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Editorials—	Page.
Ball mills and stamps	325
Porcupine ores and rocks	326
The crime of the Lusitania	326
The Utilization of our fuels	327
Alien Enemies	328
The Principles underlying the occurrence of oil and gas and their application in Western Canada, by Justin S. DeLury	331
Newfoundland, by P. B. McDonald	334
Structural Features of the Alberta Oil Fields, by D. B. Dowling	335
Field operations of the Geological Survey in 1915	337
Metallurgical practice on the Witwatersrand, by F. L. Bosqui	341
The Belgian Relief Fund	344
Mining in Alaska in 1914	345
Coal Mining in China, by W. B. Parsons	346
A chant of hate against England, and a reply	348
Porcupine Vipond Mines, Annual Report	349
Personal and General	353
Special Correspondence	353
Markets	356

BALL MILLS AND STAMPS

Now that the Vipond and McIntyre mills have been in continuous operation for several months, interesting comparisons are being made between the plants using rolls and ball mills and those using stamps for the main crushing operation in treating Porcupine gold ores.

The large plants, Dome and Hollinger, are equipped with stamps, and most of the published data on Porcupine metallurgical processes is that which has been gathered at these two plants. Comparisons have been made with results obtained at the Vipond and McIntyre; but these have been of a rather general nature and unsupported by actual figures. Such figures should now be obtainable, and there seems a probability that the rolls and ball mills will make a better showing than the stamps.

In a paper written for the Canadian and American Mining Institutes, and published in the February 15 issue of this Journal, Mr. Noel Cunningham says:

"At the Vipond and the McIntyre mills, rolls and ball mills are doing the work done by stamps at the other mills. The ore is chiefly soft schist and the ball mills have been entirely satisfactory; power per ton of ore ground appears to be slightly higher than with stamps for the production of identical results. Steel consumption is about the same, the stamps perhaps having a shade the better of the argument in this respect; cost of operation and repairs is in favor of the ball mill, while first cost and uniformity of operation (what might be termed lack of operating "grief") are decidedly in favor of the ball mill. While my own experience in the district has been entirely with stamps, and their performance was satisfactory, I am of the opinion that the ball mill is preferable for breaking down the Porcupine ore ahead of the tube mills."

Mr. C. H. Poirier, who designed the Vipond plant, says in its favor that first installation and upkeep is less than one-half that of stamps for equal capacity, that the capacity in tons per horse power is double, and that there is a reduction of one-quarter the amount of solution required, and consequently reduction in cost in handling solution after crushing. Overhead mill space is also reduced one-half.

Mr. Cunningham, on the other hand, states that power per ton of ore ground appears to be slightly higher than with stamps. He says that the latter crush 5 to 6 tons per 24 hours per horse power.

At the recent meeting of the local branch of the Canadian Mining Institute the topic was discussed; but no figures were presented.