

part in the industrial life of this province than that of her metalliferous ores.

13 p.c. of World's Coal in Alberta and B. C.

The British Empire possesses one quarter of the world's coal, 70 p.c. of which is in Canada, and British Columbia is credited with an actual and possible reserve of 72,074,940 tons, and 13 p.c. of the world's coal is in the provinces of Alberta and British Columbia. Vancouver Island alone is credited with a probable coal reserve of seven billion tons of the highest grade bituminous coal, and the Crow's Nest with a probable four billion tons and the Nicola Valley, Coalmont and Princeton coal fields with twenty three billions tons. As a domestic and steam coal the Coalmont coal has few equals on the American Continent. It is of high calorific value and low in moisture and ash.

The Comox Coal on Vancouver Island, as a steam coal, is almost equal to Welsh Steam Coal and is also a good coking coal. The Nicola Valley Coal is a high-grade lignite and while some of the seams produce a fair domestic and steam coal, it is probably the richest by-product coal in the world, and from tests which the writer made in England of the Nicola Valley coal some of the seams were shown to contain as much as 2 p.c. nitrogen, and as high as 42 gallons of oil per ton, and from 20 to 40 lbs. Sulphate Ammonia.

Smokeless Fuel Possible.

The report further stated that with a modern process of low temperature distillation, a high grade smokeless fuel could be manufactured from this Nicola Valley Coal, and the value of the by-products recovered in the process would be approximately \$9.00 per ton plus the coke, or smokeless fuel which would be 70 p.c. of the coal.

Vancouver is paying out at the present time about \$7,000 per day for gasoline. The following figures will be of interest and cause B.C.M. readers to think a little more of the natural resources of British Columbia.

Speaking of the shortage of petrol during the war, Mr. F. D. Marshall, President of the Gas Engineers, London, gave a concrete instance of the average results of two extreme types of coal, which had been subjected to low temperature carbonization on a commercial scale, one a poor coal classed as colliery refuse worth about fifty cents per ton—the second a high grade Scotch Canal coal rich in oils and worth about \$5.00 per ton.

Remarkable Results Obtained.

Based on carbonizing these coals at the rate of only 200 tons per day or 72,000 tons per year, they obtained on the average of the two, the following results:

Motor Spirit (Petrol)	260,000 gals.
Light Oils	588,000 "
Middle Oils	1,126,000 "
Bitumen	8,000 tons.
Sulphate Ammonia	526 "

In addition to this, 44,000 tons of smokeless fuel or coke practically gratis, as the yield of spirits, oils and ammonia pays for the cost of the raw coal, plus the cost of carbonizing, etc. The value of spirits, oils and sulphate alone at the prevailing prices would be over \$200,000, but besides these the 44,000 tons of coke, if further gasified, will yield (in addition to the 526 tons of ammonia obtained by the preliminary carbonization of the coal) a further quantity of 1,047 tons of sulphate of ammonia, making a total yield from the original coal of 1,573 tons of sulphate. In this second process each ton of coke will yield on the average 121,000 feet of power gas, and every 70 cubic feet of this gas when consumed in a good gas engine, will develop what is termed one brake horse power. So that from 44,000 tons of coke which we obtain gratis, 75,000,000 brake horsepower, on the aggregate for one year, which would equal approximately 7,000 brake horse power per day free of cost.

If we were to deal with our coal rationally we would take from it all the valuable volatile matter it contains in the form of spirits, oils and tar acids, and turn the resultant pure carbon or coke into power. That is the only sane way to deal with this natural standard asset, instead of "as we do now" allowing it to escape in huge volumes of black smoke, poisoning the atmosphere, destroying vegetation, and seriously affecting the health of the people.

The total amount of coal mined in the province in 1918 was 2,578,724 tons of which there was used for making coke 276,479 tons, leaving a net production of coal used as such of 2,302,245 tons.

The Present Large Waste in Coal Consumption.

Vancouver City consumes about 200,000 tons of coal per annum, at a cost of approximately \$1,500,000. This quantity of coal contains about 2,000,000,000 B.T.U's of heat but by the present method of burning coal, only about 20 p.c. of the heat is effective, the balance is wasted.

If this 200,000 tons of coal was carbonized say by the Mond process, sufficient producer gas would be made to supply all the industries with power, and all the residences with gas for cooking. As an instance, in Staffordshire in England, the Mond Gas Company supply several hundred manufacturing firms with producer gas with complete success. The gas is piped 110 miles and sold to the consumer at .03 cents per 1,000 cubic feet.

Carbonize Coal for Industrial Progress.

What is being done elsewhere can be done here. The principle of carbonizing coal should be adopted to supply cheap fuel for manufacturing and domestic purposes, that the Province may advance as an industrial centre. It will then be possible to supply a coke to smelt our iron and other ores at less than half the cost today, and householders and manufacturers with gas at a reasonable price per thousand and the farmer with a fertilizer that will keep his land producing.

The Future of B. C.

The future of this province depends entirely on what we ourselves determine to make it. So far as the mining industry is concerned, it should continue to prosper. The established producers are generally in good shape to continue production even at lower metal prices, and under more settled conditions much new development should take place. British Columbia has very large areas of undeveloped and unprospected mineral lands, and under post-war conditions there should be considerable accession to the ranks of prospectors. As citizens we should see that capital is available for the purpose of assisting these prospectors and for the legitimate development of prospects which have the earmarks of becoming mines.

Transportation.

Transportation facilities and difficulties from mines to smelter, etc., are problems which retard very seriously the development of mining properties in the Province. As a rule prospectors or owners of prospects have to make their own trails, as the government won't spend any money on trails or roads until the properties have been fairly proved, and even then will provide only half the cost, and many good prospects have been abandoned on this account. It is a matter of regret that the efforts of the lesser mining companies have met with so little success and insufficient capital has had much to do with the failure of many of these properties. At the same time, it must be conceded that many of these properties would have developed into large and successful mining concerns had smelter and transportation facilities been more favorable.

The Smelter Question and Small Companies.

The smelter question is a very serious one all over the Province. As smelter conditions exist today only mining