

KAURI-GUM.

The quantity of kauri-gum exported during 1917 amounted to 4,594 tons, value £291,917, as compared with 5,456 tons, value £339,882, during 1916. The total quantity and value of this fossil resin exported to the end of 1917 were 353,873 tons and £18,167,939 respectively.

Dredging for gum on the swamp land of North Auckland having proved successful, an Otago gold-dredge, the "Duke of Gordon," was dismantled for removal to the gumfields.

PHOSPHATE.

The only operations in connection with the quarrying of phosphate were those of the Ewing Phosphate Company at Clarendon, Otago, which produced during the year 5,050 tons. The total output for this company from 1902, the year of its initiation, to the end of 1917 is 107,522 tons. The total output from other phosphate-quarries in the Clarendon-Milburn district to the end of 1917 is approximately 5,470 tons.

PLATINUM.

In the published lists of the minerals of New Zealand platinum is stated to occur in several places, associated generally with gold in gravel. It is only from Southland, however, that there is any record of platinum being obtained and exported profitably.

The Customs Department has not kept any separate record of the quantity and value of platinum entered for exportation, the value of this metal exported being included in a general total of exports by parcel-post, by which means platinum has generally been despatched from the Dominion. In Southland native platinum occurs in auriferous wash, and is distributed on the beaches and coastal terraces from Blue Cliffs, west of Invercargill, to Longbeach, Waikawa River, east of Invercargill, over a distance of about ninety-two miles. It is probable that the platiniferous sands of Southland have been derived from serpentine or other olivine-bearing rocks, which are known to occur in fiordland. In Russia and in Lapland platinum has been found in a matrix of serpentine (altered peridotite).

Native platinum has been obtained in payable quantities from claims at Cameron Creek, Groveburn, Orepuki, Pahi, Round Hill, Steel Head, Bushy Point, Waipapa, Otara Beach, Twelve-mile Beach, and Waikawa. The coarsest and heaviest samples have been obtained from west of the Waiau River, that obtained east of Otara being extremely fine. Direct from the gold-saving mats at the alluvial workings at the Waikoau River, Rowallen, as high a proportion as 1 oz. platinum to 3 oz. gold has been obtained.

The platinum is collected by miners as a residue, after amalgamation, of alluvial gold, and is reduced by further washing to about a 50-per-cent. concentrate, the remainder of the concentrate being chiefly iridosmine (osmiridium).

During the earlier and more prosperous era of gold-mining alluvial miners did not save the platinum, as the banks would not give more than a few shillings per ounce for mat concentrates of platinum and osmium-iridium; consequently by far the greater proportion collected on the gold-saving matting at alluvial claims was thrown away. As years passed the price increased; about 1907 it reached £6 per ounce for new refined platinum; during 1917 it was quoted on the London metal-market at £14 10s. per ounce. Prior to 1898 the Round Hill Gold-mining Company at Orepuki obtained 29 oz. platinum.

The principal exporters of platinum are the Invercargill branch of the National Bank of New Zealand and Mr. John Kingsland, of Invercargill, who together have during the past ten years exported on an average 30 oz. platinum (when refined) per annum. Between 1907 and 1916, inclusive, the former exported 106 oz. platinum, the net price realized being £600; Mr. Kingsland during the past ten years has exported about 300 oz. of approximately 50-per-cent. concentrate for a net return of £908. The richest parcel of platinum purchased and washed by Mr. Kingsland contained 67 per cent. platinum, and was obtained from a 7 oz. parcel from west of the Waiau River.

The following are the results of assays of concentrates taken direct from the gold-saving mats of Smith's Claim, Round Hill: No. 1 sample—Gold per ton of concentrate, 55 oz.; platinum per ton of concentrate, 72 oz. No. 2 sample—Gold per ton of concentrate, 15 oz.; platinum per ton of concentrate, 51·5 oz.

The following is the result of an assay by Mr. A. Z. Clarke, of Melbourne, of a sample of concentrate from rich wash from the Otara claim, submitted by Mr. Kingsland: Osmiridium, 15 dwt. 7 gr. per ton; platinum, 7 dwt. 14 gr. per ton; gold, 4 dwt. 22 gr. per ton; monazite, 2·07 per cent.; thorina, 0·67 per cent.

VI. STONE-QUARRIES.

(1.) QUARRY INSPECTION AND STATISTICS.

The inspection of stone-quarries and those places which come under the operation of the Stone-quarries Act, 1910, is now carried out entirely by Inspectors of Mines, who are also Inspectors of Stone-quarries in their respective districts. It having been found in some cases that a laxity existed by the management in carrying out the safety provisions of the Act and regulations, strict compliance is now insisted upon by the Inspectors. There is, unfortunately, no provision under the Act for returns of output and other statistics by quarry-owners; the statistics available and here published are therefore somewhat incomplete.