

Table V. shows the proportions of the total mineral production made in each of the various districts into which the Province is divided. It will be noted that in 1906 the Boundary (Yale) district again has the honor of first place, followed in order of output by the Coast district and East Kootenay, with West Kootenay, for many years the Province's greatest producer, only fourth on the list. The Coast and East Kootenay districts, however, owe a considerable percentage of their outputs to the coal mines situated within their limits, whereas in the other districts the production is entirely from lode mining.

The official comment on other tables published in the report is as follows:—

Table VI., Yield of Placer Gold to Date, gives the statistical record of the placer mines of the Province from 1858 to 1906, and shows a total production of \$68,721.10. The output for 1906 was \$948,400—a decrease of about two per cent. as compared with 1905, due to a dry season with a shortage of water for hydraulic mining.

Table VII., Production of Lode Mines, relates entirely to the lode mines of the Province, and shows the amounts and values of the various metals produced each year since 1887—the beginning of such mining in the Province. The gross value of the product of these mines is \$119,774,022. The production in 1906 was \$17,484,102, an increase over the last preceding year of \$2,303,933, or about 15.2 per cent.

Table VII., Coal and Coke Production per Year to Date, contains the statistics of production of the coal mines of the Province. The total amount of coal mined to the end of 1906 is 24,144,633 tons (2,240 lbs.), valued at \$72,815,423. Of this there was produced in 1906 1,517,303 tons, valued at \$4,551,909, a larger amount than had been produced in any previous year. In these coal production figures the coal used in making coke is not included, as such coal is accounted for in figures of output of coke.

The amount of coal used in making coke in 1906 was 381,773 tons, from which was produced some 199,227 tons of coke, worth \$996,135, a decrease of some 72,558 tons from the total of coke produced in 1905. These

figures are to a certain extent misleading, however, as in 1905 some 3,694 tons of coke were put into stock, whereas in 1906 all the coke made was sold, together with 11,670 tons taken from stock, making the total coke sales for the latter year 210,897 tons. The production of coke in 1906 would have been much greater than it was but for the very urgent demand for coal and the general scarcity of labor, which taxed the companies' resources to keep up a sufficient supply of coal. A strike at the Crow's Nest Pass collieries in the autumn also greatly diminished the output.

Table IX., Production of the Metalliferous Mines, gives the details of production of the mines of the Province (excepting coal mines) for the years 1903, 1904, 1905 and 1906, and the districts in which such productions were made, showing the tonnage of ore mined in each district with its metallic contents and market value. The total tonnage of ore mined in the Province during 1906 was 1,963,872 tons, having a gross value of \$19,432,502.

The following table shows the percentages of such tonnage and values derived from the various districts of the Province:—

	Tonnage, Per cent.	Values, Per cent.
Boundary (Yale) district ...	60.2	44.2
Trail Creek (Rossland) mining division ...	14.2	16.3
Fort Steel (East Kootenay) mining division ...	9.2	15.1
Slocan district ...	0.8	2.7
Coast district ...	11.1	6.5
Miscellaneous and other districts ...	4.5	15.2
	100.0	100.0

Table X., Comparative Mineral Production, compares graphically the output of mineral products in British Columbia with that of similar products in all the other Provinces of the Dominion, and shows that in 1906 British Columbia produced of the metals an amount over 757. of that of all the other Canadian Provinces combined.

VEIN FORMATION AT COBALT, ONTARIO

By J. B. TYRRELL, Mining Engineer, Toronto, Ont.

At the meeting of the Canadian Mining Institute, held in Toronto last spring, Dr. C. R. Van Hise, of Madison, Wisconsin, delivered an instructive address on "The Ore Deposits of the Cobalt District," in which he emphasized the facts already pointed out by Messrs. Campbell, Knight, and others, that there is a distinct and regular sequence in the order of segregation of the various ores in the veins, the cobalt and nickel ores being segregated out first, while the silver ores were introduced at a later date.

Speaking of the silver ores, and of the probability that they again might have been introduced at two separate and distinct periods of time, he said: "To what extent are the rich deposits the result of one segregation under comparatively deep-seated conditions, and to what extent of two segregations, one under deep-seated and the other under shallow conditions? Did the shattering which resulted in the entrance of the silver

solutions occur under deep-seated conditions, so that the silver of the rich shoots was deposited as a closing episode of practically one continuous period of concentration? Or, after the first concentration was complete, did the shattering then occur, and the later enrichment take place under comparatively shallow conditions, the two periods of concentration being separated by a long interval? Whatever is the final answer to the above question, it appears certain that the extremely rich superficial deposits of a few feet in thickness, connected directly with the zone of weathering, are due to secondary concentration under surface conditions. I refer to the nugget horizon, which is so rich in silver, and in which the smaltite and cobaltite have been largely altered into secondary minerals, or have been leached out altogether. It is practically certain that this extraordinarily rich upper film in the Cobalt district has been produced by two concentrations, one under deep-seated