

## ECONOMIC GEOLOGY IN CANADA.

pyrrhotite and chalcopyrite with some pyrite and occasionally a little arsenopyrite, occurs in fissures that correspond in strike and dip with tongues of diorite porphyrite, and for long distances follow their contact with older formations. The Centre Star-LeRoi main vein fissure follows the contact between monzonite and augite porphyrite for a long distance. A perusal of the report impresses one with the importance of placing in charge of the development of bodies of ore so dependent on geological conditions an engineer having a thorough training in geology. The report is accompanied by numerous maps and illustrations, of which some of the more illuminating are the stereograms and sections showing the relation of the ore bodies to the geological formations.

Another report well worthy of mention is the posthumous report of A. E. Barlow on "Corundum, Its Occurrence, Distribution, Exploitation and Uses". This is probably the most complete and exhaustive treatise that has yet been published on this subject. A brief description is given of the general geology of the section of country in which the corundum deposits of Ontario occur, and very detailed information is given regarding the geological relations and petrographic character of the igneous rocks with which the corundum deposits are directly associated. These consist of nepheline syenite and associated alkali syenites occurring at the junction of granite and limestone or in the limestone near the granite contact. These syenites are the differentiated products of one highly alkaline and aluminous magma, which in like manner is a peripheral differentiation phase of the granite at whose contact it occurs. After a discussion of the various hypotheses that have been advanced to account for the origin of corundum, the author concludes that "the simplicity and at the same time completeness of the Canadian occurrences of corundum, combined with the fresh and unaltered character of the associated minerals, at once removed all doubts as to the pyrogenic and primary character of the mineral." Descriptions are also given of the various known deposits of corundum throughout the world and of their mode of occurrence.

The "Report on the Non-Metallic Minerals used in the Canadian Manufacturing Industries," by Howells Frechette, presents in a concise form the results of investigations made in the commendable effort on the part of the Mines Branch to lessen Canada's dependence on foreign countries for minerals and mineral products. Mineral matter in a crude or refined state enters into a great many manufactures. The purpose of the report is two-fold: first, to point out to dealers in Canadian minerals the possibility of extending the home market, and, second, to encourage manufacturers to utilize raw materials produced at home. These investigations should render the country more self-contained, and redound to the mutual benefit of the mineral and manufacturing industries.

Another report that serves a useful purpose is the compilation, by Ernest J. Chambers, entitled "The Unexploited West." This was published by the Railway Lands Branch, Department of the Interior. It presents in one volume of convenient size the results of the various explorations that have been conducted in the valley of Mackenzie