

CORRESPONDENCE

Bore-Hole Exploration.

Editor Canadian Mining Journal:

Sir,—I have read with interest the article by Mr. C. H. Hitchcock, on "Bore Hole Exploration," in your issue of January 15th, and also the letter by Mr. C. J. Harrington in your issue of March 15th, in which he takes issue with Mr. Hitchcock's statement that the "Knight and Stone" core barrel is considered the best double tube core barrel on the market.

Mr. Harrington, by his statements, proves that he is not familiar with the core barrel, which he undertakes to describe, or with the results obtained by the use of the different types of double tube core barrels.

The "Stone Patent" core barrel, which is also known as the "Knight and Stone" core barrel, is provided with means for causing a portion of the circulating water to flow back or upward through the core barrel, thus exerting pressure below the core and raising the broken pieces of rock or mineral. This prevents these pieces from being ground away on the piece of core below and therefore lost. This return water principle is not confined to the rigid type of double tube core barrel; but is also used with two different styles of ball-bearing double tube core barrels; these are shown in the patent drawings and are manufactured and sold by the Diamond Drill Contracting Company of Spokane, Wash., and the E. J. Longyear Company. However, these ball-bearing styles are recommended by the patentee and manufacturers only for very soft material, for like the Sullivan Machinery Company's type, they are short lived either in hard or alternating hard and soft material. But little if any more core can be saved with the stationary inner tube ball bearing type of core barrel in soft material than by intelligent handling can be saved with the "Stone Patent" rigid type double tube core barrel.

The "Sullivan" core barrel, like the "Stone" ball bearing type, is hung on ball bearings; but it is solidly plugged or closed at the upper end. If a piece of soft core such as clay or sticky shale is crushed in the lower end, or in any other part of the barrel, water must necessarily fill the balance of the barrel and when so confined and prevented from escaping by the crushed soft material it will act as effectually as a bar of iron in preventing the barrel from passing down over further core. If the drilling is continued all core will be ground away and lost.

With the "Stone" barrel, of either type, the water escapes freely from above the crushed piece of core and the water pressure from below assists in raising the core and freeing the block.

Mr. Harrington states that the "Sullivan" double tube core barrel is universally used for drilling in coal. I do not doubt that it is extensively used, as is all of the Sullivan machinery equipment which is widely advertised. He, however, fails to state that where this core barrel is used ninety-five per cent of the drilling is done with some other type of core barrel, usually the old single tube type, and the ball bearing core barrel is used only to cut through the coal. Whereas the "Stone" type of core barrel is used for the entire length of the hole and I have never heard of it having been superseded by any other type for drilling through the softer friable material.

Where the "Stone" core barrel has been introduced it has practically replaced all other makes, single and

double tube alike. Ninety per cent. of the drilling in the Western States and British Columbia from California to Alaska is done with the "Stone" return water types and largely with the rigid style. The advantage is not alone in the value of the core saved, for in saving a greater percentage of what may be useless hard rock core an increase in the footage drilled is made and a decrease in diamond breakage amounting from ten to fifty per cent is accomplished. This, in itself, when recognized, should cause the "Stone" return water core barrel to supplant all others.

One of the purchasers and users of the "Stone" core barrel, Mr. M. Ahearn, of Denver, Colorado, has a patent double tube core barrel without the return water feature, this is superior to the "Sullivan" double tube core barrel or any other of that type known to the writer in that the construction allows for the lubrication of the ball bearings, which are protected from the action of the circulating water. It also allows for the use of larger and stronger thrust balls.

Yours, etc.,

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March 30, 1918.

\$400,000 FOR EXPERIMENTAL PLANT.

Ottawa, April 7.—The Advisory Council for Scientific and Industrial Research has been informed by the Government that the Council's recommendation that a plant be erected in the Province of Saskatchewan for the production of a high-grade domestic fuel from the lignite of eastern Saskatchewan has been approved. The Government has provided a sum of \$400,000 for the construction and operation of this plant.

In this undertaking the Dominion Government is acting in co-operation with the Governments of the Provinces of Saskatchewan and Manitoba.

The Council has received a request from the Ontario Government asking that R. A. Ross, C.E., one of the members of the Council, be appointed to act with Arthur Cole, C.E., as a committee to take immediate steps for the development of the peat bogs of Ontario, and the production from them of a merchantable fuel. The Research Council has concurred in these appointments and the investigation will be proceeded with.

Winnipeg, April 10.—It is stated that an arrangement has been entered into between the Federal Government, the Province of Manitoba, and the Province of Saskatchewan, whereby a plant for the manufacture of anthracite briquettes from prairie lignite coal will be established in the Estevan district in Saskatchewan.

The plant will cost \$400,000, the Federal Government putting up \$200,000 and the Provinces \$100,000 each. The plant will become the property of the two Provinces on its completion. The Federal Government has charge of the erection of the plant, and it is expected that it will be in operation by next winter.

At Victoria, B.C., the Central Iron Committee has proposed that the initial objective of the British Columbia steel delegation, when it shall meet the Federal authorities in Ottawa, shall be, first and foremost, the establishment of a pig-iron plant. The construction and operation of such a plant, it is contended, may be the thin end of the wedge that will eventually shape itself into the establishment of an important iron and steel industry on the coast of British Columbia.