

## Particulars of Kauri-gum exported from New Zealand, &amp;c.—continued.

Country to which exported.	1st April, 1918, to 31st March, 1919.		1st April, 1919, to 31st March, 1920.		1st April, 1920, to 31st March, 1921.		1st April, 1921, to 31st March, 1922.		1st April, 1922, to 31st March, 1923.		1st April, 1923, to 31st March, 1924.	
	Tons.	£	Tons.	£	Tons.	£	Tons.	£	Tons.	£	Tons.	£
United States of America	1,371	81,914	2,037	157,251	3,224	345,992	2,487	266,922	3,742	367,946	4,197	449,117
United Kingdom	346	19,977	1,650	90,422	2,544	149,422	1,297	104,094	1,960	129,082	2,409	170,785
Germany ..	..	..	..	..	..	..	58	3,574	70	3,363	66	2,832
Canada ..	572	45,588	1,016	61,005	314	24,481	89	9,641	109	7,462	118	7,714
Australia ..	49	4,820	23	1,936	49	4,802	37	7,073	84	6,679	7	787
Belgium ..	..	..	..	..	..	..	..	..	..	..	..	..
France ..	..	..	..	..	..	..	..	..	..	..	55	5,855
Austria-Hungary	..	..	..	..	..	..	..	..	..	..	..	..
Russia ..	..	..	..	..	..	..	..	..	..	..	..	..
Netherlands ..	..	..	..	..	..	..	..	..	90	4,381	38	1,582
Sweden ..	..	..	..	..	..	..	..	..	20	1,000	..	..
Italy ..	..	..	..	..	..	..	..	..	1	170	26	1,647
Japan ..	..	..	..	..	..	..	4	..	4	326	7	393
Hong Kong ..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	2,338	152,299	4,726	310,614	6,131	524,701	3,968	391,304	6,080	520,409	6,923	640,712

## NEW PROCESSES FOR TREATING KAURI-GUM.

During the year very great improvements have been made in both small and large gum-washing plants in the way of producing comparatively clean chips. In most instances these improvements cannot be protected by the taking-out of patent rights. In two cases where patent rights have been applied for an examination of the gradings produced goes to show that practically all of the foreign matter can be eliminated. One of the simplest of these improvements is that devised by Mr. H. A. McMillan, of Waipu. Samples taken from consignments of chips treated by this process were tested at this office and found to have real gum contents ranging from 90 to 95 per cent. An appreciable percentage of the foreign matter consisted of light sticks that would have been blown clear had the chips been sieved in a machine with a fan. Patent rights have been applied for in the name of McMillan Bros., details as under having been supplied by Mr. J. D. McMillan, of No. 19, Palmerston Buildings, Auckland:—

“The process consists of a flume or chute with deep slats inclined away from streams of water flowing down the chute. The material from the washing-machine is fed directly into the chute. As water passes over each slat it creates a miniature waterfall. The bubbling of the water at the bottom of this waterfall provides the lift necessary to carry the gum over the next slat and leaves the heavier dirt behind. By the time six or seven slats have been negotiated little or no foreign matter remains.”

In this process the wood, being waterlogged, sinks with the dirt. Such a process as this enables the digger to give the material much less treatment in the washing-tub, with the consequent saving of time, and also a further saving as the gum is not broken up so much and more is recovered. In any such process it is obvious that a considerable amount of gum will sink with the foreign matter. So far gum-washers have been very wary of submitting samples of their residue to be tested for gum content. It is difficult to estimate the probable loss, which would vary in different fields and also according to the delay in treating the material after it had been taken from the washing-machine.

*The Huff Electrostatic Process.*

This process was invented in the United States of America for separating impurities from graphite and other minerals, and has been tried out by the Waipuna Kauri-gum Company (Limited). The process is understood to have been given a good trial for freeing kauri-gum from foreign matter, with satisfactory results.

The plant consists of a vertical frame some 12 ft. high, across which are fixed eight shallow metal troughs at equal distances one below the other. Within each trough is a revolving metal roller, 2 in. in diameter, and so placed that when the trough is partially filled with gum a steady thin stream of particles is carried up over the edge and dropped past the electrode to the trough below. A hinged metal plate, which is suspended just over the roller, serves to regulate the feed. On the front of each trough and parallel to the roller is an adjustable electrode, which when charged acts on the material as it drops from the roller. The gum, being a non-conductor, drops vertically into the trough below, but the wood, charcoal, and other foreign matter is conductive and is drawn out past a deflector-plate to fall clear in front of the separator. Gum is therefore cleaned in stages as it falls from trough to trough, finally dropping into a bin below the machine.

About 5-horse-power is used in generating the supply of electricity, which is transformed up to a maximum of 35,000 volts with 0.04 ampere consumption. Owing to the small amount of current used, there is no danger to the operator despite the high voltage.

The separator will only work with comparatively dry material containing not over 5 per cent. of moisture, from which all fluffy wood-fibre has been first removed by winnowing or other methods,