

ASBESTOS IN SOUTHERN QUEBEC*

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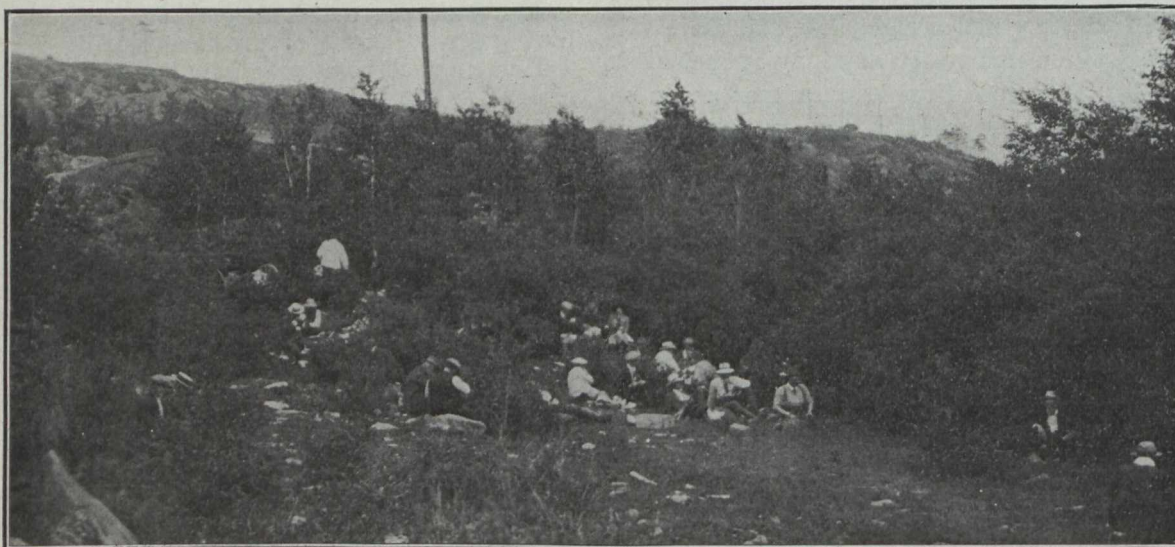
The controlling supply of asbestos for the world is obtained from southern Quebec, 150 miles or less north of the international boundary line between Canada and the United States, and about 75 miles south of the city of Quebec. The principal production is furnished by eight mines, seven of which occur within a distance of six miles. There are also several smaller properties in the vicinity. The industry was begun in a small way some 35 years ago and has advanced more or less regularly ever since. The annual production now exceeds 100,000 tons and its value is about \$3,000,000. It represents over 80 per cent. of the world's production.

Asbestos has been known in the eastern townships of Quebec since 1847, when attention was called to it in an official report by Sir William Logan, the first Director of the Geological Survey of Canada, but it was not until 30 years later that it came into com-

The growth of the industry is best known by quoting the production of a few years taken at regular intervals:

	Production,	
	Tons.	Value.
1878.....	50	
1882.....	810	\$52,650
1892.....	6,082	390,462
1902.....	30,219	1,126,688
1912.....	111,175	3,059,084

All the mines have easy railway access. The principal shipping stations are Thetford Mines, Black Lake, and East Broughton on the Quebec Central Railway, a part of the Canadian Pacific system, and Danville, on the Grand Trunk Railway. Thetford Mines is about 76 miles from Quebec, 67 miles from Sherbrooke, and 168 miles from Montreal. The other stations men-



Geological Party at Black Lake, Quebec

mercial importance. The largest deposits, those of Thetford and Black Lake, were found in 1877 during the construction of the Quebec Central Railway. Work was begun upon them almost at once and has been continued ever since.

The Danville mine, the next largest producer, was opened in 1879, and the slip-fiber deposits of East Broughton were located shortly afterward.

For the first 15 years only the "crude" asbestos was recovered; that is, fiber long enough to be extracted by hand cobbing. Although this is still a valuable part of the production, it is now a relatively small part of the total output.

After several trials, a process of mechanical concentration was begun about 1893 by some of the pioneer operators of the district, which with many modifications has been successfully used ever since. Although there have been numberless changes in the operation and appliances, the present practice is a direct development of the first principles of the earliest attempts at concentration, and much credit is due to those who originated it. Its effect may be realized when it is stated that in leading mines to-day 95 per cent. of the quantity and 75 per cent. of the value of the total production is obtained by mechanical concentration.

tioned are from 4 to 18 miles from Thetford Mines, except Danville, which is some 50 miles distant, on the Grand Trunk Railway, 88 miles from Montreal and 86 miles from Quebec.

The asbestos deposits are found in the hilly country of southern Quebec known as the Eastern Townships. Much of the district has been settled for upward of 100 years and is now generally occupied by small dairy farms. The hills are a continuation of the Green mountains of Vermont, a part of the Appalachian system.

The geological structure is complex. There has been intense folding, faulting, and regional metamorphism. Glacial drift conceals a great part of the rock surface, but glacial erosion has been an important factor in uncovering and exposing the deep-seated rocks in which asbestos occurs. The asbestos is in a series of basic igneous rocks which occur in stocks and sills that have intruded sedimentary strata of Cambrian, Ordovician, and in places of Silurian age. These basic intrusives are part of the well-known and extensive series which appears at frequent intervals in the Appalachians from Georgia to Newfoundland. The commercial production of asbestos is almost entirely limited to a small district.

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