

precious metals from the ore with which it is smelted. These respective advantages and disadvantages are not new discoveries, but are an old story to smelter managers and metallurgists.

In a paper by Mr. R. R. Hedley, now smelting manager of the Hall Mining & Smelting Company, which is published in the proceedings of the Canadian Mining Institute for 1898, he wrote:

"Speaking of possibilities, however, I consider that they are far greater in the Boundary Creek district. There the variety is greater and a perfect self-fluxing ore is obtainable. I do not pretend to say that there is an abundance of ore of such grade as to maintain a large plant, but I do say that there is every indication that such will prove to be the case. Once transportation is had, development will be pushed, and plants will follow. Ores will be treated both by direct smelting for matte and by previous concentration. There are very clean ores of mixed pyrites, chiefly pyrites and chalcopyrite, that will carry 8 to 12 per cent. copper and low silica; others of low pyrites, and gangue that will form an excellent slag. Should the coal, on development, prove to be of good coking quality and in sufficient quantity, a plant with large capacity will treat ore as cheaply as anywhere on the continent. Even bringing in coke, at a cost of \$12.00 per ton laid down, I have no hesitation in stating that a 500-ton plant (two furnaces) using steam power, will smelt at a cost not to exceed \$2.75 per ton of ore."

This estimate of the possibilities of the situation is being closely realised. Under these circumstances therefore it does not appear that the local lead smelters have been charging altogether unreasonable smelting rates, but we already have assurance that they will not be found least willing to make sacrifices to help out the situation.

Meanwhile the Provincial government has announced its intention of adjusting the incidence of the mineral tax, and if the railways and smelters will reduce their charges the net value of the product will be increased. This can be further increased if a line of action suggested to the Dominion government is carried out, and it doubtless will be if the pressure of public opinion is exerted by the people of Eastern and Western Canada interested in the prosperity of the Kootenays. The speeches of Sir Wilfred Laurier and Mr. Paterson, at the Canadian Manufacturers Association, seem to indicate that the administration has decided to continue the present tariff policy, and there is therefore no longer a reason why the advantages of that policy should not be extended to the lead-mining districts of British Columbia which have hitherto only suffered from its drawbacks.

The government has shown its disposition by offering a bounty to encourage the erection of a Canadian lead refinery, and it is now announced that the C. P. R. is adding a refinery to its plant at Trail so that in a few months we may hope that there will be Canadian pig lead on the market, and the necessity for a readjustment of the duties on lead in all stages of manufacture will thus become urgent. Such changes should then be made as would encourage the establishment of these manufacturers in Canada, and increase the consumption of our own pig lead which should have reasonable protection.

Since writing the above we learn that action has been taken by the smelters and transportation companies, in the direction of assisting the lead-mining industry during the present depression in prices. The smelters in-

dicate their intention (assisted by railways) to reduce the combined freight and treatment rates on lead ores to \$11.00 for lead ore assaying 20 per cent. lead, with 20 cents per ton additional for each additional per cent. of lead to 40 per cent., with a change in the zinc limit from 10 per cent., as in the past, to 8 per cent., above which the usual penalty of 50 cents per one per cent. is charged. This amounts to a reduction of \$4.00 per ton of ore containing not more than 8 per cent. zinc, and of \$3.00 on all ores carrying 10 per cent. zinc or over. These rates, it is claimed, involve an undue sacrifice and are only emergency rates to apply while lead is below £12 in London, and with each advance of £1 in the price of lead, there is to be an advance of \$1.00 in the freight and treatment rates until the rates of last year are reached.

The smelters have chosen this time when prices are likely to advance, and the first advantage will probably be to the mine owner to ask him to share the speculation in prices. It is found that upon an average, about five months elapse between the purchase of lead ore and the sale of the product therefrom. The smelters have hitherto borne the risk of the fall in prices during this interval. Now they stipulate, when making the reduction in rates, that they will pay for 90 per cent. of the estimated value when received, and make final settlement in ninety days at the prices ruling then.

MINERAL PRODUCTION OF BRITISH COLUMBIA IN 1901.

MR. W. F. ROBERTSON, Provincial Mineralogist, has submitted to the Hon. D. M. Eberts, K. C., Acting Minister of Mines, the following approximate estimate of the mineral production of the Province for the year 1901. The Department of Mines has, of course, exceptional opportunities of correctly estimating the aggregate yield, even before all the returns from individual mines have been sent in, and the figures as given should therefore be reasonably near the mark. The returns from East Kootenay at first sight appear somewhat misleading, the estimated value of the product for 1901 being nearly the same as that of 1900, while the tonnage for the first-mentioned year is shown to have decreased by over sixty thousand tons. It is obvious, however, that while the coal and coke production from Fernie has been included in the estimate of values, tonnage from these collieries has been doubtless advisedly omitted from the column showing the number of tons of mineral produced. We extract the following from Mr. Robertson's explanatory letter:

"This estimate is based upon the actual returns of a number of the mines, and for those mines from which returns have not as yet been received the output is based upon their approximate known tonnage for the past year, together with the assays of the ores from the same mines for the previous year.

"You will note that these are not given as final statistics for the year, which can only be obtained after all