

THE MARBLE QUARRIES OF CARRARA.

BY DAY ALLEN WILLEY.

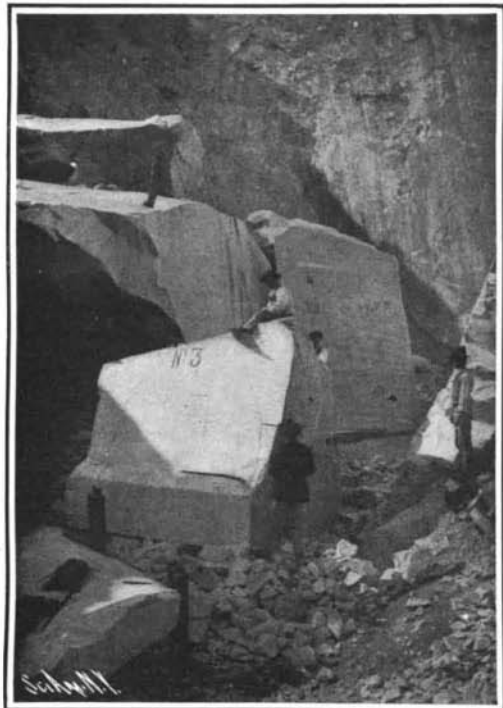
Few, if any, industries in the world have a greater percentage of waste than marble quarrying as it is done in Italy, yet the famous Carrara deposits have been worked over 2,000 years, and according to the statements of experts who have examined the mountains of marble in this locality, the quality of high-grade material yet to be excavated is so great that Carrara promises to supply the present rate of demand for its marbles for centuries to come.

When Nature created this section of the Apuan

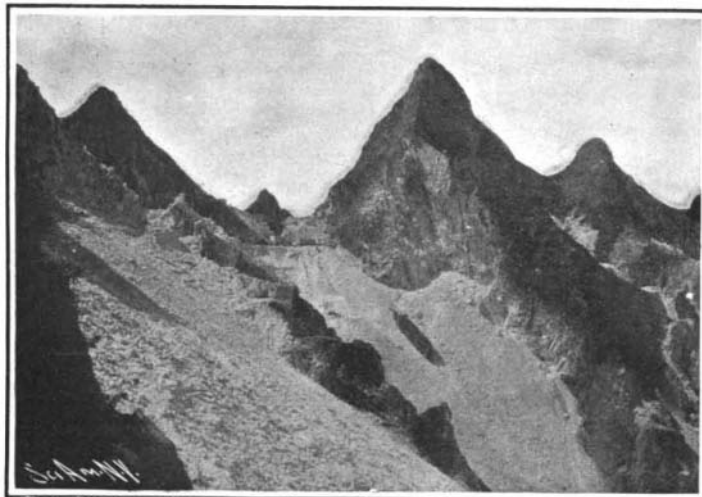
son why the extent of the resource has thus far been merely guessed at, so to speak, is because so much of it is hidden by great masses of debris—the waste from workings that date back many centuries. The quarrymen of olden times opened the beds which were most convenient on the mountain slope, and much of the refuse fell into valleys. Some of these piles are hundreds of feet in thickness, and the labor of removing them would require so much time and expense, that it would not be profitable until the formation now so accessible has been taken out, and the marble advances in price.

well known, a large amount is sent to the United States, in blocks in the rough or in the finished form.

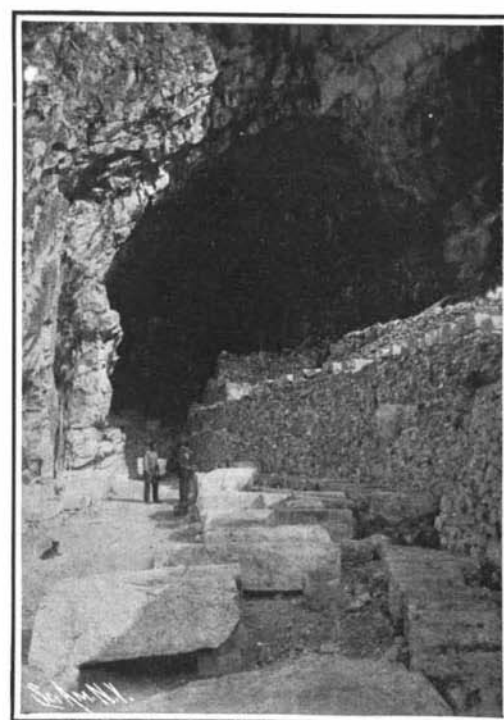
These deposits are quite accessible, especially since the principal workings are now reached by a railway which connects them with the principal shipping point—the little seaport of Avenza on the Gulf of Liguria. Avenza is really only three miles from the town of Carrara itself, but the quarries are distributed over an area which extends several miles beyond its borders. The nearest large city is Pisa in North Italy, thirty-two miles distant. Most of the marble at it comes from the quarries to Avenza is placed on



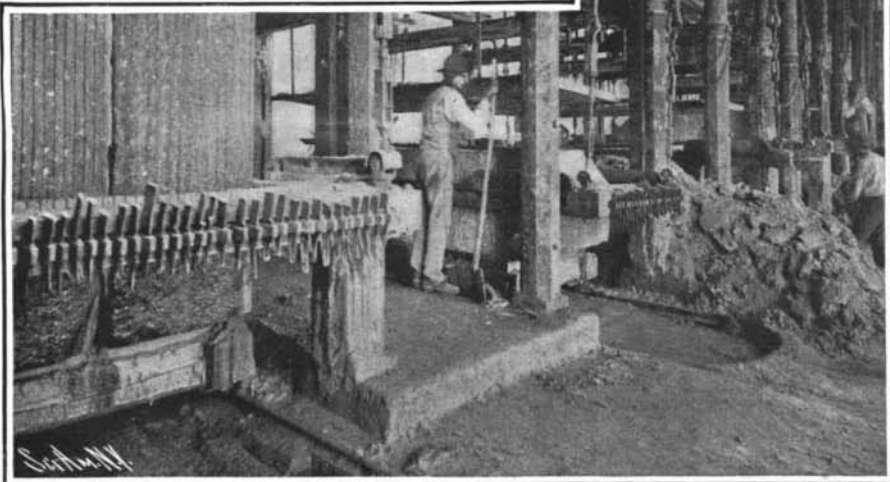
Block Marked for Cutting.



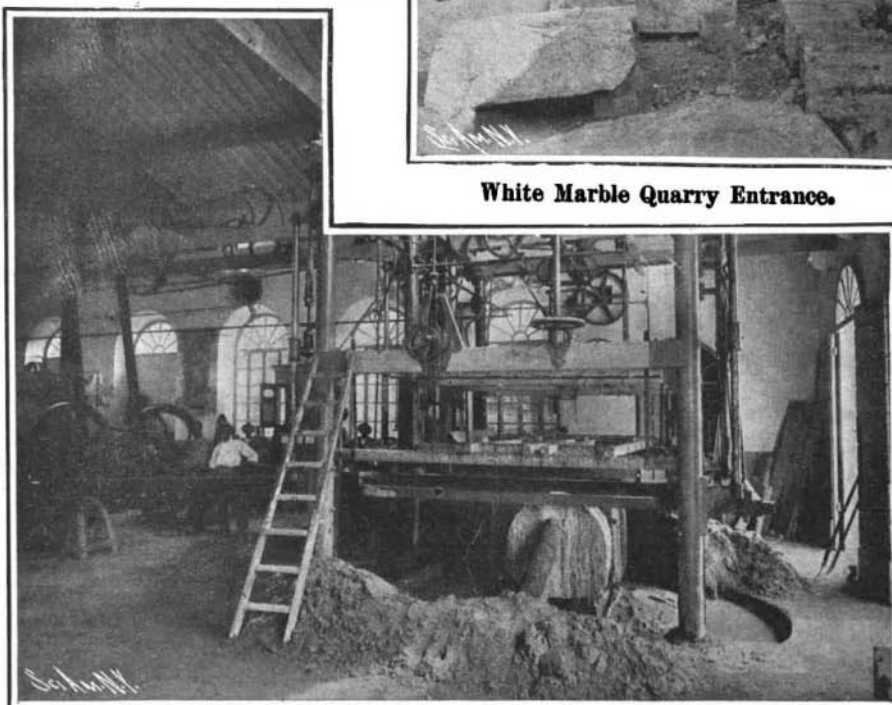
Marble Crag at Carrara



White Marble Quarry Entrance.



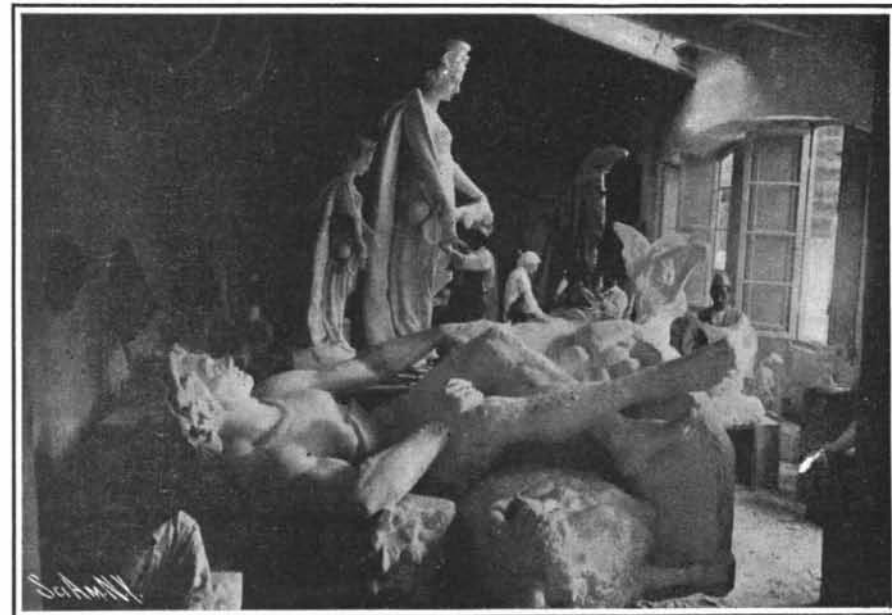
Slab Cutting Saws Operated by Steam and Water Power.



Steam Power Marble Planers.



Where Carrara Sculptors Learn Their Art.



Making the Gigantic Statues.

Photographs by Brocherel

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Alps, she formed a storehouse of marble that is truly marvelous in extent, for beds of the finest quality of the Carrara grade are known to exist as high as 5,500 feet above the level of the sea. The exact depth is unknown, as the deposits have as yet not been thoroughly investigated by the use of machinery. Test borings which have been made, however, show that a considerable portion of the mountain formation in the commune of Massa, in which Carrara lies, seems to be entirely of marble, and it is believed that in places the formation extends fully 500 feet downward, with not even a layer or thrust of other stone. One rea-

The grain of the marble quarried at the present time is said to be fully as fine as that secured a century ago, as is shown by comparing the blocks with the waste taken from the older workings. It still has a greater reputation among sculptors than the Pentelic, Hymetian, or even the finest Parian, both by reason of its grain and the fact that it can be fashioned with such ease into statuary and other forms. In recent years the quarries of Carrara have had an annual aggregate output of about 200,000 tons. They supply the bulk of the marble used in Italy and Europe to-day for sculpture and other ornamental work, while, as is

sailing vessels and small steamers and carried to Genoa and Leghorn, where there are extensive marble works. These cities are also the principal places for shipping it to other parts of Europe as well as America. At the present time about six hundred quarries in all are in actual operation. Of these, more than half are in Carrara or its vicinity, about fifty are in the city of Massa, and the rest scattered principally in the commune of Massa. They give employment to about 6,000 men and boys, and are the sole support of a population of nearly 75,000 in this part of Italy.

As in other old industries, tedious and wasteful

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Miners Making the Electrical Connections for Blasting a Monster Block of Carrara Marble.

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