by bathing, to convert it into Bath stone, although were the Bath stone a sandstone, instead of an oolitic formation, this name would do as well as any. The salt, or chloride of sodium, deposited throughout the interstices, is sought out and washed away, in brine, by the water, and were it not that a portion of undecomposed chloride of calcium was also washed out, this brine might be profitably evaporated for common salt. Now this searching out of the salt by the water would appear to prove that the stone was perfectly permeable, but, by one of those paradoxes with which chemistry abounds, the stone, when once freed from salt, is almost impermeable. The action is one which, if it can be explained at all, can only be explained as one of the phenomena of dialysis, as experimentally investigated by Professor Graham. There is no doubt whatever that salt has been deposited everywhere throughout the stone, no doubt that it is afterward completely washed out, and yet the stone as effectually resists the passage of water afterward as if it were granite or marble.

It is not necessary to describe the variety of objects that may be made in the new stone. It is practically a fictile manufacture, although not indurated by fire, and, unlike fictile goods, having no shrinkage or alteration of colour in the making. Whatever the required size of the finished stone, it is molded exactly to that size, with no allowance as in molding fire-clay goods or in pattern making for castings in iron. The heaviest blocks for works of stability, and the most elaborately ornamented capitals, tracery, or copies of statuary may be made with almost equal facility. For any purpose for which natural stone has ever been used for construction or architectural ornament, the artificial stone will fitly take its place. Mr. Fowler has used it extensively in the stations of the Metropolitan Railway; Messrs. Lucas Brothers have used it with success in various works; several manufacturers at Ipswich and elsewhere have the bed stones of their steam engines, steam hammers, oil mills, etc., formed of the new stone. Mr. Ransome has molded a large number of Ionic capitals for the New Zealand post office, and still more richly embellished capitals, modeled from those of the Erectheum at Athens, for public buildings at Calcutta, besides a great amount of decorative work for English architects."

It appears that the manufacture of this stone has also been commenced in the United States, under Ransome's patent. A recent number of the *Scientific American* says:—

"Through the kindness of Hon. David Naar, President of the "Ransome Patent Stone Co. of New Jersey," we have had an opportunity of witnessing the process ourselves. We confess ourselves to have been unexpectedly pleased not only with the simplicity of the process, but with the facilities which the company have for the manufacture of the stone, and the beautiful results which they accomplish.

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The stone, as compared with the sandstones in use, is considerably cheaper, and when capitals or ornamental moldings are required, the cost is not more than one eighth. Its weight is about 140 pounds to the cubic foot. The color is about the same as the Portland stone, depending of course upon the color of the sand used. It is easily colored, however, to any tint required. It has been subjected to the severest tests as to its durability, and so far shows greater resisting and durable qualities than the sandstones in use.

It is being made not only in Europe but in several parts of this country, and is beginning to be used for building purposes, and the true test, that of time and the weather is being applied to it.

We cannot predict that it will endure as long as the Pyramids, but its composition is such, and it so well withstands the tests to which it has been subjected, as to give us good reason to hope and believe that it is equal if not superior in durable qualities to most of the building stone in use.

Those who have been foremost in undertaking the manufacture of the stone in this country deserve success, and we believe the article will fill a want long experienced by builders, and we hope they will not let prejudice deter them from giving it a fair trial. It is not remarkable that such a discovery has been made; the wonder is that it has not been made before. Our exchanges from England mention the Ransome process as a practical success for nearly every purpose to which stone is used, even to the manufacture of grindstones."

On the application of this manufacture to artificial grindstones, and the results, we quote from a more recent number of *Engineering*:—

"There seems little doubt that the use of natural stones for grinding purposes will eventually become the exception instead of the rule. Among other firms, Messrs. Bryan Donkin and Co., the well-known engineers, of Bermondsey, have tried experiments which very decisively prove the advantages of the artificial over the natural stones. Messrs. Donkin were first supplied with a pair of Mr. Ransome's artificial grindstones in December last; and early in the present year they carefully tested these stones and compared their efficiency with some Newcastle stones at their works. Both the natural and artificial stones were mounted in pairs on Muir's plan—a system in which the peripheries of the two stones of each pair rub slightly against each other, with a view of causing them to maintain an even surface—and the two sets of stones were tried under precisely the same circumstances, except that the Newcastle stones had a surface speed more than 20 per cent greater than that of the others.

The trials were made as follows: A bar of steel, ¾ in. in diameter, was placed in an iron tube containing a spiral spring, and the combination was then arranged so that the end of the bar projecting from the one end of the tube barely touched one of the artificial stones, while the other end rested against a block of wood fixed to the grindstone frame. A piece of wood of known thickness was then introduced between the end of the fixed block, and the spiral spring, being thus compressed, forced the piece of steel against the grindstone. The same bar of steel was afterward applied in the same way and under precisely the same pressure, to the Newcastle stone, and the times occupied in both cases in grinding away a certain weight of steel from the bar were accurately noted.