

The election of Mr. D. B. Dowling as president of the Canadian Mining Institute should result in increased activity in Institute affairs in the branches in coal mining districts. Mr. Dowling was nominated by members of the Rocky Mountain branch, and, as his headquarters are at Ottawa, the West will have the advantage of a representative in the East at all important Council meetings. Mr. Dowling is one of the senior officers of the Geological Survey and is, of course, familiar with the varied problems that the Institute has to deal with. His peculiar position as a link between East and West is one which suggests a special field of usefulness, and one which he can be counted upon to develop in the best interests of the Institute.

### CORRESPONDENCE.

#### Bore-Hole Exploration.

Editor, Canadian Mining Journal:

Sir,—In your issue of January 15th, under the heading, "Bore-Hole Exploration," I note the statement that "the Knight and Stone double tube core barrel is considered the best double tube core barrel on the market." To experienced drill operators and those familiar with the various types of core barrels, it is unnecessary to comment on this statement, but as the article apparently was intended for general information on an interesting subject, a brief description of the types of double tube core barrels and their advantages may be of interest.

The so-called "Knight and Stone Core Barrel" is a modification of the old rigid type core barrel, which barrel consists of an outer and inner tube, rigidly connected, so that both turn together. The advantage of this type over the single tube is that the water passes between the two barrels and reduces washing of soft core to a minimum. The modification to this barrel mentioned is in a provision for returning part of the water through the inner tube and out into the hole at the top of the core barrel. The advantage claimed for this barrel is that the upward motion of water in the inner tube tends to lift the core. The theory is that if water passing down through a single tube barrel washes core out, then an upward stream should wash it in. In practice, the important thing is to reduce the washing to a minimum, so that when soft, decomposed or friable material is encountered, the flowing water in the inner tube defeats the very purpose of the double tube barrel, namely, to prevent washing. In gravel or material of similar nature, there is some advantage in this type of barrel, but for the ordinary soft ore, for which a double tube barrel is generally used, the old rigid type is preferable.

When it is desired to get accurate records in soft or friable material, such as clay, salt, soft ores, decomposed material or coal, or where it is important even in hard, solid formation, to get the maximum amount of ore, the standard Sullivan double tube core barrel, ball-bearing type, is by far the most reliable barrel. This barrel is more elaborate and expensive than either of the barrels referred to. It is so designed that the inner tube is suspended from ball bearings at the top and does not rotate with the outer tube.

That is to say, the outer tube, to which is attached the bit, does the cutting, and the inner tube passes over the core without friction or vibration and protects the core entirely from the washing effect that is objectionable in the single tube or rigid tube core barrel. No more convincing proof of the superiority of the ball-bearing type can be given than the fact that in drilling coal, which is one of the most difficult materials to core, the Sullivan barrel is in universal use.

I am sending you a cut of the ball-bearing core barrel, which I happen to have, and this will show clearly its construction. I regret that I do not have a cut of the rigid type, but, as stated, it simply consists of two barrels that are rigidly connected and turned together. In appearance, as far as the cut goes, they are very similar, but it will be readily understood that there is quite a difference in the action of these two barrels.

I have been in charge of drilling operations in various parts of the world for the past twenty-five years and I do not hesitate to say that where accurate records are desired, the double tube ball-bearing type core barrel is far superior to anything I have ever seen.

Yours, etc.,

E. J. HARRINGTON.

Flower Station, Ont., Feb. 25, 1918.

#### Composition of Natural Gas.

Editor, Canadian Mining Journal:

Sir,—Some little time ago there was an interesting correspondence with regard to the composition of natural gas, and probably, therefore, the following particulars in reference to something quite unusual may be of interest to your readers. The full text will be found in the 1918 Year Book and Souvenir Programme of the Spokane Mining Convention, on page 87:

"Natural gas and oil fields have not been developed to any extent in the Pacific North West, but there are indications of both oil and gas. . . . In at least one district natural gas has been found in quantities that suggest important possibilities, and the probability, also, of oil deposits of value. This district is Benton County, Washington, near the centre of the State. The Spokane—Benton Natural Gas Co. are the operators, and they propose to pipe the gas to Spokane, a distance of 120 miles. One well is producing one million cubic feet of gas per diem from a depth of 706 ft. A pond of water on the anticline keeps at one level all the time and has a scum of petroleum oil always showing on the surface.

"The analysis of the gas is the remarkable point, this analysis gave: methane, 76.6 per cent.; ethane, 12 per cent.; propane, 7.20 per cent.; butane, 8.80 per cent., and 0.40 per cent. of oxygen."

It may be remembered that in the writer's previous communication on this subject he referred to the occurrence of other gases than methane, and also of hydrogen. He is satisfied that if other gas well products were examined and reported on, we might have very valuable information in regard thereto.

The writer also thinks that the gas above reported on was probably a wet gas.

Yours, etc.,

JAMES ASHWORTH.

921 Drake St., Vancouver, B.C., Feb. 22, 1918.