

to the community. The forest under consideration bids fair in a few years to become almost a thing of the past, since the dominant tree is being rapidly converted into timber for butter-boxes, and the ground occupied by the forest is usually of a high class for dairy-farms.

Proximity to the sea leads to a class of forest distinct from the usual lowland type in its composition, in the much lower stature of its members, and in the extreme density of its roof, the last two characters induced by the frequent more or less salt-laden winds. The maritime climate favours the presence of trees which will not tolerate frost, so that a number of well-known trees and shrubs are confined, or nearly so, to coastal forest—e.g., the kawakawa (*Macropiper excelsum*), the large-leaved milk-tree (*Paratrophic opaca*), the karo (*Pittosporum crassifolium*), the haekaro (*P. umbellatum*), the karaka (*Corynocarpus laevigata*), the akeake (*Dodonaea viscosa*), the pohutukawa (*Metrosideros tomentosa*—but the name has recently been altered to *excelsa*, which by the "Rules of Botanical Nomenclature" is correct for the time being, notwithstanding that *tomentosa* has been the sole name for nearly a hundred years!), and the ngaio (*Myoporum laetum*). Several of the above do not extend beyond latitude 38°, and the ngaio alone reaches Southland, so that coastal forest in the southern part of the South Island is made up of those ordinary lowland trees, &c., which can tolerate coastal conditions.

In addition to forest, the other great New Zealand plant-community dependent on climate is tussock-grassland. This community is of but little moment in the North Island except on the volcanic plateau and the highest mountains, but in the South Island it was the original plant-covering of most of the country to the east of the Divide of the Southern Alps, excepting northern Marlborough, northern Nelson, and parts of Southland. It extends from sea-level to the upper subalpine belt of the mountains, but is less continuous at high than at low levels. It also occupies some of the lowland and montane river-valleys of north-western Nelson and Westland, and ascends to the subalpine western slopes of the mountains.

There are two distinct types of tussock-grassland—"low" and "tall"—the former distinguished by the dominance of the medium-sized tussocks of *Poa caespitosa* and *Festuca novae-zelandiae* (one or both), and the latter by the dominance of one or both of the much taller and more massive tussocks of red-tussock (*Danthonia Raoulii* var. *rubra*), or snow-grass (*D. Raoulii* var. *flavescens*), and the numerous hybrids between them. Taking lowland and montane low tussock-grassland together, and excluding tall tussock-grassland, since they occupy a far more extensive area, and leaving out of the estimate the 74 or so exotic species now firmly established, the number of species they contain for the whole area is 216 (ferns and fern-allies 10, monocotyledons 66, dicotyledons 140), which belong to 38 families and 104 genera, the largest being: Families—*Gramineae*, 36; *Compositae*, 35; and *Cyperaceae*, *Leguminosae*, and *Onagraceae*, each 11. Genera—*Poa* and *Epilobium*, each 11; *Carmichaelia*, 9; and *Carex*, *Acaena*, and *Raoulia*, each 7. As for the biological groups, they and the number of species to each are as follows: Trees, 2; shrubs, 31; tussocks, 13; other plants of the grass form, 43; herbaceous plants, 90; semi-woody plants, 30; and ferns, 7. About 85 of the species are drought-tolerating.