During 1917 water was used for sluicing auriferous alluvium at 198 claims, employing 618 persons, in Otago, Southland, and on the West Coast. The quantity of water utilized per claim varies up to about 40 cubic feet per second. Most of the sources of water-supply are privately owned, but on the West Coast and in Central Otago the Government has constructed, and now maintains, very extensive water-races for the use of miners.

On the West Coast the Waimea–Kumara Government water-races, in length about forty-five miles, have a capacity of 220 cubic feet per second; the cost of construction has been approximately £250,000, the value of gold obtained by use of the water being about £1,400,000.

In Central Otago the Mount Ida Government water-races, in length about twenty-two miles, have a capacity of 51 cubic feet per second; the cost of these races to the Government has been about £80,000. The water is generally sold from Government races at a charge of 2½d. per sluice-head per hour. Of recent years the cash received for water sold has been less than the cost of the upkeep of the races. During 1917 sixty-three miners were employed on claims using Government water, and gold to the value of £15,075 was obtained therefrom.*

Power from water-motors is used in the Reefton district at the Progress Mines for milling and ore-reduction, and in Central Otago on three gold-dredges.

There are three hydro-electric mining transmissions. On the Waikato River the Waihi Gold-mining Company has installed a 9,000-horse-power plant at Horahora Falls, near Cambridge, a distance of fifty miles from the mines and reduction works at Waihi and Waikino; the transmission pressure is 50,000 volts. The power is used for winding, air-compressors, reduction works, lighting, and other purposes. The company has the right to supply local authorities *en route* with power for public distribution.

At Kanieri Forks, near Hokitika, there is a hydro-electric power-station, formerly the property of Ross Goldfields (Limited), but recently purchased by the Kanieri Forks Power Company. The water-supply is carried by races from Lake Kanieri; from the peltons 675 horse-power is obtainable. The transmission pressure is 24,000 volts.

From the Fraser River, near Alexandra, Otago, water is taken by the Earnscleugh Gold-mining Company for hydro-electric power for its gold-dredges, 300 electrical horse-power being utilized.

V. MINERALS OTHER THAN GOLD.

Tungsten-ore.

The quantity of tungsten-ore exported during the year amounted to 161 tons, valued at £28,972, as compared with 266 tons, valued at £49,070, in 1916. The following statement shows the quantity and value of ore exported:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£
1899	32	2,788	1910	143	15,070
1900	54	2,635	1911	138	11,853
1901	2	83	1912	135	13,347
1902	39	1,200	1913	221	22,933
1903	42	1,439	1914	204	21,498
1904	17	791	1915	194	27,784
1905	28	1,848	1916	266	49,070
1906	55	3,407	1917	161	28,972
1907	137	15,486			
1908	68	6,055	Totals ..	**1,994**	**230,522**
1909	58	4,263			

The quantity of tungsten-ore concentrate obtained during the year was 199 tons (value £37,863) as the result of treating 19,655 tons of scheelite-bearing quartz, from which gold to the value of £8,098 was also obtained.

During the years 1914–17 inclusive, covering the period of the war, the value of scheelite concentrate produced exceeded that exported by £9,527. The price paid per unit of tungstic acid in the shipment has recently been raised from £2 15s. to £3 8s., being double the market price ruling immediately prior to the outbreak of war.

During the past year no new development of importance has occurred in this industry, although a considerable number of prospectors have been searching for scheelite-bearing lodes in Marlborough, Otago, and Southland.

* For further information regarding Government water-races see Section VII (4) of this report.