

with tussock-grassland. In the dry area of Marlborough and the contiguous wet western area of north-western Nelson, there are 36 species confined to the dry area (locally endemic) and 39 to the wet area. So, too, dry Central Otago possesses 15 locally endemic species. Speaking of the distribution of the species in a wide sense, there is every transition, from those which extend continuously from the north of the North Island to Stewart Island to those found in only one limited area.

The physical features of New Zealand; its many types of climate, especially with regard to the annual rainfall and the number of rainy days; its varied altitude, ranging from sea-level to the snowfields of the Southern Alps; its many kinds of soils, particularly their water-holding capacity; the diverse frost-tolerating ability of the species; their aggressive powers—largely a matter of their life-forms and inherent plasticity—all these and other factors have led to a most varied *Vegetation* made up of a host of plant communities, some of which appear out of place in the Temperate Zone. Thus between tide-marks in the northern rivers and estuaries there is a true mangrove community—an unexpected occurrence outside of the tropics; and even so far south as north-western Nelson groves of tall palm-trees are a striking feature. But, more than all else of an unexpected character—though familiar enough to all New Zealanders—is the lowland forest, which resembles in no whit the forests of temperate Europe, Asia, or America, but is a true tropical rain-forest. This tropical character is shown in its groups of tall tree-ferns, which may exceed 40 feet in height; in its wealth of ferns of all kinds; in the abundance of woody, ropelike climbing-plants and huge perching-plants far up in the forest canopy; in the several tiers of undergrowth, consisting of low trees and tall shrubs with smaller shrubs and ferns beneath, and the ground clothed with a deep carpet of filmy ferns, liverworts, and mosses, while the tree-trunks are similarly clad: in short, the forest exhibits prodigal luxuriance of growth, and Nature, as it were, runs riot. Rarely does one tall canopy tree dominate, but the uppermost storey of the forest is constructed out of the crowns of various kinds of trees growing side by side, just as the undergrowth is composed of many species. But no forest is homogeneous in its structure, for differences in the topography of the area, in the water content of the soil, and in the relative amount of light in the interior of the forest, lead to various combinations of species. All the same, especially so far as the tall trees are concerned, there is an advance towards stability and uniformity, so that all the forests if not interfered with are progressing towards a "climax association," as it is named, with (as a rule) the tawa (*Beilschmiedia tawa*) dominant