

the Royal Society of Canada the occurrence of certain clays and sands in the basin of Moose river, Ontario, that are thought to be of Cretaceous age; some of the clays are high grade refractories. H. V. Ellsworth, in describing the radium-bearing pegmatites of Ontario<sup>1</sup>, states that radium and thorium minerals occur in the pegmatites in relatively great abundance, so disseminated that it appears improbable that concentrations will be found sufficiently large and rich to be of commercial value.

In addition to the above, much valuable information on the development of the mining industry is contained in the annual reports of the various provincial departments of mines.

SOURCES OF REPORTS AND ARTICLES REFERRED TO IN THE TEXT: <sup>1</sup>Geological Survey, Ottawa. <sup>2</sup>Mines Branch, Department of Mines, Ottawa. <sup>3</sup>Department of Mines, Toronto, Ontario. <sup>4</sup>Canadian Mining Journal, Gardenvale, Quebec. <sup>5</sup>Canadian Institute of Mining and Metallurgy, Drummond Building, Montreal, Quebec.

### III.—SEISMOLOGY IN CANADA.<sup>1</sup>

Seismology—the branch of science which treats of earthquakes—has received considerable attention in Canada during recent years. It has been generally recognized that earthquakes are frequent in regions of adjustment of strata and are characteristic of the newer mountain and coast regions where abrupt changes in level are present. Seismological researches, while recording their location, duration and intensity, seek to determine particular causes. They ascertain the physical properties of the earth's crust and interior as revealed by the peculiarities of the recorded waves after their passage through the earth. Instruments as developed by seismological research for the better recording of earth tremors are being used commercially in many ways, not the least important being for the mapping out of underground densities in order to locate minerals and oil without frequent and expensive borings.

During the years for which records are available, Canada has been but slightly affected by earthquakes. Historically a record shows that the St. Lawrence valley was shaken by a great quake in 1663. In 1899 a great disturbance occurred in Alaska at Yukatat bay, very close to Canadian territory. Slight shocks are very occasionally experienced in British Columbia and along the drainage system from the Great Lakes to the sea, but no damage to property or loss of life has been caused within the past century. It may be said that no active fault lines of any importance are found in Canada.

At present five seismologic stations, all maintained by the Dominion Government, are in active operation in Canada, and are situated at Halifax, Ottawa, Toronto, Saskatoon and Victoria. Two of these—at Toronto and Victoria—are under the Meteorological Branch of the Department of Marine and Fisheries, while the three remaining stations are controlled by the Dominion Observatory Branch of the Department of the Interior, with the assistance and co-operation of the universities at Halifax and Saskatoon.

The records for Toronto and Victoria are published from Toronto, whence monthly bulletins are issued to seismological observatories interested, giving full details of all quakes as registered. The records for Ottawa, Saskatoon and Halifax are published from Ottawa. Monthly bulletins are issued to about 230 seismological observatories interested giving full details of the quakes as registered. These

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