

“A Quebec Marble Quarry”

Mine and Quarry

Vol. IV, No. 4, April 1910, pp. 384-386

The article begins:

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This article, which begins on the next page,
is presented on the Stone Quarries and Beyond web site.

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August 2015



The Main Quarry Pit, Missisquoi Marble Co.

A QUEBEC MARBLE QUARRY

Special Correspondence

The property of the Missisquoi Marble Company comprises about 300 acres of quarry lands, at Phillipsburg, in the province of Quebec, two miles from the Vermont boundary line, and bordering on Lake Missisquoi, one of the northern arms of Lake Champlain. This deposit of marble is apparently independent, being over 130 miles distant from those in St. Lawrence County, New York, and more than one hundred from the Vermont marble district about Rutland.

Thorough core drilling has shown that the marble formation covers practically the whole of the company's property, and that it is sound and of excellent quality. Its chemical composition is as follows:

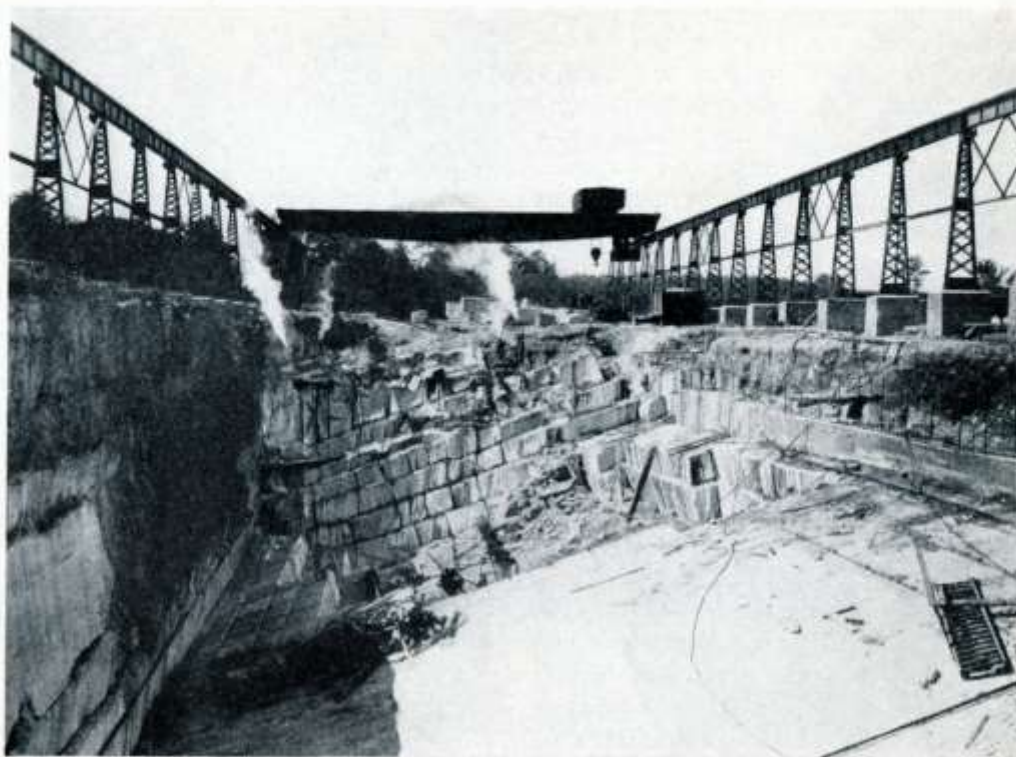
	Per cent
Calcium carbonate	96.34
Calcium sulphate	0.12

	Per cent
Magnesium carbonate	0.49
Silica.....	1.18
Iron oxide and alumina80
Undetermined, etc ..	1.07

The stone is of handsome appearance, being gray with green veins, and cream with green veins. There is also a layer producing green with a little pink.

Tests were made in a very systematic manner upon samples submitted for the purpose to Prof. H. M. Mackay of the department of Civil Engineering at McGill University, Montreal.

The compression tests were made in the Wicksteed machine upon two-inch cubes. The "Windsor Gray" samples withstood a pressure of over 21,000 pounds and the "Eureka" cream color stone, a pressure of nearly 23,000 pounds per



The Quarry and Traveling Crane.

square inch. This compares favorably with the better grades of granite. The absorption of moisture, as shown by a test upon roughly broken samples, is remarkably low. The specific gravity is 2.71, or 169.5 pounds per cubic foot.

These marbles are employed extensively for monumental purposes and for interior decoration, and more recently have been used for building exteriors, with highly satisfactory results.

The deposits lie in regular beds or layers, sloping at an angle of 45 degrees. The surface material or overburden is only a few feet in thickness, making stripping a simple problem. The views on this and the preceding pages show how the quarry is being developed. The property was originally purchased about 15 years ago, by the Phillipsburg Railway and Quarry Co. It was not until 1906, however, that work was begun, and in 1907 the present owners

acquired possession. Since that time, progress has been rapid.

QUARRY METHODS

The marble is quarried with nine Sullivan swivel-head channeling machines, operated by steam through swivel piping. Five of these are of the Class "6½" type, two Class "Z," with seven-inch engine cylinders, and two Class "VX," for light work. These channelers possess adjustments enabling them to cut at any desired angle, so as to enlarge the quarry floor by "tunneling," as illustrated in the left-hand wall, above, or to cut out ends and corners, illustrated by the left-hand machine on page 384. The wall cuts are put in at an angle of 70 degrees. These channelers cut ordinarily to a depth of six feet, and 63 square or channel feet are considered a fair day's work in this hard, dense marble. The blocks are

(photo caption) "The Quarry and Traveling Crane."

broken away from their beds by wedges, driven in holes bored in line with the dip by Sullivan Rock Drills, mounted on a quarry bar. A Sullivan "foot-hole" hammer drill is used for pinning down track and other miscellaneous purposes.

A novel method is in vogue for handling the blocks. Instead of the customary boom derricks, or cranes, a traveling electric crane is installed with a span of 100 feet and a lifting capacity of 30 tons. The runway is 460 feet long. This crane provides an unusually rapid and economical means of loading cars for the finishing plant and of moving the channelers and drills about the pit. A second crane is now being installed in front of the mill to handle the stone to and from the saws, and in the finishing departments.

From the quarry, the blocks go to the storage yard, which is under a traveling steam derrick, and connects with the mill and finishing works. The mill contains six gangs of saws and a steam-driven air compressor, which furnishes power for pneumatic tools of various kinds, and for pumping water from the artesian well, from which the quarry supply is drawn. In the finishing shop are two rubbing beds, two polishing machines, a planer, lathe, etc., while another building contains electric-driven Scotch circular saws.

The steam boiler plant provides 500 horse-power, for the channeling machines, drills, and for an engine and direct-connected generator, which drive the crane, gang and circular saws, and the machinery in the finishing room.

The plant also includes a blacksmith shop, supply house, stables, and a number of houses built for employees, who number about 140 at the present time.

The Missisquoi Marble Company owns a controlling interest in the Phillipsburg Railway, running from the quarry to Stanbridge, where it connects with the Central Vermont and with the Canadian Pacific System. A branch of the road links the property with its wharf on Lake Missisquoi, whence water communica-



Channeled wall in a quarry.

tion is uninterrupted to New York City, up the Erie Canal, or by the Richelieu River to St. Lawrence River ports.

Although the company has been in operation only two years, its product has been widely used. Among the larger buildings in which it figures as interior finish are the Windsor Hotel and the Emanuel Church in Montreal, the Royal Bank in Toronto, the Second National Bank in Cincinnati, St. Joseph's Hospital at Victoria, Bank of Commerce, Vancouver, the Post Offices at Vancouver, Regina and Edmonton, and the Hudson County Court House at Jersey City, N. J., Missisquoi marble was used for the exterior of the Workman Building in Montreal.

Mr. F. W. Richardson of Kingston, Ontario is the president of the company, and Mr. Henry Timmis of Montreal is managing director. Mr. Henry Brown is resident manager at Phillipsburg, Mr. S. N. Nickle, quarry superintendent, and Mr. S. G. Timmis, mill superintendent. The courtesies of these officers in furnishing information for this article are acknowledged with thanks.

(photo caption) "Channeled wall in a quarry."