

the Natives in clearing the country for their cultivation. A patch of rimu-tawa forest may be seen on the Te Ngae flat, but this is the only exception of dry-land forest which the writer has encountered on the lowlands, and the preservation of this may be due to the missionary influence in early years.

Fletcher ("Recent Changes in the Vegetation of the Taupo District," *Trans. N.Z. Inst.*, vol. 47, p. 70, 1914) is of opinion that the succession of the vegetation at Taupo was in the following order: Fern, tussock-scrub, forest. If this succession holds true, in Rotorua the native growth at the lower levels has only reached the scrub stage, two species of manuka (*Leptospermum scoparium* and *L. ericoides*) being the predominating shrubby plants on the lower levels, while the higher levels



FIG. 5. SWAMPY FOREST DEVELOPING AT NGONGOTAHA, NEAR ROTORUA.

Conditions here, on the lake-border, are ideal for quick growth of young white-pines. Scrub in foreground is manuka. Sample R 1147 represents this soil.

are still in the fern stage, *Pteridium esculentum* (New Zealand bracken) and *Coriaria ruscifolia* (tutu) being the predominating growth. Where thermal activity is present a variety of scrubby growth exists, and where swamp conditions occur special associations of herbaceous swamp plants are also present in fairly large areas, but these are not of agricultural importance.

The only correlation between soil and vegetation detected in the Rotorua district is the occurrence of distinct types of forest in very wet subsoil. At Ngongotaha a pure wood of young white-pine (*Podocarpus dacrydioides*) is developing almost at the lake's edge on a sandy silt (Fig. 5), and at Te Ngae, on a sandy loam in similar situation, an old pukatea (*Laurelia novae-zelandiae*) and white-pine forest has developed.