

RAINBOW MOUNTAIN ----- C. C. OGLE

Sixteen miles south of Rotorua and seven miles southwest of Mt. Tarawera, Rainbow Mountain (Maungakakamea) rises to 2494 ft. and is of botanical interest as one of the few scrub covered higher altitude areas of the region and as a possible source of seed for recolonization of Mt. Tarawera.

The vegetation pattern is complex as a result of two main factors, namely, periodic burning and areas of thermal activity. Isolated stands of kamahi, with an understorey dominated by mapau, Myrsine australis, and a ground cover of luxuriant Phymatodes diversifolium, often have a sharp boundary with mixed kanuka-manuka scrub. One small area has a canopy which is almost entirely lancewood, Pseudopanax crassifolium, in its adult branched stage with a sub-canopy of five finger, Neopanax arboreum. This represents another course which regeneration has followed after fire with the arrival of suitable seed. The only native gymnosperm seen was Phyllocladus glaucus.

More unusual is the variety of species found on the hard clay soils which still support the kanuka or manuka stages of regeneration. Here, the presence of thermal activity appears to limit the spread of manuka, and kanuka forms a prostrate shrub near fumaroles but becomes progressively taller away from them. The ground beneath low kanuka is usually thickly carpeted in a yellow-green moss, Dicranoloma billardieri. Among the few species which grow in this dense ground cover are Schizaea fistulosa and S. dichotoma.

More open kanuka or manuka scrub contains other shrub species such as Persoonia toru, Corokia buddleioides var. linearis and monoao, Dracophyllum subulatum. Occasional monoao plants under shaded conditions appear in the unusual broader leaved form described in Allan's "Flora" as present at Waiotapu. Other "heath" species also found are Dracophyllum strictum, Gaultheria antipoda, G. oppositifolia, G. paniculata, Gyathodes fasciculata, and G. juniperina. As on tarawera this order of "heath" plants may have become dominant through the advantages gained by the possession of mycorrhizae in the roots, the recent volcanic soils being low in fertility and water holding capacity.

The presence of numerous ground orchids and the spread of exotic pine species may be attributed to their similar possession of mycorrhizae. Two species of sundew present, Drosera auriculata and D. binata overcome poor soil fertility through digestion of insects. The following list of orchids has been built up from visits over the months of October to December during the last four years. Thelymitra pauciflora and T. ixioides are both common, the latter apparently in two forms; one with two spotted petals and the other with one spotted petal. Two forms of Caladenia carnea var. minor exist: "forma" calliniger and, flowering an average of two weeks later, "forma" minor with pink flowers, Barina mucronata flowers prolifically as a terrestrial plant, though it and Dendrobium also occur as epiphytes. Two species of the bearded orchids have been seen

here. The first, Calochilus paludosus with a red bearded labellum and short anther flowers in early December and the other, C. robertsonii with a bluish-tinted bearded labellum and longer beak-like anther, flowers a month earlier.

Rainbow Mountain is best known to the passing motorist as a hill with many-hued rocks, but to the botanist who penetrates beyond the thick scrub there are many other features of interest including the discovery that the pink tinge of the rocks is caused by the alga Trentepohlia.

Many of the described associations of native plants are threatened by the spread of pines, and, as for those on Mt. Tarawera, there is a very good case for their removal.

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PINK AND WHITE CENTAURY ----- J. T. Linzey

At Karekare in March, Miss Crookes showed me how far centaury, Centaureium minus, had penetrated into the shade of the dense manuka scrub and the light coastal forest. The leaves were reduced in size and the stems, lengthened and weakened by the lack of light, were often nearly prostrate. The characteristic pink flower, however, left no doubt of the plant's identity.

As the only introduced member of the gentian family found wild in New Zealand, centaury is abundant in open grassland throughout the country. In his "Weeds of New Zealand" Hilgendorf mentioned a white flowered variety near Masterton. This form occurs quite commonly around Dunedin and in parts of Central Otago. It is often found in association with our native Gentiana grisebachii, also white flowered. One is tempted to speculate that an environmental factor which has favoured our native white flowered gentians is preferentially selecting the white centaury. Has any member seen the white flowered form in Auckland?

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Articles such as the two above recording members own botanical observations and experiences greatly increase the interest of the Newsletter. They are, however, always in short supply! If any member sees something interesting botanically speaking in their travels, I would be more than grateful if they could jot down some notes about it and send them to me, (address on the front page), for inclusion in the "Newsletter". - A.D.P.