

On the Mica Deposits of Ontario and Quebec.

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The summer season of 1910 was devoted to an examination of the principal mica regions of Ontario and Quebec; with the object of gathering material for a revised edition of the monograph on mica, issued by the Mines Branch in 1905.

While the chief purpose of the tour was to examine and report upon the mica deposits at present being worked, time was also devoted to an examination of old mines, with the object of collecting geological data bearing on the origin of the mica, and of compiling as complete a map as possible of the localities in which the mineral has been found to exist in commercial quantities. While it was found impracticable to visit every small surface pit from which mica has, in the past, been taken, all available information regarding such was collected, and will be embodied in the full report.

Quebec.

Since the original monograph was published in 1905, new amber mica occurrences have been located and worked in Quebec, north of the districts covered by Mr. Cirkel's report, and it would appear that the mica-bearing region extends considerably north even of the area which had already been prospected.

In the Lievre River district, the most northerly workings are situated a few miles from Notre Dame de Laus, in the township of Bigelow, where Mr. W. Parker, of Buckingham, has carried on considerable surface work, and discovered extensive deposits of mica on range V, lot 52. The mica is a rather dark amber, and of only medium splitting quality.

In the Gatineau region the mineral has been mined as far north as range II, lot 28, of the township of Egan, where Mr. Joanis, of Maniwaki, has taken out several thousand dollars worth of fair amber mica.

Prospectors were met with in the vicinity of Pemichangau Lake, who reported favourable indications on ranges V. and VII. of the township of Blake.

The most westerly mica deposits which have as yet been worked in the area under consideration are situated in Litchfield and Huddersfield townships, where Messrs. Bowling Bros., of Thornby, and the Calumet Mica Co., of Bryson, have carried on some surface work.

It may be remarked that the mica bearing dykes (pyroxenites) are to be found cutting the Laurentian rocks throughout almost the entire district situated immediately north of Ottawa and the Ottawa River, and over an area of which the boundaries to the north, east, and west are as yet but poorly defined. The presence of these pyroxenite dykes, while indicative always of a possible occurrence of mica, does not necessarily imply the existence of a commercially valuable deposit. In some districts mica in quantity is to be found in pockets throughout the entire mass of such a dyke, while in others but scanty traces of the mineral are to be met with, though the rock, to all appearances, is identical in both places.

Owing to its occurrence in such sporadic fashion, mica is among the most uncertain, and, from a miner's point of view, one of the most disappointing of min-

erals to follow. Often when the indications of a continuance in depth of the deposit are most favourable, the fissures narrow down, and all traces of the mica are lost; on the other hand, seemingly barren rock will suddenly yield large quantities of high-grade crystals, which, however, may form only an isolated group, and be underlain by many feet of rock before mica is again met.

While it is not intended to assert that mica in quantity exists on every lot in the region between the Lievre and Gatineau rivers, the district is nevertheless so extensively traversed by pyroxenite dykes exhibiting traces of the mineral that the possible existence of deposits on almost any lot cannot be said to be precluded.

In addition to the localities mentioned, mica also occurs farther to the east, in Argenteuil county, Wentworth township, where several operators have mined on a small scale. The mica in the last-named district, as in the Saguenay region, Berthier County, still farther to the west, is chiefly of the muscovite variety.

Ontario.

The mica-mining region of Ontario has not been extended by any new discoveries of importance since the publication of the last report.

The chief centres of mining activity are Sydenham and Micaville, in the townships of Loughborough and North Burgess, respectively. In the former district, the General Electric Company's mine — the old Smith and Lacey — still remains the chief producer, and employs an average staff of 35 men. The output and reserves of this mine play an important role in fixing the market price of the mineral, and the General Electric Company, which carries on its mining operations under the name of the Loughborough Mining Company, can be said to practically control the market.

The above company also owns various other mines in different parts of the country, chief among which are the Cantin mine, on lot 1, range IV., of South Burgess township; the Hanlon mine, on lot 11, range VI., of North Burgess; and the Chaibee mine, on lot 7, range A, of the township of Wright (Quebec). None of the latter mines were working when visited.

The occurrence of a yellowish, and rather brittle mica, whose composition and exact species have not yet been determined, in a highly metamorphosed rock in the Sydenham district, may be mentioned here as constituting a type of mica deposit in many respects dissimilar to the majority of occurrences visited. The deposit in question is at present being worked by Mr. J. Richardson, of Kingston, with an average staff of half a dozen men, and is situated on lot 1, range X., of the township of Loughborough.

The intrusive rock to which the mica probably owes its origin had not, at the time of my visit, been met with—the depth reached by the workings not exceeding 60 feet. The mica appears to have been deposited by pneumatolytic emanations from the igneous intrusion of some basic rock which did not reach the surface, but which will probably be met with at an inconsiderable depth.

Three beds, from 1 to 2 feet thick, of a reddish quartzite, are met with in the workings. These layers

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