

“Westerly Granite”

(Rhode Island)

Mine and Quarry

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The article begins:

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This article, which begins on the next page,
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A corner in the Smith Granite Co. Quarry showing the Sullivan "UH" Drill and Quarry Bar



Sullivan Rock Drills and Quarry Bars at work; a close view. Note the cranking rods on the drills

(photo captions) "A corner in the Smith Granite Co. Quarry showing the Sullivan 'UH' Drill and Quarry Bar."
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The Crumb Quarry, Westerly



The Klondike Quarry Westerly

“WESTERLY GRANITE”

RAY P. McGRATH*

One of the oldest and most widely known quarry districts in New England is that of Westerly, R. I., and vicinity, from which comes the stone commonly known as “Westerly Granite.” Westerly is situated at the extreme western edge of the state, on the Atlantic coast, five miles from Watch Hill. A few miles away is Bradford, formerly known as Niantic, where some of the quarries are situated.

Some of the Westerly quarries are on a ridge running east and west, about a mile northeast of the town. This ridge is 200 feet above sea level, and 160 feet above the city. Other quarries are a mile southeast of Westerly, 130 feet above the sea, and one lies a mile east of it, on the 100 foot level. Granite was quarried in this neighborhood as early as 1846, which was the date of opening of the first quarries, now owned by the Smith Granite Company and the New England Granite Co. The Crumb Quarry was opened in 1857. More recent openings are those of the Newall Quarry, 1883, and the Klondike quarry, 1897.

The Westerly granite lies in sheets from six inches to twenty feet in thickness, and is divided into three classes, known as Westerly “white statuary,”

“blue Westerly” and “red Westerly.” The white and blue are quartz monzonites, and are used almost entirely for monumental purposes, while the red, a reddish gray diotite granite, speckled with black, is used chiefly for construction work.

The “White Statuary” grade is a pinkish or buff medium gray color with slender feldspar grains not over 0.1 inch long, and thin grains of mica not over 0.15 inch in length. It is used for all sorts of monumental purposes, “inscription,” “polished,” and “statuary.” Owing to its fine grain it takes a very high polish, and at the same time is exceedingly strong. At the United States Arsenal at Watertown, Mass., in 1907, a compression test made on two inch cubes of this granite showed a resistance of 39,750 pounds per square inch.

“Blue Westerly” is about 50 per cent less fine in texture than the white, but lends itself well to monuments and sculptural work. It does not take so high a polish as the white, but the contrast of shades is equally good.

A test on Westerly blue and red granites shows an ultimate compression strength of 31,970 pounds per square inch for the blue and 28,540 for the red.

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The old way of splitting granite at Westerly



The new way, Sullivan Hammer Drills

OPERATING COMPANIES

Six companies are actually engaged in quarrying in Westerly at the present time. The New England Granite Co. operates a "white statuary" quarry, a "blue Westerly" quarry, and a "red Westerly" quarry. The Smith Granite Company also produces all three grades of stone. Its white and blue quarries adjoin those of the New England Granite Company, being separated only by a heading. The Calder and Carnie Quarry, operated by Henry Smalley, of Quincy, produces a fine grade of Westerly pink statuary granite, which is one variety of "white statuary."

The Gourlay Granite Works, of Westerly, operates the Klondike Quarry at Bradford, already referred to. This pit produces a very fine grade of blue Westerly. It is shown in the illustration on page 691. The Newall Quarry Company

produces Westerly blue granite. The pit of the Crumb Quarry Company, one of the oldest quarries at Westerly, already mentioned, is a blue Westerly quarry.

QUARRYING METHODS

As already mentioned, the granite at Westerly lies in sheets, crossed by wide spaced steep joints. The stone is very costly, so that great care is used in getting it out. The sheets are frequently channeled in two directions, and very little dynamite is employed. Quarrying methods and finishing or cutting shed methods are similar to those employed in other New England quarry districts, notably in Barre, Vermont, concerning which an article appeared in MINE AND QUARRY for January, 1910.

Every quarry and cutting plant has its own air compressor, and compressed air is used in every way known to granite

men. All the quarries employ Sullivan rock drills, and hammer drills, and Sullivan plug drills are used at all of the finishing plants. There are a number of Sullivan air compressors at the various operations, including a two stage straight line machine at the Crumb quarry, driven by steam; a duplex steam two stage compressor at the Newall Quarry Company's plant, a cross compound, belt driven class "WJ" compressor, at the plant of the Smith Granite Company, and smaller belt driven machines in several other cutting sheds. The photographs on page 690 show Sullivan drills and quarry bars in operation.

The Sullivan "UH" drill, with $3\frac{5}{8}$ -inch cylinder, mounted on a Sullivan U-45 quarry bar, with compressed air (at 100 pounds pressure) as motive fluid, will channel on the average, about 12 square feet per day of eight hours, including broaching out the cores between the holes.

Sullivan "UB" drills ($2\frac{1}{2}$ -inch cylinder), mounted on tripods are used extensively for Lewis-holing and deep-holing, and drill about 55 feet per eight-hour day.

Sullivan plug drills, class "DA-15," weighing 22 pounds, will drill three $3\frac{1}{4}$ -inch holes (from $\frac{5}{8}$ to $\frac{3}{4}$ of an inch in diameter) per minute.

The photographs show a practice common to most New England quarries, namely, the use of a rod, attached to the crank handle, for feeding the machine. When the limit of travel is reached, the runner climbs on the drill or quarry bar to crank it up again by hand.

VALUE OF PRODUCT

The value of Westerly granite produced in 1911, reached the total of \$790,056.00, the largest in the history of the business. Prior to 1888, all of the granite quarried in and about Westerly was cut or finished in local finishing plants. With the idea of bringing business to Westerly, an agreement among the quarry owners provided that no rough stock should be shipped to outside manufacturers. The

natural result of this was to cause a decrease in the output of such monumental stone. At one time the number of cutters or finishers was double the number of quarrymen, but at present there are about 500 men employed in the quarries and not more than half that number in the cutting and finishing plants.

The following figures show the production in 1902, 1906, and 1911, and the proportion of different kinds of stock produced. The figures for 1902 are about the same as those for 1888:

| | 1902 | 1906 |
|------------------------|---------------------|---------------------|
| Rough building..... | \$ 4,478.00 | \$ 160.00 |
| Dressed building..... | 80,967.00 | 184,614.00 |
| Rough monumental.... | 111,502.00 | 159,525.00 |
| Dressed monumental.... | 438,472.00 | 171,700.00 |
| Paving blocks..... | 13,884.00 | 28,332.00 |
| | <u>\$649,303.00</u> | <u>\$544,331.00</u> |
| | | 1911 |
| Rough building..... | | \$ 17,576.00 |
| Dressed building..... | | 287,458.00 |
| Rough monumental.... | | 184,634.00 |
| Dressed monumental.... | | 186,095.00 |
| Paving blocks..... | | 114,293.00 |
| | | <u>\$790,056.00</u> |

It will be noted that while there has been a decrease in dressed monumental stone, rough monumental stone and particularly dressed building stock have increased greatly. The demand for Westerly granite has grown steadily and the stock is now being shipped all over the United States. The figures given above show the great increase in the last ten years, in the production of paving blocks, formerly an insignificant portion of the output, but now ranking in value not far behind that of monumental stone.

The Smith Granite Co., New England Granite Co. and Jos. Newall & Co., all have large cutting plants in Westerly, where the rough stock is finished into monuments, mausoleums, vaults, etc. There are also a half a dozen smaller companies that do the same work.

LABOR

The labor in the quarries was formerly chiefly Scotch, or Scotch-American; but recent years have seen a large increase in the Italian element. The eight-hour day



Forty pounds of presidential turkey, and
Horace Vose

is the rule. Very little trouble has been experienced between the workmen and the operators as to matters of employment. In 1892, at the time of the general strike throughout the New England quarries, there was no outbreak of violence at Westerly, nor was there any damage to the property of the quarry owners. The workmen's committee and the owner's committee met almost daily on an amicable basis during the entire nine months of the strike, and finally settled their differences in a thoroughly intelligent and sane manner.

It is said that Westerly is famous for two things — its granite and its turkeys. The picture on this page shows Mr. Horace Vose and a 40-pound turkey intended for the Thanksgiving table of President William H. Taft. This industry is not as old as the stone industry, but Mr. Vose has been supplying the President's table at Thanksgiving and Christmas since the administration of President Grant.