

the remainder at the Canadian Collieries Company's ovens at Union Bay, Vancouver Island. The quantity of coke made was about 248,000 long tons, of which 239,000 tons was made in the Crow's Nest district and 9,000 tons on Vancouver Island. The ovens at Union Bay had been inoperative for several years until, in 1915, they were again used, this time to supply coke for the Granby Consolidated Company's new smelting works at Anyox, Observatory Inlet.

After deduction of the amount of coal made into coke, the net quantity to be taken into account as part of the mineral production of British Columbia in 1915 is approximately 1,652,000 tons. While there will be some changes made after the final returns for the year shall have been received, it will not be sufficient to considerably affect the total, as here given. The net production of coal in 1914 was 1,810,967 long tons, so that there will be a net decrease for 1915 of about 159,000 long tons. On the other hand, there will be a gain in coke, for against a production of 234,577 long tons in 1914 the estimated quantity for 1915 is 248,424 tons. Shown in money, the difference in value between the production of coal and coke combined in 1914 and 1915 will be \$473,303, the respective totals being \$7,745,847 for 1914 and an estimated total of \$7,272,544 for 1915.

VANCOUVER ISLAND COLLIERIES.

Western Fuel Co.—Of the Vancouver Island coal mines, those of the Western Fuel Co. made a substantial increase in output in 1915 as compared with 1914, their total for 1915 having been 411,470 tons against 310,564 in 1914, a gain of 100,906 tons—72,514 tons from the Nanaimo mines and 28,392 tons from the new mine known as the Reserve Shaft mine. The increase would, doubtless, have been considerably larger but for a disastrous explosion which for some time seriously interfered with production from the Reserve mine. The company's Nanaimo operating mines include the No. 1 or Esplanade Shaft and the Protection Island mine. A brief official description of these mines, which are connected underground, is as follows. "No. 1 mine is situated at the south end of the Esplanade, in the city of Nanaimo, and has been in operation for many years, with good prospects for many years to come. The present operations are at a depth of 600 to 1,200 ft. below the surface, with a large submarine area. This mine has three openings, namely, the main hoisting (No. 1) shaft, Protection and Newcastle Island shafts. These shafts are connected and are part of the Douglas and Newcastle seams, and all are equipped with hoisting apparatus in case of emergency.

"The Newcastle seam is from 3 ft. to 3 ft. 6 in. in thickness, and is of a very hard nature; it is worked on the longwall system, to which it is well adapted. It is 60 to 70 ft. deeper than the thicker Douglas seam which, it is of interest to note, was first opened when, in 1884, No. 1 shaft 17 ft. and No. 2 14 ft. in diameter were sunk to it after a bore-hole, which was put down in 1881, had shown the seam to be at a depth of 650 ft. and to there be 8 ft. 6 in. in thickness. In 1887 No. 2 shaft was deepened and at 71 ft. below the Douglas seam it entered the Newcastle seam, there about 6 ft. thick. It will thus be seen that these Nanaimo mines have been producers of coal for more than 30 years. The Reserve mine is distant from Nanaimo about five miles. The shaft is in the centre of a 2,500-acre virgin coalfield. Sinking was commenced in 1910, and coal was reached, at a depth of 1,043 ft., in April, 1913. Main and auxiliary shafts 350 ft. apart were afterward

connected. The coal, where cut by a rock tunnel from the shaft, showed 14 ft. in thickness of the Douglas seam, the coal being clean, firm, and of good quality. Ventilation of the two shafts was provided for by a pair of 90-in. Sirocco fans connected to a 24 by 30 engine by a rope-drive and standing on substantial concrete foundations 80 ft. distant from the shaft with two concrete tunnels having a total area of about 110 sq. ft. The surface equipment is modern, with tippie and screening plant at the main shaft. The tippie building is a commodious structure, and the handling capacity of the plant is 2,000 tons of coal in nine hours.

Canadian Collieries.—The Canadian Collieries (Dunsmuir) Limited, operates two collieries, namely, Comox and Extension. These collieries were previously owned and operated by the Dunsmuir interests but were acquired in 1911 by the organizers of the Canadian Collieries.

The mines of the Comox colliery are situated in the neighborhood of Cumberland, about 70 miles north of Nanaimo. A standard-gauge railway connects the mines with the seaboard at Union Bay, where there are a coal-washer and a battery of coke-ovens. The mines that have been worked in recent years are Nos. 4 and 7 slopes and Nos. 5, 6 and 8 shafts. There has not been much change since 1913, when electric power was substituted for steam, much new machinery and mine and railway equipment put in, and considerable underground development work done. Before all this preparation for increased production of coal was completed labor troubles were experienced, commencing in the autumn of 1912 and continuing throughout 1913, and these adversely affected the supply of fuel to markets then open. Since these difficulties have been overcome there has not been a sufficiently large demand for coal to admit of the mines being worked anything like full time. The changed conditions are shown by the production figures over a series of five years. For 1911, 1912, and 1913, respectively, the gross output of coal from these mines was 437,335, 475,803, and 508,095 long tons; for 1914 it was 394,731 tons, and the estimate for 1915 places the quantity at 360,410 tons. As compared with 1914, last year's production shows a decrease of 34,321 tons. The successful conclusion of negotiations with the Granby Consolidated Co. for the supply of coke for its smelting works at Anyox, on the Pacific coast, provided means for profitable use of between 45,000 and 50,000 tons of slack. Speaking generally, the plain fact is evident, that there was not a market for anything like the quantity of coal that could have been produced at Cumberland had there been a considerably larger demand for it.

At the company's Extension mines, of which four have been in operation in late years, there was an improvement over the conditions that obtained in 1914, for the increase in output in 1915 was 35,149 tons, which a little more than compensated for the decrease at Cumberland, leaving the net increase from the whole of the company's mines at 828 tons.

Pacific Coast Coal Mines, Ltd.—The flooding of this company's South Wellington mine early in the year, water from a nearby old mine having broken through into it, caused a suspension of output of coal from workings previously productive, the result having been a decrease from South Wellington of 25,645 tons. However, the company's new Morden Shaft mine produced 22,500 tons, so the net loss was only 3,145 tons. The South Wellington mine production figures for the two years were 130,645 long tons in 1914 and 105,000 (estimated) in 1915. In 1911, however, an output of