later they come into flower. The flowering periods in this diagram are only for the range, sea-level to 1,500 feet. Those species which ascend beyond 1,500 feet extend their flowering periods by amounts varying from a week to over a month. The diagram should help both in identifying an orchid in flower and in knowing when to look for a particular species.

It only remains now to indicate which orchids are typically found in manuka, which in forest, etc., and to note in parenthesis the distribution of those that are not widespread.

#### Orchids of Manuka Scrub

<i>Thelymitra longifolia</i>		<i>P. barbata</i> (Day's Bay, Silverstream to to the Puffer)
<i>T. pauciflora</i>		<i>Acianthus reniformis oblongus</i>
<i>T. decora</i>		<i>A. fornicatus sinclairii</i>
<i>T. irioides</i> (Wallaceville)		<i>Corybas macranthus typicus</i>
<i>T. caesia</i> (Silverstream, Upper Hutt and the Puffer)	Upper	<i>C. oblongus</i>
<i>T. venosa</i> (Tararuas)		<i>Prasophyllum colensoi</i>
<i>Pterostylis graminea</i>		<i>P. nudum</i>
<i>P. banksii typica</i>		<i>Microtis unifolia</i>
<i>P. nana</i> (Silverstream)		<i>Chiloglottis cornuta</i>

<i>P. foliata</i> (Homedale, Mangaroa and the Puffer)	<i>Orthoceras strictum</i>
<i>P. trullifolia</i>	<i>Caladenia carnea minor</i>
<i>P. montana typica</i>	<i>Gastrodia cunninghamii</i>
<i>P. venosa</i> (Tararuas)	<i>Aporostylis bifolia</i>
	<i>Calochilus paludosus</i> (Upper Hutt)

#### Orchids of the Bush

<i>Earina mucronata</i>	<i>Pterostylis banksii typica</i>
<i>E. autumnalis</i>	<i>P. graminea</i>
<i>Dendrobium cunninghamii</i>	<i>P. trullifolia</i>
<i>Sarcochilus adversus</i>	<i>Gastrodia cunninghamii</i>
<i>Bulbophyllum pygmaeum</i>	<i>Adenochilus gracilis</i> (Ruamahanga basin)
<i>Chiloglottis cornuta</i>	<i>Corybas trilobus</i>
<i>Acianthus reniformis oblongus</i>	<i>C. macranthus typicus</i>
<i>A. fornicatus sinclairii</i>	<i>C. rivularis</i> (Mangatainoka R.)

#### Orchids of Subalpine Scrub and Snow Tussock

<i>Pterostylis venosa</i> (Tararuas)	<i>Lyperanthus antarcticus</i> (Tararuas)
<i>P. banksii</i> var. (Tararuas)	<i>Aporostylis bifolia</i>
<i>Prasophyllum colensoi</i>	

#### Orchids of Wet Banks

<i>Corybas oblongus</i>	<i>Corybas</i> sp.
<i>C. macranthus typicus</i>	<i>Pterostylis banksii typica</i>

#### Orchids of Bog and Swamp

<i>Spiranthes sinensis</i> (Waikanae)	<i>Prasophyllum colensoi</i>
<i>Thelymitra venosa</i> (Tararuas)	<i>Aporostylis bifolia</i>
<i>Microtis unifolia</i>	

#### NEW RECORDS

The following orchids have not previously been recorded from the Wellington district. Specimens are deposited in the Herbarium of the Botany Division.

- Thelymitra pauciflora*. Manuka scrub, plentiful.  
*T. ixioides*. Manuka scrub near Wallaceville, rare.  
*T. caesia*. Manuka scrub near Silverstream and Upper Hutt, local; on the Puffer, plentiful.  
*T. decora*. Manuka scrub, common.  
*Pterostylis montana typica*. Manuka scrub, frequent.  
*Spiranthes sinensis*. Waikanae estuary, collected by Miss Neumann.

On the evidence of occasional intermediates, it is suggested that the following crosses take place amongst the orchids in the district:

- Thelymitra decora* X *pauciflora*.  
*Pterostylis banksii typica* X *montana typica*.  
*P. b. t.* X *graminea*.

FLOWERING PERIOD —	JUN:JLY:AUG:SEP:OCT:NOV:DEC:JAN:FEB:MAR:APR:MAY											
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
<i>Pterostylis trullifolia</i>	—	—										
<i>Acianthus fornicatus sinclairii</i>	—	—										
<i>Acianthus reniformis oblongus</i>			—	—								
<i>Corybas trilobus</i>			—	—								
<i>Pterostylis nana</i>				—	—							
<i>Corybas macranthus typicus</i>					—	—						
<i>Corybas oblongus</i>						—	—					
<i>Pterostylis graminea</i>							—	—				
<i>Chiloglottis cornuta</i>								—	—			
<i>Pterostylis banksii typica</i>									—	—		
<i>Earina mucronata</i>										—	—	
<i>Pterostylis barbata</i>											—	—
<i>Pterostylis foliata</i>												—
<i>Caladenia carnea minor</i>												—
<i>Thelymitra pauciflora</i>												—
<i>Thelymitra decora</i>												—
<i>Thelymitra longifolia</i>												—
<i>Pterostylis montana typica</i>												—
<i>Microtis unifolia</i>												—
<i>Thelymitra ixioides</i>												—
<i>Prasophyllum colensoi</i>												—
<i>Thelymitra caesia</i>												—
<i>Gastrodia cunninghamii</i>												—
<i>Thelymitra venosa</i>												—
<i>Orthoceras strictum</i>												—
<i>Dendrobium cunninghamii</i>												—
<i>Prasophyllum nudum</i>												—
<i>Earina autumnalis</i>												—

Flowering periods of some of the orchids.

#### NAME CHANGES

Since the publication of Cheeseman's Manual in 1925 a number of the orchids have had their names changed. To facilitate reference to the Manual, a list of the new names used in this article is appended, with the old names in brackets:

*Acianthus fornicatus sinclairii* (*A. sinclairii*), *Acianthus reniformis oblongus* (*Cyrtostylis oblonga*), *Aporostylis bifolia* (*Caladenia bifolia*), (*Caladenia carnea minor* (*C. minor*), *Corybas* spp. (*Corysanthes* spp.), *Prasophyllum nudum* (*P. rufum*), *Pterostylis nana* (*P. puberula*), *Spiranthes sinensis* (*S. australis*). *P. montana* is a new species. *Thelymitra uniflora* is included in *T. venosa* as a variety.



## KEY TO THE ORCHIDS OF THE WELLINGTON DISTRICT

1. Growing on the ground ..... 2  
 Growing on the trunks and branches of trees or on rocks ..... 21
2. Leafless ..... 3  
 Leaf solitary (not counting small bracts up the stem) ..... 4  
 Leaves more than one ..... 12
3. Stem green ..... *Prasophyllum nudum*  
 Stem mottled grey or brown ..... *Gastrodia cunninghamii*  
 (The rather similar *G. sesamoides* is also in the district but  
 is rarely met with.)
4. Leaf tubular ..... 5  
 Leaf flat or channelled ..... 6
5. Flowers green, with tiny hoods ..... *Microtis unifolia*  
 Flowers greenish or brownish, without  
 distinct hoods ..... *Prasophyllum colensoi*
6. Leaf short and broad ..... 7  
 Leaf narrow ..... 10
7. Flower just above the leaf, solitary  
 (stalk lengthens after flower is over) ..... *Corybas* (5 spp.) 25  
 Flowers(s) well above the leaf ..... 8
8. Leaf closely appressed to the ground ..... *Acianthus reniformis oblongus*  
 Leaf more or less midway up the stem ..... 9
9. Flower solitary, white ..... *Adenochilus gracilis*  
 Flowers more than one, green ..... *Acianthus fornicatus sinclairii*
10. Leaf covered with small hairs ..... *Caladenia carnea minor*  
 Leaf without hairs ..... 11
11. Flower(s) with a conspicuous red "beard"  
 Flower(s) without such a "beard" ..... *Calochilus paludosus* 18
12. Stems annual, easily crushed ..... 13  
 Stems perennial, firm ..... 23
13. Flower solitary ..... 14  
 Flowers more than one ..... 18
14. Leaves two (not counting small bracts up the stem) ..... 15  
 Leaves more than two ..... *Pterostylis* (8 spp.) 30
15. Leaves covered with small hairs ..... *Aporostylis bifolia*  
 Leaves without hairs ..... 16
16. One leaf much further up the stem than the  
 other ..... *Lyperanthus antarcticus*  
 Leaves opposite or nearly so ..... 17
17. Flower hood about  $\frac{1}{2}$  in. high, leaves stalked (short in exposed  
 situations) ..... *Chiloglottis cornuta*  
 Flower hood about  $\frac{3}{4}$  in. high, leaves not stalked but  
 gradually narrowed to the base ..... *Pterostylis venosa*
18. Flower(s) with two erect "horns" ..... *Orthoceras strictum*  
 Flower(s) without such "horns" ..... 19
19. Flowers small,  $\frac{1}{2}$  in. or less, numerous, spirally  
 arranged ..... *Spiranthes sinensis*  
 Flower(s)  $\frac{1}{4}$  in. or more, few or many ..... 20
20. Flower(s) hood-shaped, greenish or brownish ..... *Lyperanthus antarcticus*  
 Flower(s) not hood-shaped, white, blue, blue-violet, violet  
 or violet-purple (when opened) ..... *Thelymitra* (6 spp.) 39
21. Leaves very small, less than  $\frac{1}{2}$  in. long ..... *Bulbophyllum pygmaeum*  
 Leaves more than  $\frac{3}{4}$  in. long ..... 22
22. Leaves broad ..... *Sarcochilus adversus*  
 Leaves narrow-linear ..... 23
23. Stems branched, flowers few together  
 (1-4 usually) ..... *Dendrobium cunninghamii*  
 Stems unbranched, flowers many together ..... *Earina* (2 spp.) 24

24. Flowering in spring, sheathing bases of leaves firmly  
 attached to stem ..... *Earina mucronata*  
 Flowering in autumn, sheathing bases of leaves coming  
 away from stem when pulled ..... *Earina autumnalis*

## CORYBAS (CORYSANTHES) SPECIES

25. Leaf stalked (short in exposed situations) ..... 26  
 Leaf not stalked ..... 27
26. Leaf tip more or less three-lobed ..... *C. trilobus*  
 Leaf tip rounded or with a small point ..... *C. macranthus typicus*
27. Leaf tip drawn out, tapering to a point ..... *C. rivularis*  
 Leaf tip rounded or with a small point ..... 28
28. Leaf base rounded or slightly notched, thread-like parts  
 of flower less than 1 in. long ..... *C. oblongus*
29. Leaf base deeply notched, thread-like parts of flower  
 $1\frac{1}{2}$  ins. long or more ..... *C. sp.* (unnamed)

## PTEROSTYLIS SPECIES

30. Most of the leaves close together near the base of  
 the stem ..... 31  
 Leaves all spaced at intervals up the stem ..... 35
31. Flower with a protruding "tongue" covered with  
 golden-yellow hairs ..... *P. barbata*  
 Flower without such a "tongue" ..... 32
32. Leaves at the base of the stem stalked, leaf-blades  
 $\frac{1}{2}$  in. long or less ..... 33  
 Leaves at the base of the stem not stalked but gradually  
 narrowed to the stem, more than  $\frac{1}{2}$  in. long ..... 34
33. Plants minutely hairy, flowering in spring ..... *P. nana*  
 Plants without hairs, flowering in winter ..... *P. trullifolia* (2 vars.)
34. Stem with one or more bracts, flower well above the  
 leaves ..... *P. foliata*  
 Stem without bracts, flower just above the leaves ..... *P. venosa*
35. Flowering in winter, leaves 1 in. long or less ..... *P. trullifolia* (2 vars.)  
 Flowering in spring or summer, leaves more than 1 in. long ..... 36
36. Flower hood  $1\frac{1}{2}$  ins. high or more (including the thread-  
 like extensions) ..... 37  
 Flower hood 1 in. high or less ..... 38
37. Leaves narrow, almost linear ..... *P. banksii typica*  
 Leaves broader, not linear ..... *P. banksii* var. (unnamed)
38. Flower distinctly overtopped by the leaves (stalk  
 lengthens after flower is over) ..... *P. graminea*  
 Flower equalling the leaves or nearly so ..... *P. montana typica*

## THELYMITRA SPECIES

39. Flower(s) white (when opened) ..... *T. longifolia*  
 Flower(s) blue, blue-violet, violet or violet-purple  
 (when opened) ..... 40
40. Flower(s) with dark blue spots ..... 41  
 Flower(s) with dark blue lines ..... 42  
 Flower(s) without such spots or lines ..... *T. pauciflora*
41. Centre of flower (column) tipped with red ..... *T. ixioides*  
 Centre of flower (column) tipped with yellow ..... *T. decora*
42. Centre of flower (column) with two tufts of pale yellow  
 hairs ..... *T. caesia*  
 Centre of flower (column) without any tufts of  
 hairs ..... *T. venosa* (2 vars.)

## CORYBAS ACONITIFLORUS IN THE ORONGORONGO VALLEY

At the time of writing the article on the orchids of the Wellington district, which appeared in the last Bulletin, I was unaware that Mrs. Sinclair of Heretaunga had collected *Corybas aconitiflorus* (*Corysanthes cheesemanii* in the Manual) from the Orongorongo Valley in 1938. The plants were found in early June growing under beech trees, and were in flower. This species is easily distinguished from the other *Corybas* species in the district by the almost complete absence of any thread-like parts to the flower, which is hood-shaped, purplish in colour, and about  $\frac{1}{2}$  in. diam. Also, it flowers at least a month earlier than any other *Corybas*. The finding of this orchid near Wellington makes an interesting new record, for it has only been seen in three other places outside of North Auckland.

A. P. DRUCE.

## Orchids of the Wellington District Notes and Additions (1)

A. P. Druce and J. B. Irwin

Early last summer we made two short trips in the Hutt Valley looking for the orchids that grow in manuka. On the first occasion (November 5) we searched some of the manuka-clad hills adjacent to Silverstream, and noted twenty-three species growing there, including seven of *Pterostylis* and six of *Thelymitra*. The second trip was up the Puffer on the way over to the Tauherenikau Valley (December 19). Here twenty kinds were seen, five of them different from those seen near Silverstream. *Thelymitra* predominated both in species and in number of individuals. Some had practically finished flowering (*T. pauciflora*, *T. decora*), others were in full flower (*T. longifolia*, *T. caesia*, *T. venosa*, *T. pachyphylla* var.), while *T. pulchella* was only in bud. *T. venosa* and *T. caesia*, both with brightly coloured flowers, blue-violet streaked with dark blue, were present in large numbers. These plants, with their flowers on tall slender stems, were a striking and beautiful sight, contrasting strongly with the predominant yellow and green of the surrounding scrub.

It is remarkable that so many different orchids of a single genus can exist side by side and stay almost completely separate. Suspected hybrids between various species have occasionally been noted, but none were seen on this occasion. Some species, at least, are self-fertilizing and this may be a factor in keeping each one uniform in character. *T. longifolia* and more particularly *T. pauciflora*, can set seed in the Wellington district without, apparently, the flowers opening at all.

As a result of the two excursions we are able to record three additional orchids for the Wellington district, and to extend the known range of several others. A few records from other parts of the Wellington district have been included in the list that follows. For previous records of the orchids readers are referred to Bulletins No. 22 and 23.

### NEW RECORDS

- \**Thelymitra pulchella*. Manuka scrub on the Puffer and near Kaitoke, rare.
- \**T. pachyphylla* var. Manuka scrub on the Puffer, on Mt. Rimutaka, and near the Catchpool Stm., frequent.
- T. ixiioides*. Manuka scrub near Silverstream, rare.
- T. venosa*. Damp hollows in manuka scrub near Silverstream, local.
- \**Pterostylis irsoniana*. Light forest near the foot of the Puffer, rare.
- P. foliata*. Manuka scrub near Silverstream, frequent; Western Lake Reserve, M. Simpson! There is also a small colony in manuka scrub near the Meteorological Office at the top of the Wellington Botanical Gardens.
- P. montana typica*. Large colonies under manuka in swamp between Plimmerton and Pukerua Bay.
- Corybas aconitiflorus*. Western Lake Reserve, R. Mason!, M. Simpson!, A.P.D.

(\*Not previously recorded from the Wellington district).

*Thelymitra pulchella* and *T. pachyphylla* var. both have plain blue-purple flower, without spots or lines; in this respect they resemble *T. pauciflora*. In order to make the key to the *Thelymitra* species, published in Bulletin No. 22, take in these two recent additions, section 40 of the key should be rewritten and sections 43 and 44 added as follows:

### THELYMITRA SPECIES

- |   |       |       |       |                            |    |
|---|-------|-------|-------|----------------------------|----|
| 40. Flower(s) with dark blue spots  | ..... | ..... | ..... | .....                      | 41 |
| Flower(s) with dark blue lines  | ..... | ..... | ..... | .....                      | 42 |
| Flower(s) without such spots or lines   | ..... | ..... | ..... | .....                      | 43 |
| 43. Column-wing hood-shaped, with two tufts of white hairs.....                         |       |       |       |                            |    |
|   |       |       |       | <i>T. pauciflora</i>       |    |
| Column-wing not hood-shaped, tufts of hairs pale-yellow.....                            |       |       |       |                            | 44 |
| 44. Column-wing truncate, equalling or overtopping the anther                           |       |       |       | <i>T. pachyphylla</i> var. |    |
| Column-wing deeply cleft, with the bottom of the cleft lower than the top of the anther | ..... | ..... | ..... | <i>T. pulchella</i>        |    |

Mr. E. D. Hatch has informed us that the plants described and illustrated by Cheeseman under the name *T. pulchella* are not *T.*

*pulchella* as originally described by Hooker in 1853. The species recorded here is *T. pulchella* Hook. f., not *T. pulchella* of the Manual.

The group of plants here placed under *T. pachyphylla* as a variety appears to be confined to the North Island, whereas typical *T. pachyphylla* has only been found in the south. The difference between the two will be shown in Mr. E. D. Hatch's forthcoming paper on *Thelymitra*.

*Pterostylis irsoniana*, which looks a bit like both *P. montana* and *P. graminea*, is noteworthy for the large dark prominent callus at the base of the labellum. It is described and illustrated by E. D. Hatch in *Trans. Roy. Soc. N.Z.*, 78: 101-105.

In the article on orchids in Bulletin No. 22 a variety of *Pterostylis banksii* was listed from the Tararuas. This mountain orchid is actually *P. australis*. At the time of writing the original article, the author was not sure of this.

The two varieties of *Pterostylis trullifolia* found in the Wellington district are *P. t. alobula* and *P. t. rubella*. The first-named appears to be the common one, and is the only one that has been seen by the present writers. *P. t. rubella* was recorded from the Hutt Valley by E. D. Hatch from specimens collected by A. J. Healy.

## Orchids of the Wellington District

### Notes and Additions (2)

A. P. Druce

THESE notes follow on from previous records of the orchids of the Wellington district published in Bulletins 22 (p. 4), 23 (p. 9), 25 (p. 10) and 29 (p. 3). Three additional orchids are recorded and the range of four others is extended. Fifty different orchids are now known to occur in the southern part of the North Island from the Tararuas southwards.

*Pterostylis furcata* var. *micromega* (*P. micromega*). A colony of this orchid was discovered by Miss L. B. Moore in November, 1956, in wet, open manuka scrub on the western margin of Mangaroa swamp (grid reference 600390 on map N.161 of the one mile series). Following Miss Moore's directions I located what was probably the same colony the following season and took the photograph reproduced here. The only other record of this orchid south of the volcanic plateau is the vague one of "swamps at Wairarapa, Colenso" (Cheeseman, Manual of the N.Z. Flora, 1925).

*Pterostylis banksii* var. *patens*. This orchid appears to be absent from the Tararua Range, though abundant in the mountains both to the north and the south. It came as somewhat of a surprise, then, to find it, in December, 1957, in two places in secondary forest at

quite a low altitude (under 1,500 feet) in the "Taipos" lying between the Otarei River and the coast, south-eastern Wairarapa (grid refs. 100050 and 090030 on map N.166).

*Pterostylis trullifolia* var. *gracilis*. Not previously known south of Rotorua, this orchid was found in two places in the Hutt Valley this spring (Aug.-Sept., 1961), first near Mangaroa swamp (grid ref. 617408 on map N.161), then on the hills east of Taita (grid ref. 510345 on map N.160). In each place a large number of plants were grouped together under a rather open cover of manuka growing on a poor clay loam. The variety *gracilis* is easily distinguished from the common variety in the Hutt Valley, *alobula*, by (amongst other things) the much smaller flower; in *gracilis* the hood is only  $\frac{1}{2}$  in. high, compared with  $\frac{3}{4}$  in. in *alobula*. (Specimens in Botany Division herbarium: 116394, 116507.)



*Pterostylis furcata* var. *micromega* (about  $\frac{2}{3}$  natural size).

*Corybas rivularis* (*Corysanthes*). One previous record from the Tararua Range (Mangatainoka R.). Now recorded from another part of the range: Maymorn Ridge, in beech forest, 2,000 feet, A.P.D. (grid ref. 700575, map N.161).

*Corybas aconitiflorus* (*Corysanthes cheesemanii*). Two previous records (Orongorongo V. and Western Lake Reserve). Now recorded from Pinehaven and near Taita, Hutt V., in beech forest, A.P.D. (grid refs. 510347 on map N.160, and 555378 on map N.161).

*Adenochilus gracilis*. One previous record (Ruamahanga basin). Now recorded from two further localities in the Tararuas: Tauherenikau V., in beech forest, M. J. A. Simpson (grid ref. 815560, N.161); and Mt. Holdsworth, in beech forest, 2,000 feet, A.P.D. (grid ref. 948688 on map N.157). (Specimens in B.D. herbarium: 116508.)

*Corybas cryptanthus*. Recorded from Pinehaven in Bulletin 29. One plant had previously been seen at the seeding stage on Mt. Holdsworth in beech forest, 2,000 feet, A. P. Druce and J. B. Irwin (grid ref. 963688 on map N.157).

## Corybas Cryptanthus (Saprophyticus)

Tony Whitaker,  
Pinehaven



*Corybas cryptanthus*

ONE day in the summer of 1955-56 Piers Hunt and I were out looking for *Bulbophyllum* in the beech forest behind the Pinehaven School. On our way back Piers noticed what he took to be a seed head of *Caladenia carnea* var. *minor*. As we were not certain we took it to Mr. Druce for identification. He told us it might be *Corybas cryptanthus* and asked us to look for the flowers the following August.

On July 17 (1956) we went over to the beech forest again and I found five flowers of *C. cryptanthus*, their tips just showing above the leaf mould. This we cleared away, thus exposing the flowers completely. A few days later Mr. Druce came and took the photograph that is reproduced here. The plants were growing in a sheltered spot only a few yards from an open grass paddock. They were growing in the leaf mould of black beech, though there were several rimu and kahikatea trees nearby. The ground was flat, moist but not swampy, and received a certain amount of afternoon sun.

Later on we found more flowers and by the end of August we had seen over forty. On September 6, flowering was nearly over. In December we saw several seed-heads (some in places where we had not noticed flowers), but in early February could not find any.

When I was away camping at Ruakaka Bay, Queen Charlotte Sound, last Christmas, Michael Christeller and I found some "underground" stems of *C. cryptanthus* while we were digging for Maori relics under some manuka. One of the plants had a seed head.

## Orchids of the Wellington District

### Notes and Additions (3)

A. P. Druce, Wellington

THESE notes follow on from previous records published in Bulletins 22 (p. 4), 23 (p. 9), 25 (p. 10), 29 (p. 3) and 32 (p. 14). One additional species is recorded, and further localities are given for eight uncommon species. The numbers in brackets refer to specimens in Botany Division Herbarium, Lincoln.

*Caladenia lyallii*. This species, previously known in the North Island only from the central area, has been found in the Wairarapa and on the Tararua Range. Localities: north-west face of Mt. Percy, E. Wairarapa, in manuka scrub, 1400 ft., A.P.D., G. N. Park (158624); track to Dobson's Hut, southern Tararua Ra., in manuka scrub, R. J. Chinnock.

*Adenochilus gracilis*. Konini, Pahiatua, M. E. More (62844).

*Corybas aconitiflorus*. Mt. Percy, in beech forest and manuka scrub, G. N. Park; Oterei V., S. Wairarapa, in beech forest, A.P.D.

*C. cryptanthus*. Wallaceville Hill, in beech forest, A.P.D.; Wakatiki V., in beech forest, G. N. Park.

*Pterostylis banksii* var. *patens*. Mt. Mangatoetoe, Aorangi Ra., in scrub, 2800 ft., A.P.D.; Mt. Percy, in scrub, 1200 ft., G. N. Park, A.P.D. (158622).

*P. foliata*. Oterei V. and Kaiwhata Track, Wairarapa, in manuka scrub, A.P.D. (158784); Mt. Percy, in manuka scrub, G. N. Park.

*P. furcata* var. *micromega*. Western Lake Reserve, L. Wairarapa, M. J. A. Simpson (77786).

*Thelymitra caesia*. Kaiwhata Track, in manuka scrub, A.P.D.

*T. decora*. Mt. Percy, in manuka scrub, G. N. Park, A.P.D.; Oterei V., in manuka scrub, A.P.D. (158760).

Note on *Chiloglottis* in Pine Plantations. *Chiloglottis cornuta* has established a large flourishing colony under a shelter belt of pines at Pukerua Bay. This orchid is also frequent in pine plantations near Silverstream. The association of *C. cornuta* with pine-trees was first noted on the lower slopes of the Kaitake Range near New Plymouth. Though only occasional in the adjacent bush, there were tremendous colonies in the dense mulch of rotting needles in the extensive pine plantations. There may well be some mycorrhizal association between this orchid and one of the pine-forest fungi.



## Notes on *Bulbophyllum tuberculatum* (Orchidaceae)

T. C. Moss, Wellington

ON 25th May 1968 a colony of *B. tuberculatum* was discovered on a limb torn from an old rimu by the storm of the 10th April. This rimu emerges above a canopy of kohekohe-tawa forest about 40 ft high, on a 350 ft ridge to the north of Paraparaumu.

There was quite a community of orchids scattered along the fallen branch — all epiphytic species except *Earina autumnalis* and the doubtful "*E. aestivalis*" were there. *Bulbophyllum tuberculatum* tended to occur higher up the smaller branches than the other orchids, in positions where it would be partly or entirely shaded by the rimu foliage overhead. No asteliads were on this branch. The orchids derived their nourishment from a thin layer of material built up from rather sparse patches of *Pyrrosia serpens*. *Bulbophyllum tuberculatum* seemed to prefer positions where this fern was on the wane, but before the fibre thus laid bare had been occupied by crustose lichens. The accumulation of peaty material would be slow at this height. It was augmented a little, however, by a few small rotting stubs of rimu branches and tiny pieces of rimu foliage.

The pseudobulbs are arranged sympodially on a rhizome which runs above, or is slightly embedded in, the substratum. Roots which emerge from the rhizome and occasionally from the bases of pseudobulbs are no thicker than those of *B. pygmaeum* but much longer — sometimes extending to about 10 cm. They are sometimes sparingly branched. Apparently they can grow over bare bark if the atmosphere is not too dry. Pseudobulbs in all stages of development were present, but it was not noted whether the roots were growing or dormant at the time of discovery. A few juvenile plants of various sizes were dotted about the branches.

The turgid or finely wrinkled pseudobulbs, especially when young, bear upon their surfaces fine white mealy scales which probably protect the underlying tissue from excessive light while it is developing. This covering gradually weathers away but persists longest near the top of the pseudobulb. It is seemingly not composed of scales attached by their bases to the epidermis, but rather is derived from the breaking up of one or two membranous sheathing leaves which tightly cover each pseudobulb in its infancy. As each tiny fragment breaks away it appears somewhat bullate for a while before shrinking up into scattered mealy specks. The sheathing leaves are therefore most obvious on the

younger pseudobulbs, from the tops of which their apices curve outwards a little. Sometimes the apex of the inner sheathing leaf is faintly photosynthetic for a while.

The thinly coriaceous leaves tend to be narrow-elliptic to lanceolate or oblanceolate in outline. Each leaf is folded upon itself where it joins the pseudobulb to form a small false petiole which is capable, especially when young, of twisting to orient the rest of the lamina in relation to the light. The glabrous dorsal surface has a fine median groove. Ventrally it is either faintly keeled or has a darkish midrib. This surface is peppered thickly with minute whitish specks which, to the naked eye, look like a faint silvery grey film. Where the plant is growing in strong light a purple pigment is developed which is especially noticeable on the ventral leaf surfaces, peduncles, and developing capsules. Indirect light seems to be preferred.

Small inflorescences are produced from the bases of pseudobulbs, whence they reach a position about half the height of the leaves, if these are vertical. A second spike may develop from the base of an earlier one. The peduncles persist as dry brownish threads. Only one complete flower, partly open, was seen, and it agreed with Colenso's description in *Trans. N.Z. Inst.* 22, 1890, p.488 quite well. (The drawing in Cheeseman's *Illustrations of the N.Z. Flora* Vol. 2, 1914, Plate 191 depicts the flowers with the corollas open, which may or may not be accurate.) Seen from the front, the sepals formed a little hood over and about the labellum which presented its upturned ventral surface to view. This was red, fading to yellow in the middle.

This colony had sufficient numbers of individuals for one to see that it could adapt to different microclimates. Some plants on exposed branches had smaller, suborbicular pseudobulbs, with correspondingly reduced leaves carried more or less horizontally. In one place some pendent lichens of the *Usnea* type had become entangled amongst the orchid leaves. The affected plants had produced ovate pseudobulbs up to about 11 × 7 mm, and the leaves were more parallel-sided and measured up to 27 × 5 mm. They were held vertically so that only their tips protruded through the lichen. Plants in this condition could produce flowers under or within the lichen.

From its well-lit perch 50—60 ft up in the rimu the colony had been plunged to the gloom of the forest floor, where it had remained for six weeks until found. If *B. tuberculatum* were very sensitive to environment one might expect this to have had some traumatic effect. However it appeared to have weathered the misfortune as well as any of the other species present, which strengthens the impression it gives of being tough and adaptable. Why then is it so uncommon?

The present plants were certainly not conspicuous. Colenso's specimen sent from Palmerston North in April 1889 (loc. cit.) was described as forming "pretty large and closely matted masses", but this was probably enjoying much less spartan conditions than the Paraparaumu plants. Colenso first described this orchid from preserved material obtained near Petane (*Trans. N.Z. Inst.* 16, 1884, p. 336) and gave the lamina as "thickish but not fleshy", a description which he confirmed later. In Cheeseman's *Manual of the N.Z. Flora* (1925) we read "leaves  $\frac{1}{2}$ —1 in., thick and fleshy". This, if correct, suggests a specimen from a much less xerophytic habitat than the present ones, some of which gave the impression of being near the limits of tolerance to exposure.

One factor limiting its spread is its own growth form. All specimens seen were spot-bound as a result of the very short internodes on the rhizomes. These are much shorter than the diameter of the pseudobulbs, resulting in plants which are more tightly tufted and prone to being overwhelmed by other epiphytes than those of *B. pygmaeum*. Also, an older plant has an outer zone of vigorous growth surrounding an inner area of leafless, dying pseudobulbs with senescent or moribund roots. Any new growth emerging from a "backbulb" would be forced up into the air above the closely packed old pseudobulbs about it. It would prosper only if a fresh layer of organic material was deposited over these old pseudobulbs, and this is not likely to occur on the top of an old rimu. The only escape from these restrictions is by seeding and germination in fresh localities. *Bulbophyllum tuberculatum* seems to be more seral than the other epiphytic orchids, though in circumstances not conducive to rapid succession (as they might well not be on exposed rimu branches) a colony could persist for many years.

No plant was seen growing in fibre more than about half an inch thick. This fibre is what an orchid grower would call "dirty", i.e. much of it was decomposed into a very fine black material. Epiphytic orchids rarely take kindly to this sort of growing medium which, if present in too great a volume, will cause their roots to die prematurely. *Bulbophyllum tuberculatum* seems to avoid this by colonizing only thin and better drained patches of this material, but in so doing exposes itself to the peril of greater desiccation.

All plants seen seemed free of any serious disease. The remains of a few narrow oval white scale insects were found on the undersides of some leaves, and a few tiny lichens were present on some of the older pseudobulbs. Several plants had been overwhelmed by crustose lichens.

It would be interesting to hear of any other recent discoveries of this orchid, and whether anyone has successfully maintained it in cultivation.

## A list of orchids reported from the Wellington region since 1950

- Acianthus sinclairii*  
*Acianthus viridis* (NZNOG Newsletter 1984; 9: 4)  
*Adenochilus gracilis*  
*Aporostylis bifolia*  
*Bulbophyllum pygmaeum*  
*B. tuberculatum*  
*Caladenia catenata* (NZNOG Newsletter 1982; 1: 4)  
*C. minor*  
*C. "green column"*  
*C. lyallii*  
*Calochilus paludosus*  
*Chiloglottis cornuta*  
*Corybas acuminatus*  
*C. cheesemanii*  
*C. cryptanthus*  
*C. macranthus*  
*C. oblongus*  
*C. rivularis*  
*C. trilobus*  
*Cyrtostylis reniformis*  
*Dendrobium cunninghamii*  
*Drymoanthus adversus*  
*D. "spotted leaf"* (Eastbourne, observed 1992 - Ed)  
*Earina autumnalis*  
*E. mucronata*  
*Gastrodia cunninghamii*  
*G. minor*  
*G. sesamoides* (NZNOG Newsletter 1986; 20: 2)  
*Genoplesium nudum*  
*Lyperanthus antarcticus*  
*Microtis unifolia*  
*Orthoceras novae-zeelandiae*  
*Prasophyllum colensoi*  
*Pterostylis alobula*  
*P. australis*  
*P. banksii*  
*P. brumalis*
- P. cardiostigma* (N.Z. J. Botany 1983; 21: 97-100)  
*P. foliata*  
*P. furcata*  
*P. graminea*  
*P. irsoniana*  
*P. montana*  
*P. patens*  
*P. plumosa*  
*P. puberula*  
*P. trullifolia*  
*P. venosa*  
*P. "aff. montana"*  
*Spiranthes sinensis*  
*Thelymitra aemula*  
*T. carnea*  
*T. cyanea*  
*T. decora*  
*T. formosa* (NZNOG Newsletter 1982; 1: 4)  
*T. hatchii* (NZNOG Newsletter 1982; 1: 4)  
*T. ixioides*  
*T. longifolia*  
*T. pauciflora*  
*T. pulchella*  
*"T. dentata"* (L. Moore in *Flora of NZ II* 1970; p128)
- The record of *Pterostylis brumalis* is probably mistaken as this species only grows in association with kauri.