INTRODUCTION

During an afternoon visit to Karamea (Red Island) in May 1975, the opportunity was taken to compile a vascular plant species list and note the vegetation types present. 21 species are recorded, of which nine are indigenous and constitute the most important and stable vegetation cover.

Karamea is a small, privately owned island approximately 200 by 100 metres, rising to a height of 50m at the summit of the north-eastern cliffs. It lies close inshore some 5km south of Waimarama Settlement on the Southern Hawkes Bay coast, Grid reference N142/393944 (N.Z.M.S. 1 Sheet N142 Waimarama, 2nd Edition, 1969).

Although small, the island presents a complex geology of limestone and sandstone beds capped by a series of red weathering basaltic lava flows, all dipping to the south. The geology is described by Kingma (1971); two minerals from the island are described by Mason (1955); and detailed studies on petrography and mineralisation are currently in progress (see Kobe (1976) for results to date). Karamea is joined to the mainland by a short sand spit exposed at low tide.

VEGETATION

Plant cover, although sparse in some parts, falls into three major groupings separated by the topography of the island (Fig.1). Scientific names for the common names used in the text are given in the species list.

1. Northern cliffs

The northern side of the island consists of actively eroding precipitous cliffs which become higher towards the east. To the west, bentonitic mud flows issue near their base. Between, the central part of the northern cliffs has steep talus slopes and alluvial fans.

*Spergularia marginata* and *Apium filiforme* occur in small numbers on the inner shore platform. The only other well established plants on this side of the island are several large taupata shrubs. The unstable bentonitic muds, talus slopes and alluvial fans support the majority of the annual adventive weed species found on the island, e.g. catsear, oxtongue, scarlet pimpernel, sowthistle, Californian and Scotch thistles, as well as occasional clumps of the native grass, *Poa anceps*.

2. Southern cliffs

The southern side of the island consists of lower, stable seacliffs formed by the resistant basalt flows. Flax and small taupata shrubs are the most common
Fig. 1. Maps of Karamea (Red Island) showing vegetation distribution and location on Hawkes Bay Coast and North Island of New Zealand.
plants. Two species of foliose lichens, *Parmelia reticulata* and *Xanthoria parietina* are common on the rocks, together with several crustose species.

### 3. Summit pasture

Between the relatively high northern cliffs and the lower southern cliffs is a sloping area of pasture corresponding approximately to the dip slope of the basalt flows capping the island. The chief constituent of the pasture is a thick growth of *Poa anceps* with occasional plants of cocksfoot and harestail. Within the pasture grow a scrambling vetch and small clumps of woody stemmed, succulent leaved *Senecio banksii*. Marginal areas have several old taupata shrubs (up to one metre tall, 2m across, with gnarled woody trunks up to 15cm in diameter). Beneath these, Mercury Bay weed and cudweed form the ground cover.

The presence of animal droppings indicates occasional grazing by rabbits (*Oryctolagus cuniculus*) in marginal areas although the majority of the pasture appears untouched. Larger grazing mammals such as sheep and cattle would be unable to reach the pasture.

### VASCULAR PLANT SPECIES LIST


Specimens of all indigenous species have been lodged with the Herbarium of the Auckland Institute and Museum.

**Indigenous**

*Apium filiforme*

*Atriplex novae-zelandiae*

*Coprosma repens*

*Dichondra repens*

*Disphyma australe*

*Phormium tenax*

*Poa anceps*

*Senecio banksii*

*Spergularia marginata*

**Adventive**

*Anagallis arvensis*

*Circium arvense*

*C. vulgar*

*Dactylis glomerata*

*Gnaphalium gymnocephalum*

*Hypochaeris radicata*

*Lagurus ovatus*

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*taupata*

*Mercury Bay weed*

*NZ Iceplant*

*NZ flax*

*NZ spurrey*

*scarlet pimpernel*

*Californian thistle*

*Scotch thistle*

*cocksfoot*

*cudweed*

*catsear*

*harestail*
Medicago arabica    spotted bur medick
Melilotus indica    King Island melilot
Picris echioides   oxtongue
Sonchus oleraceus   sowthistle
Vicia ?tetrasperma  four-seeded vetch

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REFERENCES