

scantling, or other sizes which may be in order the flitches or balks from the breaking-down bench; the rough timber is loaded on to a trolley by the tailer-out, and timber for dressing is stored near the planer or moulder. The timber is conveyed from mill to yard on trollies, and there classed and stacked ready for delivery to customers.

The waste in connection with sawmilling is very great, especially in Southland, where the trees are small and rather stunted. Compared with kauri bush, I should say the waste in Southland is double. I estimate the waste in Southland as follows: All limbs, tops, &c., left in bush, 30 per cent.; sawdust, 10 per cent.; slabs, 20 per cent.; total, 60 per cent.

*Suggestions re Waste.*—Many suggestions may be made for utilising waste products of sawmills, such as wood-pulp, a mixture of tar and sand with sawdust for street-paving blocks, &c. A large pit built near the mill where all waste could be burnt, and the ashes converted into potash, which is a very simple and practically inexpensive process, would pay sawmillers who cannot sell slabs to householders for firewood. Another suggestion is that all timber should be ringed during the months of June, July, and August. By this means all sap is prevented from ascending to nourish the tree, and consequently it must increase the durability of the timber. Of course, the wood in those trees will commence to decay unless cut up within eighteen months.

J. W. COLLINS,  
Crown Lands Ranger.

## B.) MEDICINAL PROPERTIES OF TREES AND SHRUBS, AS STATED BY OLD MAORIS.

*Flax.*—Juice of roots and thick ends of leaves, in large doses an emetic, small doses daily when suffering from boils. The red portion of flax-roots boiled—the extract therefrom is used as a purgative. Flax-gum is also used for dressing open wounds.

*Kareao (Supplejack).*—A decoction from the roots given in cases of weakness or general debility; used in the same manner as sarsaparilla.

*Kawakawa.*—Pulp of leaves and fruit retained in the mouth to relieve toothache. An infusion of the leaves used to prevent swelling, and taken internally for stomach-ache. The leaves burnt in a room kill mosquitoes, and will also render human beings insensible. Kawakawa is sometimes used as a substitute for tea.

*Koromiko.*—The tender shoots are masticated and swallowed for diarrhoea and dysentery. It relieves the pain of stomach-ache very quickly.

*Kohokohe.*—Used as a tonic. A kind of bitter beer made from its leaves is used as a stomachic.

*Kahikatoa.*—Berries masticated and saliva swallowed to allay pains in the stomach, and cures diarrhoea. A weak infusion of leaves given in fever cases.

*Ngaio.*—The tender shoots rubbed on insect-bites allay irritation. Also it cures toothache.

*Nikau.*—When cooked, used by Native women for medicinal purposes.

*Rimu.*—Gum used in dressing severe wounds.

*Tipau.*—Tender shoots masticated and swallowed in cases of costiveness.

*Titoki.*—An oil is expressed from the nuts and used for earache, weak eyes, sores, bruises, sprains, &c.

*Tupaki, or Tutu.*—The juice from the berries made a sort of wine, which the old Maoris were very fond of. It is rather laxative, and is said to counteract the costive effects of such foods as fern-root and karaka-nuts.

*Tataramoa (Bush-lawyer).*—A very good remedy for toothache.

*Kohukohu (Tree-moss and Lichens).*—Reduced to fine dust and mixed with *hinu-kohia*, is a specific for *hakihiaki* (itch) and other skin-diseases. *Hinu-kohia* is oil from the kohia-seeds.

*Raurekau, or New Zealand Coffee-tree.*—Infusion of inner bark used to reduce swellings, sprains, &c.

*Rata Vine.*—The inner portion of the bark cut into strips and boiled until it becomes black—the extract is used for the cure of all open wounds, with very good results.

## NATIVE TREES CONTAINING PROPERTIES SUITABLE FOR TANNING PURPOSES, ALSO UTILISED FOR DYEING BY THE MAORIS.

*Tanekaha.*—Bark used for tanning.

*Toatoa.*—Bark used for tanning.

*Tawhai.*—Bark used for tanning.

*Hinau.*—Bark used for tanning; also used by the Natives as a black dye.

*Tutu.*—The berries of this shrub are highly poisonous. The juice make a deep-purple dye.

*Dyes.*—Hinau-bark—Brown; mixed with iron, black. Towai-bark—Red; mixed with iron, black. Puriri-bark—Brown; mixed with tanekaha, yellow. Makomako-bark—Good black. Whakou—Blue. Tanekaha—Pinkish red. Toatoa—Brownish red. Kakariki—Blood-red. Tupaki—Blood-red.

## (C.) THE VARIOUS PROCESSES OF SEASONING TIMBER.

### (1.) GENERAL DESCRIPTION.

[Extracts from a paper by Mr. G. A. JULIUS, B.Sc., M.E., 20th July, 1907.]

Enormous quantities of timber are used yearly in the supply of railroad sleepers in every country, the United States railways alone requiring over ninety millions of new ties per annum. It may be argued that these will ultimately be replaced by steel sleepers, and such a substitution will have to be made in the near future unless the most rigid economies are practised in the use of the present