Summary. Undoubtedly there is a great deal still to be learned about root behaviour in *Metrosideros*. The present paper has contributed some information about the following: the presence in *M. robusta* of root swellings that probably correspond to the lignotubers of eucalypts; the transplanting of small *M. robusta* and the rate of growth of descending aerial roots; the production of aerial roots for anchoring terrestrial *M. robusta* into a rocky cliff; the development of abundant aerial roots on a tree of *M. umbellata*, and a comparison of these roots with those on vegetative progeny grown in gardens, the observations extending over fifteen years.

References

Cockayne, L., 1928. The Vegetation of New Zealand, 2nd Ed. Leipzig.
Kerr, L. R., 1925. The lignotubers of eucalypt seedlings. *Proc. Roy. Soc. Vic.*, 37: 1.
Jacobs, M. R., 1951. The growth and regeneration of eucalypts. *Jour. Aust. Inst. Agric. Sci.*, 17: 174-183.

Orchids of the Egmont Ranges

O. E. Gibson, E. D. Hatch, J. B. Irwin

In the account of his ascent of Mt. Egmont in February 1867, John Buchanan wrote (Reports of Geological Exploration No. 4): "Although all who go up do not collect plants still many do, and probably no locality in New Zealand has been better searched. Plants have been passing to Britain from there through various channels for many years. All idea therefore, of finding much novelty may be dismissed, and the result of the present expedition has proved that the botany of this isolated mountain was well ascertained prior to my visit."

Buchanan recorded about 180 species of flowering plants and ferns from Mt. Egmont and neighbourhood, and to this day his list remains the only published attempt at a complete enumeration. (An unpublished list, compiled by Cockayne, is deposited at the Dawson's Falls Hostel.) Needless to say, Buchanan was mistaken in his views as to how well Mt. Egmont had been searched; since 1867 many other plants have been found there and the flora is now known to contain over 400 species.

The present contribution on the botany of the Egmont Ranges deals with the orchids only, which number twenty-eight as compared with the four determined by Buchanan in 1867. The notes on distribution have been condensed from much detailed information contributed by each of the three botanists who have studied the orchids in this part of New Zealand. Besides Mt. Egmont itself (8260 feet), the Egmont Ranges include the Pouakai Range (4590 feet) and the

Kaitake Range (2240 feet), respectively five miles and eleven miles N.N.W. of Mt. Egmont. All three areas are included in the Egmont National Park.—Ed.

Acianthus fornicatus var. *sinclairii*. Kaitake Ra. and Ratapihipihi Reserve (near New Plymouth), in bush, not common.

Aporostylis bifolia. Pouakai and Kaitake Ranges, at quite low altitudes (Kiri clearing 1500 feet, near summit of Kaitake Ra. 2200 feet); Egmont, up to 5500 feet, most common in the herbfield and scrub, but also seen along tracks and river-banks lower down. Both linear and ovate-leaved plants have been seen in the same colony.

Bulbophyllum pygmaeum. Base of the Kaitake Ra.

Caladenia carnea var. *minor*. Kaitake Ra., near summit; Pouakai Ra., plentiful on hill near base (1000 feet) and in the Paul's Falls area (2500 feet), in light bush.

Chiloglottis cornuta. Sea-level to 4000 feet, usually occurring in small colonies in partial shade, but plentiful in pine and gum plantations on the lower slopes of the Kaitake Ra.

Corybas trilobus. Sea-level to 4000 feet, but not common on the Pouakai or Kaitake Ranges; common in bush nearer New Plymouth. This species usually grows in drier situations than do the other species of *Corybas*.

C. oblongus. Sea-level to 3500 feet; more common at base of the Pouakai and Kaitake Ranges than elsewhere.

C. rivularis. Egmont and northern slopes of the Pouakai Ra., 2500-3000 feet.

C. macranthus var. *longipetalus*. (syn. *Corysanthes rotundifolia* of Cheeseman in the Manual, but not the original *C. rotundifolia* of Hooker). Sea-level to 3200 feet, but mostly below 2500 feet, abundant along all the rocky mountain streams. *C. macranthus* var. *typicus* appears to be absent from the Egmont Ranges, not having been seen nearer than the Awakino Gorge (north of New Plymouth).

Dendrobium cunninghamii. This and the two following are common throughout the lower bush country.

Earina autumnalis.

E. mucronata.

Gastrodia cunninghamii. Egmont, Waiwakaiho R. at 3500 feet.

Microtis unifolia. Open country and clearings up to 1500 feet.

Orthoceras strictum. In second-growth up to 1000 feet; also on summit of Goat Rock, Kaitake Ra., at 1700 feet.

Prasophyllum colensoi. Egmont and Pouakai Ra., 1000-5500 feet, in clearings at low altitudes, in herbfield and bog at high altitudes.

Pterostylis irsoniana. Egmont and Pouakai Ra., 1500-4000 feet, common in clearings and in scrub.

Pterostylis venosa (syn. *P. confertifolia* Cockayne and Allan). Usually 3000-3500 feet, rarely seen at lower altitudes and then only in the smaller second-growth (Kiri clearing 1500 feet); large colonies

on the south (Egmont) side of the Pouakai Ra.

P. humilis. Egmont, 3200-4000 feet; only seen once on the Pouakai Ra. *P. humilis* flowers two to three weeks later than *P. venosa.*

P. montana var. *typica.* Pouakai and Kaitake Ranges in clearings and second-growth, usually below 1500 feet but occasionally at greater altitudes (summit of Kaitake Ra. 2200 feet, Mangorei Hut 3200 feet); Egmont, in clearing on north side at 3100 feet.

P. graminea. Pouakai Ra., several places on the western slopes between 1500 and 2500 feet, not common.

P. trullifolia var. *alobula.* Recorded from Egmont (*Trans. Roy. Soc. N.Z.,* 77: 246), but in error; the plants actually came from near Wanganui.

P. banksii var. *patens.* Egmont and Pouakai Ra., 1500-4000 feet, plentiful in open places, scrub and along tracks, not so common in bush. At high altitudes the plants are smaller than lower down, but the flower remains about the same size. *P. banksii* var. *typica* has not been seen except near New Plymouth.

P. australis. Recorded from Egmont (*Trans. Roy. Soc. N.Z.,* 77: 246), but further investigation on the variability of the groups within the *P. australis-banksii* complex is required. Probably only one, polymorphic, group is present (*P. banksii* var. *patens*).

Sarcochilus adversus. Base of the Kaitake Ra.

Thelymitra longifolia var. *forsteri.* Open country and clearings on lower slopes.

T. pachyphylla var. Recorded from the Pouakai Ra. (*Trans. Roy. Soc. N.Z.,* 79: 394).

T. decora. Pouakai Ra., at 2000 feet and in light scrub at 1000 feet.

T. venosa var. Between Egmont and the Pouakai Ra., bog at 3000 feet.

CURRENT WORK ON THE VEGETATION AND FLORA OF N.Z.

In the list published in the last Bulletin (Number 25, October 1951) under the above heading, mention was omitted of (1) the private herbarium of *Mr. W. Martin,* 27 Merchiston St., Andersons Bay, Dunedin, (2) the public herbarium of *Massey Agricultural College,* Palmerston North (emphasis on weeds), and (3) the ecological work of *Mr. J. A. Carnahan,* Massey Agricultural College (ecological factors involved in the competition between native and introduced plants, particularly on hill country pastures).