

“The Sandstone Quarries of Ohio”

By W. Frank M’Clure

Scientific American, New York

Vol. LXXXVIII, No. 7, February 14, 1903, pp. 113-114

The article begins:

“The order of the three sandstone-producing States whose annual production exceeds in value \$1,000,000 has changed within the past year (1902), according to figures recently compiled by the United States Geological Survey. Prior to this time New York held second place, with Pennsylvania third, but now Pennsylvania and New York have changed places. Ohio, the other of the three great sandstone States, is not only still in the lead, but the value of her product has shown a noticeable increase....”

“Ohio also holds an interesting place among the stone-producing territories of the world in that here are said to be located the largest sandstone quarries extant and from these quarries comes the bulk of all the whetstones and grindstones of the country....”

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

<http://quarriesandbeyond.org/>

Peggy B. Perazzo
Email: pbperazzo@comcast.net
January 2017

SCIENTIFIC AMERICAN

(Entered at the Post Office of New York, N. Y., as Second Class Matter. Copyright, 1903, by Munn & Co.)

Vol. LXXXVIII.—No. 7.
ESTABLISHED 1845.

NEW YORK, FEBRUARY 14, 1903.

5 CENTS A COPY
\$3.00 A YEAR.

THE SANDSTONE QUARRIES OF OHIO.

BY W. FRANK M'CLURE.

The order of the three sandstone-producing States whose annual production exceeds in value \$1,000,000 has changed within the past year, according to figures recently compiled by the United States Geological Survey. Prior to this time New York held second place, with Pennsylvania third, but now Pennsylvania and New York have changed places. Ohio, the other of the three great sandstone States, is not only still in the lead, but the value of her product has shown a noticeable increase. Ohio's total production during the last

year was valued at \$2,576,723, exceeding that of Pennsylvania by \$513,641 and that of New York by \$1,245,396 and her increase over the preceding year is represented by \$343,127.

Ohio also holds an interesting place among the stone-producing territories of the world in that here are said to be located the largest sandstone quarries extant and from these quarries comes the bulk of all the whetstones and grindstones of the country. The value

of her grindstone and whetstone product last year was \$577,543, It is this class of Ohio's stone product too that is more in demand than her rough stone.

Of Ohio's great quarries the one at North Amherst is typical of the sandstone mining. The accompanying photographs are illustrative of a North Amherst quarry, and the claim has been made that this one is the largest. The average height of its walls is a little less than 125 feet, but in places a depth of 175 feet is attained. The circumference of this pit exceeds a mile and a half. To one who has never seen a quarry of huge dimensions a glance down from the edge of the

(Article continued on the next page.)

pit, or upward from a central point at the bottom, is a novelty, to say the least. The layers of stone are so distinct that they may be distinguished from one side of the quarry to the other. Another interesting feature is found in the different colors represented by the various strata. There are different qualities of sandstone to be found in the same pit; the kind used for whetstones or grindstones represents one stratum, while that used for building purposes represents another. Bluestone is a kind of sandstone; it is used for flagging and curbing. Sandstone, it will be recalled, is but sand more or less firmly united.

Like in the case of the coal mine many years are usually required to exhaust the supply. At North Amherst it is said to be more than thirty years since the great development of the quarries there was begun. Few rural sections witness the steady employment of as many men. A quarry of the size of the one illustrated often employs as many as 500. The operations in which these men engage are not in the main intricate, and yet, as in nearly all lines of industry, some skill is required in the different departments.

In the removal of sandstone the first operation consists in bringing to bear an even pressure at the bottom of a block of stone simultaneously with the work of piercing the upper surface in numerous places. Steam drills are used to pierce the upper surface, while the pressure at the bottom is maintained by means of wedges. The row of drill holes from the surface meets the wedge openings underneath. The second operation consists of sawing vertically from hole to hole. The saw used for this purpose is operated by steam power. When a block of the desired size is severed by means of the saws, it is hoisted by derricks.

About the tops of the cliffs at the surface of the ground the further work of preparing sandstone for the market progresses. It is here that the grindstones assume shape. The stone to be used for this purpose is transformed from its square shape to a more circular form. It is next placed upon a machine which causes it to revolve rapidly while the workmen ply their crowbars in perfecting its shape. The saws used in cutting the rough stones of large dimensions into smaller ones of various sizes are simply long strips of iron which swing back and forth in gangs, thus wearing their

way through the piles of stone in the course of time. A mixture of sand and water placed about the saw blades assists them in the operation of cutting. The gangs of saws are operated by machinery.

In winter the quarrymen clear the quarry of all refuse material such as broken stone and quantities of sand. In the work of removing the small bits of stone and sand a locomotive hauling a train of flat cars will be found at many of the quarries.

With reference to the sandstone quarries of the next State in rank to Ohio, Pennsylvania's yield has been increased largely in the line of building stone. The value of this stone alone last year showed an increase over the preceding year of \$1,131,988. The bluestone localities also showed an increase in value of \$44,903. Notable also in connection with Pennsylvania's stone quarries has been the progress made toward the consolidation of many of the sandstone and limestone interests. Both railroads and quarrymen are interested in this move.

In New York the principal sandstone region is in Orleans County. The belt is said to be a narrow one and not much more than 25 miles in length. The stone from this section is largely used for building purposes. From these quarries also come large quantities of stone for paving. Another important stone belt is near Potsdam, St. Lawrence County. Although the production of the State for last year as a whole showed a decrease, plans are on foot in some sections for enlarging the handling facilities. Comparatively recent has been the consolidation under one head of interests which in the past have been owned by many, and this, too, will result in quarrying upon a larger scale.



Sandstone Layers in an Ohio Quarry.

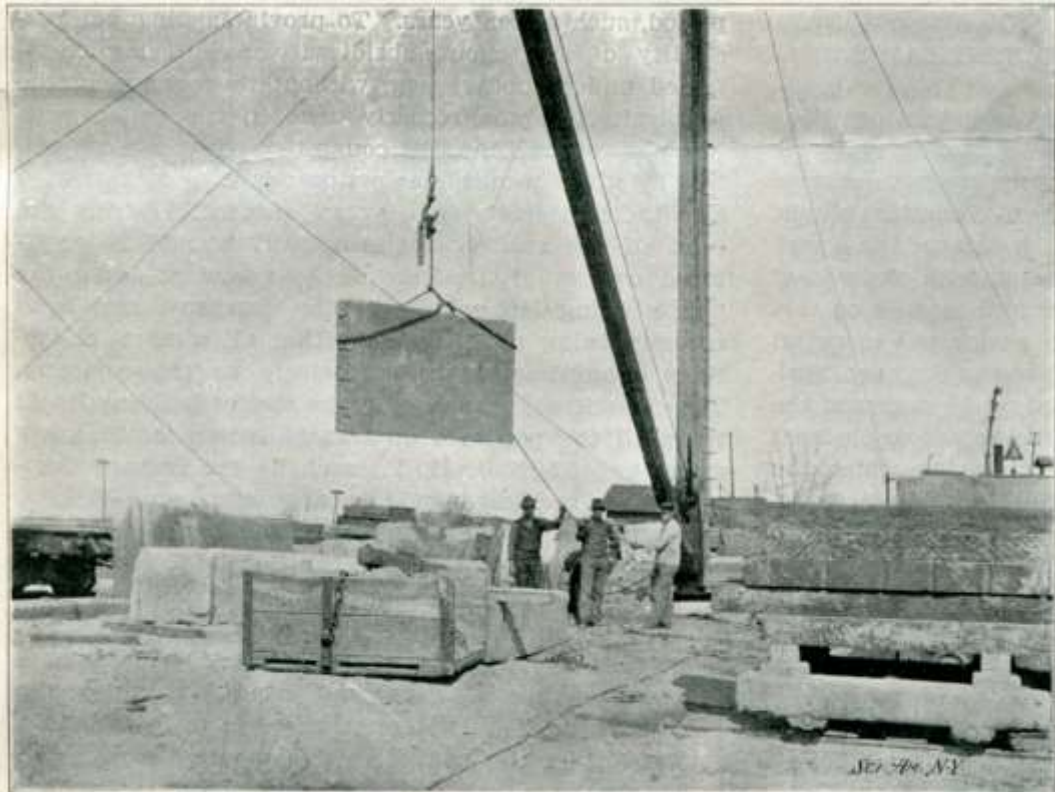
(photo caption) "Sandstone Layers in an Ohio Quarry."

(Photos continue on the next page.)



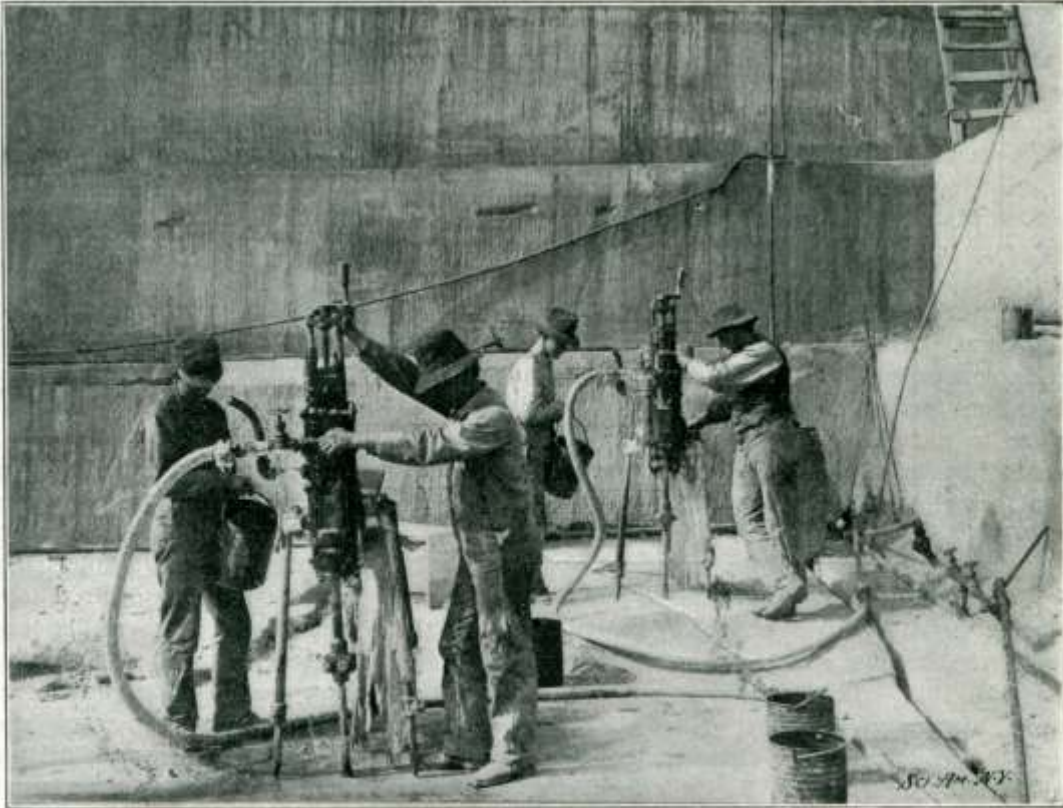
Sawing Sandstone by Machinery.

(photo caption above) "Sawing Sandstone by Machinery."



Lifting a Sandstone Block.

(photo caption above) "Lifting a Sandstone Block."



Drilling the Sandstone.

(photo caption) "Drilling the Sandstone."