

# GM 01032

MINERAL DEPOSITS OF THE EASTERN TOWNSHIPS

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Énergie et Ressources  
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Québec 

QUEBEC DEPARTMENT OF MINES

MINERAL DEPOSITS BRANCH

M\_I\_N\_E\_R\_A\_L D\_E\_P\_O\_S\_I\_T\_S

No G M- 1032  
B R A N C H

NOTES FOR MR. A.O. DUFRESNE

Mineral Deposits of the Eastern Townships

a) Asbestos.-

The asbestos deposits of the Eastern Townships were first noticed in 1862, and first commercial production was in 1878. To-day, there are 11 producing mines. The deposits are found in a discontinuous geological formation known as the serpentine belt which outcrops at intervals from Lake Memphremagog on the Quebec—Vermont boundary, to Gaspé peninsula.

It is particularly interesting to note that in 1948 - 70 years after the first production - a major discovery of asbestos was made in the very heart of the Thetford—Black Lake asbestos mining district. United Asbestos Corporation are at present engaged in underground development of these recently discovered deposits, which are estimated to contain 65 million tons of asbestos-bearing rock averaging more than 4 per cent of fibre.

Such a discovery is pleasant news - but no surprise - to those who appreciate the difficulty of locating concealed mineral deposits under the geological conditions prevailing in the Appalachian region of Quebec. The chances are that other deposits await discovery, and unless there are radical and unpredictable improvements in exploratory techniques, it will be many tens of years before we may say that reasonable possibilities have been exhausted.

During and since the war asbestos production has been rapidly increasing, but the producers do not seem to have been able to keep up with the demand. Consequently exploration has been active and much of the effort has been put into the search in other fields - Ontario, Western Quebec, Newfoundland and British Columbia.

The serpentine belt is the most productive formation geologically speaking in the Province of Quebec, and in fact, for the whole of Canada it ranks second only to the Sudbury basin as a source of mineral wealth. The Eastern Townships is the "natural" field for the activities of those interested in the search for new asbestos deposits. It is in the interest of the Province to facilitate these activities and thus assure that the field will attract prospectors.

b) Base Metals.-

The Eastern Townships has been termed "the cradle of copper mining of Canada. In the Annual Report of the Geological Survey of Canada for 1866, over 500 copper-bearing localities are listed in the district. Five mines were producing in 1872, including the Eustis which closed down in 1939 after 74 years of continuous operation. The deposits are distributed in three bands or zones chiefly in the counties of Brome, Shefford, Richmond, Megantic, Sherbrooke, Wolfe and Compton.

To-date, operations in this field have been on a small to moderate scale. New discoveries leading to production have been made from time to time, such as the Weedon Mine in 1909, Ascot Metals

(Aldermac Moulton Hill Deposit) in 1942, and the successful exploration activities in 1950, by Ascot Metals on the Moulton Hill Deposits and the old Suffield Mine. As a result of the last two discoveries the Moulton Hill property has resumed production, and plans have been announced for the immediate development to the production stage of the Suffield deposit. Under the prevailing conditions in the region it is to be expected that concealed deposits will be located from time to time for tens of years to come, if exploration activities are maintained.

Three pertinent features of recent activities should be emphasized:-

- 1) The Moulton Hill and Suffield discoveries have shown that zinc and lead as well as copper are found in the region. It is therefore not only a district of copper mineralization but of base metals.
- 2) It is very doubtful if these lead-zinc deposits would have been of economic interest fifty years ago, as their successful exploitation depends on ore separation processes unknown at that time. There is a distinct possibility that others were overlooked during the earlier periods of exploration activity in the district.
- 3) The interested parties to the Suffield discovery have reported estimates of 9,000,000 tons of possible lead-zinc ore which suggests the possibility of mining operation on a larger scale than has been characteristic of the district.

Finally, I would point out that the late Dr. K.W. Fritzsche, one of the principals participating in the Moulton Hill development in 1942 to 1945, once remarked that "I believe our company put more time and effort into securing titles to a suitable block of ground, than we put into the geological, geophysical and diamond drilling exploration that located our deposit".

Mineral exploration is financially a highly hazardous undertaking. According to our experience, only about one company-held mining property out of one hundred is developed to the production stage, and of course a very large number held by individuals do not go beyond the most preliminary exploration stage. The prospectors therefore face heavy odds at best, and it is to the advantage of the Province to facilitate his activities in order to attract and maintain his interest.

c) Other Minerals.-

Pyrite or iron sulphide is employed as a source of sulphur and consequently is usually classed as a non-metallic mineral. It is most frequently associated with base metal deposits of copper, zinc, and lead. The output of both the Eustis and the Weedon mines was sold as sulphur and copper ore. The distribution of the pyrite deposits of the Eastern Townships is the same as that of the base metals mentioned in the preceding section. Occurrences may be numbered by the hundreds.

In view of the present shortage of sulphur in Canada and the U.S., considerable interest is now being shown in the pyrite

deposits in the Eastern Townships and exploration is underway. Deposits in which the copper content had been deemed discouragingly low are being re-investigated now. Reference to the old geological reports has indicated a dozen promising localities. There are reasonable chances that concealed deposits will be discovered.

The rocks of the serpentine belt in which the asbestos deposits are found, are also hosts to deposits of chromite and soapstone or talc. The chromite deposits were actively mined at the turn of the century and again during the first and second great wars. They do not appear at present to be profitably mineable under peace time conditions but have been found very useful in time of emergency. With two exceptions the operations were on a small scale, but yielded satisfactory returns to the few individuals interested in each venture. There is always the possibility of the discovery of deposits economically mineable under normal conditions. The soapstone deposits have been mined on a small scale for the last 30 years. In 1948, there were three operators whose total production amounted to 14,479 tons valued at \$145,361. The area favorable to the formation of steatite deposits is generally speaking the same as for the asbestos deposits and there are many occurrences in addition to the deposits being exploited.

Gold, both alluvial and lode, has been reported from numerous places in the Eastern Townships, and small scale alluvial gold mining was active in Beauce county from 1870 to 1890 when some two and a half million dollars of gold was extracted. Numerous localities have also been reported from the Sherbrooke area, notably

in Stokes, Ditton, Compton and some of the adjoining townships. Efforts to extract gold from these deposits in 1910-1912 (Beauce), from 1932-33 (Ditton Creek), and 1948 (Beauce) indicate that although interest may have waned periodically, it has not died out.

The titles to the ground upon which the placer deposits have been found are especially involved.

Another noteworthy product of mining in the Eastern Townships are the materials of construction, particularly the granites of the Stanstead Area, the marble of Orford and Missisquoi, the high-calcium lime at Lime Ridge. These materials of construction are not however considered as minerals under the Quebec Mining Act.

QUEBEC, January 18, 1951.

*Handwritten initials*

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