

MOLYBDENITE DEPOSITS OF ONTARIO.

By A. L. Parsons.

During the month of May and part of the month of June, 1916, the writer was engaged in an examination of the occurrences of molybdenite in eastern Ontario with a view to ascertaining not only the mode of occurrence but also the possibilities of production of this mineral which is in considerable demand at the present time for the manufacture of high-speed steel. In the present state of the industry it is difficult to accurately judge the possibilities of old prospects or even new ones upon which only a little work has been done, as most of the high-grade molybdenite has been removed from the older prospects and the remaining material has been oxidized and to a large extent washed away, while in the newer prospects it is seldom that fresh molybdenite shows on the surface, and it is necessary to estimate the quantity of rock that has been removed and then estimate the proportion of high-grade ore that has been laid to one side. In either case the results are likely to be fallacious, with the probability of minimizing the quantity of molybdenite present.

In view of the demand for molybdenite for munition work, this preliminary report is submitted before the completion of the work so that those interested in the development of the industry may have a list of the known occurrences to guide them in their search for properties and also that the prospector may have the common association well in mind.

With but few apparent exceptions to the rule, the molybdenite of eastern Ontario is intimately associated with pegmatite dikes in the gneisses and crystalline limestone, probably of Grenville age. In case limestone is present it is usual to find that the pegmatite is not directly in contact with the limestone but is separated from it by a band of pyroxenite which is presumably due to a chemical reaction between the pegmatite and the limestone. Where this pyroxenite is present it usually carries the greater part of the molybdenite and with it considerable quantities of pyrite and pyrrhotite. In certain instances brown and black mica replace part of the pyroxene. When limestone is absent and the pegmatite has intruded gneissic rocks the pyroxenite band is seldom present and the molybdenite is in the normal pegmatite, but in only one case did the writer find an outcrop where no trace of pyroxene was to be seen. In the more normal pegmatite deposits tourmaline is frequently associated with the molybdenite, and in certain instances the pegmatite becomes more siliceous until it appears to be an ordinary quartz vein. The deposits at Net Lake, near Timagami, district of Nipissing, appear to be an exception to the pegmatitic origin of the deposits. At this place the molybdenite is present in a series of gash veins of quartz, which contain in addition small quantities of gold and copper, the latter being in the form of chalcopyrite. Whether these veins are pegmatitic in origin is not definitely known, though such an origin has been suggested for some of the gold veins at Poreupine. In case the pegmatitic origin for this deposit can be shown, the deposits of eastern Ontario may all be grouped together as being associated with pegmatite.

A list of localities where molybdenite has been found in Ontario is given below and brief comments are made concerning the development of some of them.

Addington County.

Sheffield Township.—Lot 5, con. XIV. Chisholm

mine. About a dozen men were working in clearing the pits and in regular mining work. The old stock piles were being cobbled and the high-grade ore shipped. The mine is being operated by the International Molybdenum Company, Limited.

Lot ..., con. ... On the farm of Timothy Dwyer is a pit about 8 x 10 feet and 10 feet deep, at which some molybdenite was seen. Not working.

Lot 8, con. XV. On the farm of Matthew Spratt a pit about 10 x 20 feet and more than 10 feet deep was sunk in pegmatite by L. L. Cailloux. The bottom of the pit was filled with water.

Lot 12, con. XII. On the farm of A. Kellar five open cuts have been opened up by O'Briens-Greenfield, of Superior, Wisconsin, and about 160 pounds of pure flake have been taken out in the prospecting. Five men were working at the time of the writer's visit.

Lot 15, con. XVI. Owner, William Wager. Property not visited.

Victoria County.

Laxton Township.—Lot 5, con. XI. Two mines are being developed at this place, one on the farm of Wm. Adair by T. Horscroft; the other a few feet away in Mud Turtle lake by Douglas Ponton and A. J. H. Russell. At the time of the writer's visit, Mr. Horscroft was just installing a pump and had done very little work, but the writer was later informed that he had taken out ore which was being shipped to the Mines Branch, Ottawa. Little could be seen of the association, but a small pegmatite dike shows up and a few flakes of molybdenite were found in pyroxenite above water level in the pit which had been opened. The other property, under the management of Captain Russell, was not working on account of the high water which had flooded the shaft. This shaft is about 50 feet deep, and encounters a micaceous pyroxenite containing considerable molybdenite. Several tons of concentrating ore were in a stock pile.

Lutterworth Township.—Lot 7, con. X. On property belonging to A. Y. Hopkins, of Kinmount, a small opening has been made in a small quartz vein in gneiss. Some molybdenite has been found, but probably this vein is not economic. There is, however, a larger mass of pegmatite a few rods to the west which might pay for further prospecting.

Renfrew County.

Bagot Township.—Lot 15, con. X. Owner, Samuel Hunter, Calabogie. No work has been done for some years and the deposit does not appear to be economic.

Lot 28, con. XII. On the farm of John Culhane, Ashdod, development work has been done by R. R. Gamey. The molybdenite occurs in a pyroxenite mass adjoining pegmatite. Mr. Culhane informed the writer that about 200 pounds of pure flake had been taken out. There is about half a ton of concentrating ore on the dump. The pit is about 40 feet long by 8 feet wide and averages 4 feet in depth.

Lot 27, con. IV. On the farm of Wm. Warren development work has been done by Mark J. Paterson and Sir Henry Pellatt. The pits were filled with water and the molybdenite-bearing rock was not seen in places. Several tons of low grade ore were seen on the dump.

Lot 25, con. IV. On the farm of Mr. Morin of Springtown. Property not examined.

Brougham Township.—Lots 35 and 36, con. XIV. An open cut about 10 x 70 feet has been excavated by Legree Bros., Dacre, in a micaceous pyroxenite. About 8 tons of ore running possibly 3 per cent. MoS_2 , together with possibly 400 pounds of pure flake, had been

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