

Considering the mineral production in detail, the report states that placer gold to the value of \$1,115,300 or an increase of about five per cent. was made. Of this \$530,000 was produced by the Atlin mines, while the Cariboo yield was about the same as that of the preceding year. Dredging for gold has not as yet proved commercially successful, on account of mechanical difficulties, which may, however, be surmounted. The lode gold production for 1904 is given as \$4,589,608, or a decrease of about eight per cent., due, it is stated, to the diminished output of the Rossland and Nelson districts. In the Boundary district, however, the gross gold contents of the ore mined was about ten per cent. greater than in 1903, while, notwithstanding a decrease in the tonnage of gold-bearing ore from the Coast districts, an increase of about eight per cent. in gold values is recorded. As a result of the bounty offered by the Dominion Government on lead, a very largely increased production of this metal was made, the total output being 36,646,244 lbs., of which 21,071,236 lbs. were produced in East Kootenay; 10,611,227 lbs. in the Slocan, and 3,091,648 lbs. in the Ainsworth division, as compared with a total output of 18,089,283 lbs. in 1903. About 80 per cent. of the silver produced in British Columbia is obtained from silver-lead ores, and consequently an increased output in this metal was also made, about 50 per cent. of a total production of 3,222,481 ounces valued at \$1,719,516 having been derived from the Slocan district. In copper, a further advance of about four per cent. is shown, the total output for 1904 being 35,710,128 lbs., valued at \$4,578,037. The following districts contributed to this general total:

Boundary District	22,066,407 lbs.
Rossland "	7,119,876 "
Coast "	5,960,593 "
Yale-Kamloops "	328,380 "
Nelson "	220,500 "
Various Districts	14,372 "
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	35,710,128 "

The average assays of the ores of the various camps, based upon copper recovered, were as follows:—Boundary Camp, 1.38 per cent. copper.; Rossland, 1.12 per cent., and Coast District, 3.68 per cent.

While as yet the production of zinc has not assumed important proportions, the recent more favorable condition in respect to the marketing of this product, have induced mine owners in the Slocan district to give the subject serious attention. Until within the last year or so, the occurrences of zinc in association with the galena ores in this district, were regarded as a detriment, as in the marketing of the lead the smelters penalized all ores carrying any considerable quantity of zinc. Now, however, most of the concentrating mills have been equipped to enable them to separate out a "zinc concentrate" from the jigs and tables. These concentrates will average from 38 to 48 per cent. zinc, in the form of blend, but also carry as impurities from 2 to 5 per cent. lead, from 5 to 15 per cent. of iron, and from 20 to 45 oz. of silver to the ton, together with a quantity of generally silicious gangue matter. Most of the smelters purchasing zinc ores are now using the Belgian

furnace, in which the ore is mixed with coal or other reducing agents placed in a clay retort, the zinc being distilled off and caught in a condenser. Naturally, iron and lead are considered objectionable in this process, as they destroy the retorts, and in consequence add greatly to the cost thereof. Crude Slocan concentrates, therefore, have not been readily marketable on this account, and recently two "zinc enrichment" plants were established in the Kootenays, with a view to removing the impurities to a degree, at least, sufficiently to render them non-detrimental. The silver, however, still remains, being directly included in the zinc blende, and Mr. Robertson states that, so far as he was able to observe, no separation could be made, except by smelting, or by some other form of disintegrating the zinc blende. On this account, the price offered by ore buyers for the silver contents is very low, and mine operators therefore have so far found it advisable to allow as much zinc to pass into the lead concentrate as the smelters will accept without penalty, in which case, of course, the zinc is lost, but more than made up for by the better price obtained for the silver. It is stated, however, that there are two or three newer processes especially adapted to the treatment of ores of this character, and an electric process is being developed in Vancouver which may be utilized in small units, and thus help to solve the problem by the local treatment of the concentrates.

Coal mining in British Columbia is now developing rapidly, activity in the East Kootenay areas more than compensating for the loss sustained following the introduction of mineral oil in California for fuel purposes, by which the market of the Coast collieries' product became seriously restricted; thus in 1902 75 per cent. of Vancouver Island coal was marketed in California; in 1903 only about 45 per cent., while in 1904 this increased to about 53 per cent, the total output from the mines last year being 1,023,013 tons gross, or an increase of 20 per cent. over the 1903 returns. A still more satisfactory showing was made by the Crow's Nest Pass Coal Co., whose production for the year was 662,685 tons, of which 350,900 tons were used in the manufacture of coke. Most of this coke is sold to the Kootenay smelters, but the export trade from the United States, ascribable to the development of markets in Montana by the completion of the branch line of the Great Northern Railway into Morrissey, from 27,758 tons in 1903 to 97,690 tons in 1904. It was recently announced that the Canadian Pacific Railway had commenced the construction of a branch line to give access to the Nicola district. The coal fields in this section came into considerable notice last year, and much prospecting was done, the area being found to extend beyond the limits of its previously determined boundaries. As yet, of course, nothing beyond superficial development work has been carried on, but the quality of the coal, and its coking capabilities, from analyses made by the Provincial Government Assay Office, proves to be even better than was believed.

In the Provincial Mineralogist's notes on the general developments of the year, many matters of present interest are discussed. The first of these refers to the increased equipment of the smelting works operated by large companies in the