

CORUNDUM MINING IN ONTARIO*

By Alfred Ernest Barlow.

[Dr. Barlow was lost on the Empress of Ireland. His Memoir on Corundum has just been published.]

The presence of corundum in the northern part of the county of Hastings, Ontario, was really made known as the result of a visit made in October, 1896, by Mr. W. F. Ferrier, then lithologist to the Geological Survey of Canada. In the Summary Report for the year 1896 Mr. Ferrier relates the history of the discovery and the circumstances which occasioned his visit to that region. He writes: "One of the most interesting occurrences upon which I have to report is the recent discovery of corundum in Hastings county, Ontario. This came about in a somewhat unusual way. In 1893 I came into possession, by purchase, of a number of specimens collected by Mr. John Stewart, formerly of Ottawa, amongst them being a package labeled 'Pyroxene crystals south part of Carlow.' On examining these specimens some time ago I recognized them as corundum, and immediately took steps to ascertain, if possible, the precise locality from which they came. As you are aware I communicated the facts to you and was authorized in October to visit the township of Carlow, endeavor to locate this mineral, and determine the extent of the deposit. I was accompanied by Mr. A. A. Cole, and after considerable difficulty found the mineral on lot 14, con. 14, of the township of Carlow, Hastings county, Ontario."

The growth of the corundum mining industry of Canada which was only made possible by and is a direct outcome of Ferrier's initial discovery, has been both steady and rapid. Starting in April, 1900, about 60 tons of graded grain corundum was produced, although only 3 tons of this were shipped. In the following year 444 tons was produced; in 1903 this production was nearly doubled when 806 tons of corundum was cleaned and graded. The maximum output was in 1906, when 2,914 tons was produced, but only 2,274 tons was sold, valued at \$204,973. In the following year there was a very much greater discrepancy between production and sales, due to the industrial depression prevailing in 1907, and of the total output of 2,682 tons credited to this year, 790 tons was left in stock in the warehouse. From 1909 to the present there has been a better balance preserved between production and shipments, so that in 1912 there was the large shipment of 1,960 tons of graded grain corundum valued at \$239,091, being the largest amount received since the establishment of the industry. Of this large total in shipments, 1,928 tons valued at \$205,819 was exported, leaving only 32 tons to supply the home market. The total shipments of corundum made since the beginning of the industry until the end of 1913 have amounted in value to nearly \$2,000,000.

The corundum bearing areas are situated close to the edge of the great Canadian Shield of the pre-Cambrian rocks, about midway between Ottawa and Toronto. They are in the midst of an old and partially settled district with numerous wagon roads, some of which are good while others can only be considered as passable. Craigmont, the centre of the corundum mining industry, is most easily reached from Barrys Bay, a station on the Ottawa and Parry Sound branch of the Grand Trunk Railway, 109 miles west of Ottawa. Barrys Bay is nearly 12 miles north of Combermere, a small village on the Madawaska river, about

7 miles north of Craigmont. A small steamer provides daily communication for passengers and mail between Barrys Bay and Combermere, and at certain intervals reaches Francois point on the York river, the deep water landing place about 2½ miles from Craigmont.

The Irondale, Bancroft and Ottawa Railway runs almost parallel with and usually in the vicinity of the southwestern extension of the main belt of the corundiferous syenites from Kinmount Junction (where it connects with the Lindsay-Haliburton branch of the Grand Trunk Railway) to Bancroft, a distance of a little more than 54 miles. At Bancroft connection is made with Central Ontario Railway for Trenton, on the main line of the Canadian Northern and Grand Trunk Railways, the intervening distance between these stations being about 86 miles. Trenton is 110.5 miles east of Toronto on the Canadian Northern Railway and 101.19 miles by way of the Grand Trunk Railway. The Central Ontario Railway crosses the Toronto-Montreal line of the Canadian Pacific Railway at Central Ontario Junction, 224.4 miles west of Montreal or 114 miles east of Toronto.

The Kingston and Pembroke Railway affords access to the most southerly of the three belts of corundum bearing rocks, Olden station, between Sharbot Lake and Kingston, being located on this belt.

Investigation of the corundum deposits.—The Director of the Bureau of Mines of Ontario being convinced of the great importance of the discovery of corundum, and the probability of the early establishment in this region of an extensive mining industry, deputed Mr. Willet G. Miller, then professor of geology at the School of Mining, Kingston, Ontario (now Provincial Geologist of Ontario), to carry out the necessary investigations. Much interest had been evinced by the discovery of this mineral by manufacturers of emery wheels and others so that it seemed advisable that a careful examination should be made at once of the Carlow deposit in order to obtain more information, especially from an economic point of view. Moreover it was considered that a determination of the character of the deposit would materially assist in the intended search for other occurrences of the mineral in the district. Professor Miller's instructions, therefore, called for an examination of the corundum bearing rocks, and to search for other deposits of the mineral in the district as well as to make careful notes on deposits of other minerals of economic importance which might be met with in the field. In this work Professor Miller had the able and zealous assistance of Messrs. R. T. Hodgson and W. C. Rogers, then students at the Kingston School of Mining. Early in July in company with Mr. N. T. Armstrong, of New Carlow, Professor Miller spent a few days in the study of the original locality where corundum had been discovered, as also two other deposits of the mineral in this vicinity. Later in the season, from August 2 until October 15, Professor Miller, having closely studied the mode of occurrence of the corundum, spent most of the time in prospecting for the mineral in the northern part of the county of Hastings, and the southern part of the adjoining county of Renfrew. As a result outcrops of corundiferous rocks were found in seven different townships, covering a distance of about 30 miles.

*Extracts from Memoir 57 Geological Survey, Ottawa: Corundum, its occurrence, distribution, exploitation and uses, by Alfred Ernest Barlow.