

003446

Cm & S Co Ltd Cairnes on
Jan 14, 1933 - according to
Mining Records at Cranbrook.

Hon. W.A. Gordon
Minister

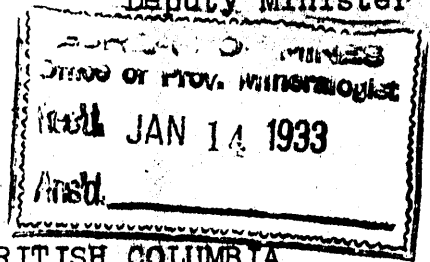
CANADA

Charles Camsell
Deputy Minister

DEPARTMENT OF MINES

GEOLOGICAL SURVEY

W.H. Collins, Director.



A MAGNESITE DISCOVERY NEAR CRANBROOK, BRITISH COLUMBIA

BY C.E. CAIRNES.

In the course of geological field work in Cranbrook district, British Columbia, this year a large and conveniently situated deposit of crystalline, rock magnesite was discovered.

The deposit forms an important part of a narrow belt of magnesite-bearing sediments extending in a N.N.E.-S.S.W. direction between St. Mary river and Perry creek and is within a few hundred yards of the road from Marysville. The most northerly exposures observed occur almost directly south of Marysville and less than a mile south of and about 400 feet above St. Mary river. From this point the belt was traced to within a mile of Perry creek. As exposed it has an average width of 150 feet or more, an average and fairly regular dip of 60 degrees W.N.W., a length of over four miles, a vertical range of about 2000 feet, and a contained average width or widths of crystalline magnesite conservatively estimated at 30 feet and possibly amounting to 50 feet or more.

The purer magnesite occurs towards the middle of the magnesite belt. It varies from coarse to finely crystalline, weathers rough, and is commonly coated rusty-brown. Fresh surfaces are pearly grey, white and cream. In places the magnesite may be traversed by irregular, small veins and veinlets of quartz but for the most part seems relatively free of visible impurities. On either side the purer magnesite body grades into material consisting chiefly of magnesite interbanded with narrow beds of quartzite and argillite. Most of the better grade magnesite forms a single band which, though not continuously exposed, is probably

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nowhere less than 15 or 20 feet thick and in places was observed to have a thickness of at least 50 feet. Locally, too, the magnesite belt includes one or more other bands of good-looking magnesite up to several feet thick.

Two chip-samples of the magnesite deposit were obtained at points $1\frac{1}{2}$ and 3 miles south of St. Mary river and about 1000 and 2000 feet, respectively, above the river. The samples (Nos. 388-R and 330) represent widths of 18 feet and 50 feet of the purest-looking magnesite at these respective localities. In addition, and particularly at the more northerly point, there appeared to be much material which could be readily sorted to provide magnesite of the same grade as the samples. The samples were submitted to the Mines Branch, Department of Mines, Ottawa, for analyses and were found to contain:-

	<u>No. 388-R</u>	<u>No. 330</u>
SiO ₂	4.54%	4.40%
Fe ₂ O ₃	2.40"	1.44"
Al ₂ O ₃	.40"	.66"
CaO	.79"	.73"
MgO	43.70"	44.80"
Loss on Ignition	48.00"	48.30"

These analyses, save in their rather high silica content, compare favourably with those of the more important commercial deposits of magnesite the world over. These are analyses of chip samples taken at or close to the surface and consequently are subject to whatever changes weathering may produce as well as such inaccuracies as this method of sampling involves; on the other hand, in actual operation it might be possible, by experienced sorting, to remove much of such impurities as are present and thereby secure a higher grade product than that indicated by an average sample.

Important references to the occurrence, composition, and technology of magnesite are contained in the following reports:-

Wilson, M. E., Geol. Surv., Can., Mem. 98, "The Magnesite Deposits of Grenville District, Quebec".

Whitwell, Geo..E., and Patty, Ernest N., Wash. Geol. Surv., Bull. No. 25, "The Magnesite Deposits of Washington, Their Occurrence and Technology".