CORRESPONDENCE

High Grade Coals in Alberta.

Editor, Canadian Mining Journal:

Sir,—A letter, dated the 8th of February, 1918, from Kingston, Ont., having appeared in the March edition of the Canadian Mining Institute Bulletin, opens up a very important subject not indicated by the title. The writer, Mr. J. C. Gwillim, says, "We are inclined, nowa-days, to resent the alienation or private control of some of our natural resources. Yet we are, or were, least concerned about the two most vital ones, food and fuel. . . . It is left to the coal miners alone to produce enough fuel. . . . Soon we may expect to receive little or no hard coal from Pennsylvania; it is being exhausted and will be conserved by the American people."

The total coal output of Canada last year was about fourteen million tons, and our import of coal from the United States about seventeen million tons, of which four million tons was anthracite or hard coal, and the balance bituminous.

Mr. Gwillim asks where should we be if the United States stopped the exportation of coal to Canada? The present writer has recently as well as previously suggested; that very unpleasant things might happen in Canada if a serious strike occurred on the railways or at the collieries in the United States.

The above three possibilities would all be equally serious and therefore the sooner we people on the Canadian side of the line face the music the sooner will common sense place us in an independent position. We must, however, give the United States and its fuel controller our grateful thanks for the brotherly way in which this problem was dealt with during the past winter.

Western Canada possesses the most magnificent coalfields, filled with seams of all qualities and which are in thickness also unequalled anywhere else on this earth.

Mr. John Stirling, the Chief Inspector of Mines for Alberta, in reference to the possible output of the Province of Alberta, tells us that the possible output might have been over eight million tons, whereas, it only amounted to about 4,863,414 in 1917, or 214,810 tons in excess of 1916.

A recently issued estimate of the coal resources of Canada made by Mr. White, of the Dominion Conservation Board, gave the Province of Saskatchewan credit for a store of over sixty-six billion tons of lignite. Experiments having been made by the Dominion Government, in conjunction with the Advisory Council of Scientific and Industrial Research it has been stated that they will erect a works to treat this and other lignite deposits, and convert them into coked or cindered coal, after extracting the by-products, and will finally convert them into briquettes equal to anthracite. This scheme if it works out successfully, may to some extent relieve the situation in that part of the Dominion.

Mr. White does not credit Alberta with the possession of any stores of anthracite, but he does credit that Province with 846 million tons of semi-anthracite, and 932 billion tons of sub-bituminous. As no details of these estimates are given, it is impossible to question his figures in detail. We will be satisfied for the moment to find that he credits the Province with some semi-anthracite, which for general purposes is a much more useful quality of coal than anthracite.

Now for a few facts, there are between Bankhead and to at least as far as the divide between the Kananaskis and Elk valleys, several coalfields containing the most magnificent deposits of coal to be seen anywhere, and the writer has in mind one of these where it is probable that twelve and a half per cent. of the whole mountain is coal.

We are fortunate to have one man out here in the woolly west, W. P. Burns ,of Calgary, who, recognizing the value of this vast wealth of coal, will without delay demonstrate that Alberta can supply a huge tonnage of very high grade authracitic coal. Before the summer comes, Mr. Burns' mining staff will be at work, and his railway engineers will be as busy as bees laying a full gauge railway track from Okotoks to the Sheep Creek coal mines, a distance of about 55 miles.

To make sure that the following details of this property are correct, they have been submitted to Mr. Alexander Sharp, Mr. Burns' mining engineer.

The property is in a synclinal basin form, and is of Cretaceous age. To those who do not know its exact location it may be stated that it lies to the south-east of Mt. Rae, and to the east of the Misty range of mountains. Here Mr. Burns owns 12,000 acres of Crown granted land and minerals extending over a distance of eleven miles. Practically the whole of this area is coal bearing and at least a dozen workable coal seams have been prospected, which are all of workable size and quality.

The property lies at an elevation of over 5,000 feet above sea level, and therefore the coal will have a down grade to its markets.

A large number of analyses have been made, but the following will be sufficient to convince the sceptical that there are high class seams of anthracitic and bituminous coals in this field:

Number.	Moisture.	Volatile Combustible.	Fixed Carbon.	Ash.
4	1.00	12.5	82.00	3.5
5	1.00	12.50	82.00	3.50
7	1.00	11.10	81.10	6.00
14	1.82	11.74	82.25	4.20
17	1.20	15.30	75.25	7.25
16	2.00	25.00	70.00	3.00

No. 5 sample gave a very high result in British Thermal Units, viz., 14,877, one pound of it evaporating 15.4 lb. of water. Its high class quality will be better realized by comparing it with other anthracite coals, thus:

South Wales anthracite	14,884 B. T. Units
Burns anthracite	14,877 B. T. Units
Banff anthracite	14,000 B. T. Units
Pennsylvania anthracite	13,999 B. T. Units

If we adopt the classification of Mr. Dana, a well-known authority on coal, a good anthracite should contain from 78 to 88 per cent. of fixed carbon and, therefore, the first four analyses would show them to be anthracitic. Mr. D. B. Dowling's—President of the Canadian Mining Institute—is probably the best known of any of those used for the classification of coals, viz.:

$$\frac{\text{Fixed Carbon} + \frac{1}{2}\text{ the Volatile Combustible}}{\text{Moisture} + \frac{1}{2}\text{ the Volatile Combustible}}$$

and under this rule 15 and upwards ranks as anthracite, 13-15 as semi-anthracite, 3.5 to 6 as bituminous, and a higher class bituminous as 6 to 10. No. 16 in the above table gave a yield of 73% of coke, which in its turn gave a fixed carbon content of 94.9%.

How many hundreds of millions of tons of similar coals are to be found in this part of Alberta between the Elk divide and Bankhead it is at present impossible to say, but only railway communication and cheap freight rates are required to open it up to supply all the needs of the prairie provinces.