

The Lowland Forest Community: Mixed Podocarp and Broadleaf

By LINDSAY WATSON, Aged 18, Invercargill

This is the third in a series of articles discussing typical indigenous plant communities. The first article was in the November 1966 issue and the second in the February 1967 issue.

NEW ZEALAND'S forests at low elevations are made up mainly of podocarps—the pines—with which are usually associated some broadleaved species.

A forest is considered to be a climax association; that is, it is the result of a series of herb, shrub, and then tree communities. The forest is made up of several layers, which vary with type and altitude. A typical New Zealand forest would have:

- (a) A canopy layer: This contains the tall giants of the forest—the mature podocarps and kauris. These trees protect the underlying plants from great extremes of climate.
- (b) A small tree layer: This contains the wineberries, *Pittosporums*, kamahis, *Fuchsias*, *Pseudopanax*, and *Neopanax* (five-fingers and lancewoods).
- (c) A shrub and juvenile tree layer: This contains such plants as *Pseudowintera* (horopito), *Coprosma*, *Sophora* (kowhai), and some species of *Metrosideros* (rata). Tree ferns also are found here.
- (d) A ground layer: This contains the lilies, ferns, herbs, mosses, and grasses.

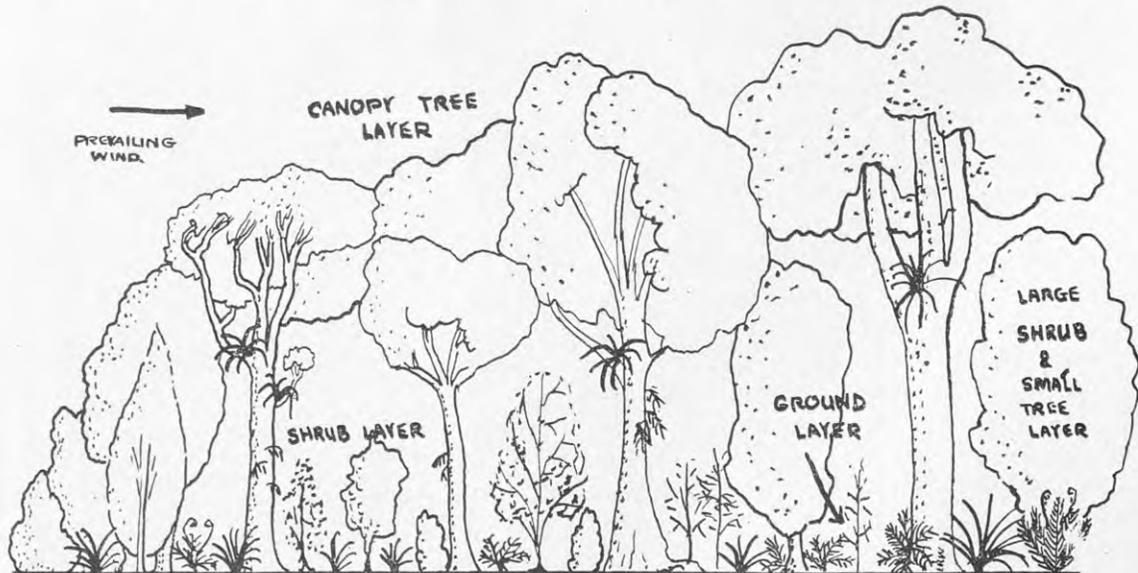
Further subdivisions are usually made, and two special groups of plants are usually present:

(e) Lianes or climbers: containing *Rubus* (lawyers), supplejack, kiekie, and the *Clematis* species.

(f) Epiphytes and semi-parasites: mistletoes, filmy ferns, hanging ferns, lilies, lichens, and perching trees such as the puka (*Griselinia lucida*).

Of New Zealand's approximately 150 tree species, most are found within the forest community—very rarely do trees occur naturally away from the protection of a forest grouping. The gymnosperms, or pines, in New Zealand are represented by three families: Araucariaceae (kauri), Cupressaceae (kawaka and pahautea), and Podocarpaceae (totaras, miro, matai, kahikatea, monoao, rimu, silver pine, celery pine, and toatoa). Most of these trees are well known and readily identified—some because of their usefulness as timber, a quality not reserved for many of our native trees. The rest of the trees are broadleaved, and these include a wide variety. Maori and European names can often lead to confusion in identification, as some names vary with locality.

The main broadleaved trees tend to be found in the "small tree" or "shrub" layers and include: broadleaf, ngaio, *Pseudopanax*, the ratas (*Metrosideros*), some of which often form part of the canopy layer; *Olearias*, *Pittosporums*, kowhai,



A HYPOTHETICAL TRANSECT OF A FOREST COMMUNITY.