

Floristic Province is marked by such well-known trees as the kauri (*Agathis australis*), the towai or tawhero (*Weinmannia sylvicola*), the pohutukawa (*Metrosideros tomentosa*), the tawari (*Ixerba brexioides*), the mangrove (*Avicennia officinalis*), the karo (*Pittosporum crassifolium*), the toatoa (*Phyllocladus glaucus*), the tawapou (*Sideroxylon costatum*). Also, as might be expected, most of the plant formations are peculiar likewise, such as the kauri forest, the northern heath, the mangrove formation, and the pohutukawa formation of the coast.

D. EFFECT OF MAN AND INTRODUCED ANIMALS ON THE RESERVE.

Although the Waipoua Forest is to all intents and purposes a virgin formation, man in certain places has wrought considerable changes. This has been brought about through the digging for fossil kauri-gum within the forest, and through the climbing of the kauri-trees themselves for the raw material.

The digging was altogether carried on in the neighbourhood of the kauri-trees, and so round their bases much of the undergrowth has been destroyed. At the same time gum-diggers' camps were established at a few places in the forest, and there still greater changes have been brought about. Further, well-defined bridle-tracks for the taking-out of the gum and the bringing-in of stores wind here and there to the camps, while many narrower paths lead to the groves of kauri and even to isolated trees.

The tree-climbing was carried on in the first instance in order to procure that gum which frequently collects in large masses high in the tree-tops, exuding from cracks in the bark. More recently the practice of "bleeding," as it is called, has been resorted to. This consists in making larger or smaller incisions through the bark into the sapwood, the viscous fluid pouring out and congealing finally in whitish, opaque, tallow-like masses on the bark (Photo 1). At first the trees were "bled" to only a small extent, but as the practice increased so were the wounds made larger and more numerous, until now it is no uncommon sight to see a magnificent forest giant covered with dozens of most unsightly gaps, many several inches both in depth and breadth, and some feet in length at times. That this treatment is injurious to the tree goes without saying. Leaving the loss of the sap out of the question, the openings allow the incursions of fungi inimical to the tree, and rotting wood in abundance soon shows the damage that is being done, while dead trees, alive and healthy only a few years before, testify to the rapidity of their action. How far the "bleeding" affects the value of the wood for timber purposes I am not in a position at present to state, and further investigations are required on this head, though it is possible that the timber is uninjured.

The climbing itself is a daring-enough business. The climber throws a light cord with a weight attached over a branch of the tree, which may be 60 ft. or 80 ft. from the ground, and this done, by its means he hauls over the limb the thicker rope up which he is going to climb, bringing its ends to the ground. By means of this double rope he climbs on to the bough, and, thence using the rope as need be, can pass over the whole branch-system. Finally, passing the line over a stout limb, he seats himself upon a piece of wood fixed to one part of the rope, while the other part he holds in his hands, and so can lower or raise himself in order to secure whatever gum may be on the trunk itself, which has exuded from the cuts made through the bark. Coming opposite a piece of gum, he wraps one end of the rope round his leg, anchors himself to the tree by means of a cord furnished with a hook and attached to his belt, and then, his hands free, he chips with a tomahawk the gum from off the bark and collects it in a bag he carries for the purpose (Photo 2).

Both climbing and gum-digging are now illegal in the Waipoua Forest, and no one at the present time is allowed within its precincts without having obtained special leave.

There are a few cattle, both wild and belonging to the settlers and Maoris, within the forest, and these trample down the undergrowth and feed on certain of the shrubs and young trees. However, their effect is as yet hardly noticeable, and the same may be said as to that of the wild pigs, of which a few are present.

The following are the plants principally eaten by stock, and so much are many of them relished that, according to Mr. Maxwell, the caretaker, who kindly furnished the list, cattle will thrive and fatten on these alone:—

Corynocarpus laevigata.

Schefflera digitata.

Nothopanax arboreum.

Geniostoma ligustrifolium.

Coriaria ruscifolia.

Rapanea Urvillei.

Vitex lucens.

Melicactus ramiflorus.

Coprosma robusta.

Veronica salicifolia.

Hoheria populnea.

Freycinetia Banksii.

Cyathea medullaris.

Solanum aviculare.

Pittosporum tenuifolium.

Rhapalostylis sapida.

Olea lanceolata.

Fire, too, has here and there attacked the forest on the outskirts; but, thanks to the difficulty of burning any green standing forest in New Zealand, and the almost impossibility of damaging one in such a wet climate, very trifling harm has resulted—in fact, it was stated to me by residents in the district that it would be impossible to burn the forest.

E. CLIMATE.

There are no meteorological records dealing directly with the Waipoua Forest Reserve, but fortunately a station was established a year or two ago at an altitude of about 2,000 ft. on the Tutamoe table-land. So far as the rainfall is concerned, this district has long had the reputation of being the wettest in the Auckland Province, and my own experiences fully bear this out. The rainfall, as shown in the accompanying table, will probably represent the maximum which falls over the area, the amount decreasing towards the sea, but in all probability being there still very