

**“Stone Pavements”**  
(on Broadway in New York City, New York)

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“A pavement answering all possible requirements being a total impossibility, the main consideration comes to be, the sort of travel on the road. The Romans, looking only to durability, used heavy granite or basalt blocks, and many such pavements, constructed two thousand years ago, are still in good condition, though they are not what is wanted now. Durability may, to a certain extent, be sacrificed for more desirable qualities. It was a great mistake to lay the Russ pavement in Broadway; it is nothing but an imitation of the ancient Roman streets, and heavy, uninterrupted travel makes such pavements so smooth that it is cruelty to drive a horse over them. Where the travel is not so heavy, as is the case in the streets of Rome, the atmospheric influences prevent this polishing of the surface, and the pavement is not so objectionable. The common cobble-stone pavement, when the stones are not too large, gives a better foot-hold to the horses, and is, when well laid, very durable for light travel; but as the stones all lie with the most pointed part downward, they have a tendency to sink under heavy pressure; and the points being unequal in length and differing in degree of tapering, they will sink unequally. Thus hollows will be formed; and when once a hollow exists, preventing the rainwater from flowing off freely, the stagnant puddles will soften the soil between and under the stones, and the stones will sink deeper still, squeezing the underlying mud to the surface. The deeper the hollow, the greater the force with which the wheel strikes in falling; and all these influences conspiring, the road soon becomes impassable. Many cobble-stone roads in our large cities illustrate the truth of these remarks.

“The Belgian pavement is a great improvement, both on the old cobble-stone and on Russ pavements, possessing the advantages of both, and the defects of neither. It consists of nearly cubical blocks as large as medium sized cobble-stones, made from basalt rock, which fortunately has the peculiar property of splitting naturally in planes at right angles to each other. These blocks, being flat on their lower surfaces, do not penetrate the soil like the round pointed cobble-stones; and their small size gives a stronger hold for the horses’ feet. To obviate the objection to the Russ pavement, some parts of Broadway were paved with such blocks, grooved on the surface, which did well enough for a while, and it was attempted to groove the blocks laid down a few years previously in other portions of the thoroughfare. The attempt led to a remarkable discovery. The surface of these stones had, by constant rubbing with iron horse-shoes and wheel-tires, aided by atmospheric action, undergone such a physical (or chemical) change that the hardest steel tools could not cut the grooves, and the effort had to be abandoned. It was found too, by experience, that these grooves were soon worn smooth at their edges; and now the whole of the Russ pavement in Broadway is being broken up, and the blocks split into smaller cubical pieces, to be used in other parts of the city as Belgian pavement.

“The stones for these pavements are obtained across the Hudson, where the range of basaltic rocks overlaying the new red sandstone, and forming the eastern boundary of the State of New Jersey, contains many quarries. The Palisades, one of the natural wonders of the neighborhood, is a perpendicular range of basalt rocks, from three hundred to six hundred feet high, forming the western bank of our beautiful river, for a distance of some twenty miles. They are, in fact, a

series of quarries exposed by nature, and the quarrying is going on so extensively there, that some papers have expressed the fear that these picturesque walls will be destroyed; but a simple calculation shows the mass of basalt to be so immense that it would require several thousand years of constant labor at the present rate to make any great change in the outline. There is paving-stone enough there for all the streets of New-York, Brooklyn, Williamsburg, Jersey City, Hoboken, Hudson City, in short of the future great metropolis, covering several hundred square miles, and yet leave enough of the Palisades to be about as much a natural curiosity as they are now.

“Thousands of dollars have been spent on experimental pavements in Broadway, the majority of which were utterly inadequate to the heavy wear and tear consequent to the immense travel in this street. At the time that the Russ pavement seemed to be the best, it was attempted to make it still more enduring, and in some portions of Broadway two pavements were laid, one on top of the other, the lower consisting of large irregular angular pieces of rock laid in the earth. At another part of Broadway, large flagstones were laid underneath, earth on these, and then the large blocks. Now, however, the Russ pavement has been entirely abandoned, and the last trace of it will soon disappear.

“The pavement now being laid over the whole length of Broadway is a kind of compromise between the Belgian and Russ pavements. The use of basalt has been abandoned, and a very hard kind of granite substituted, found higher up on the shore of the Hudson. This granite is cut in flat blocks, which are set edgewise, with their longest dimension across the line of travel, so as to present many straight seams for a foothold. The width across the top of each block is four and a half inches, the height ten inches, and the length from ten to twelve inches or more. The pavement when laid looks much like a brick wall, composed of very large gray bricks. This pavement appears thus far to be the thing wanted; most assuredly it is better than any stone pavement tried before. In the same way are laid the pavements of hard yellow brick, used in some parts of Holland and Germany. These bricks are not laid on their flat surface, in the Philadelphia style, but on the edge, their greatest length across the line of travel; and such roads stand a much heavier travel than one would suppose, lasting about half a century. As the granite of the new Broadway pavement is harder than any brick, it ought to be very durable as well as convenient; but time may develop some compensating disadvantage. No street in the world, probably, puts a pavement to so severe a test as Broadway.”

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**For more information on paving stones and other subjects covered in the above article see:**

“Cobble-Stones,” on Wikipedia – <http://en.wikipedia.org/wiki/Cobblestones>

“Sett (paving)” known in some places as Belgian Block, on Wikipedia  
[http://en.wikipedia.org/wiki/Sett\\_%28paving%29](http://en.wikipedia.org/wiki/Sett_%28paving%29)

“Hoofbeats And Modern Streets: How Pavement Tells Of The Past Brick, Granite, Even Wood: A City Consortium Is Seeking Prime Examples Of Byways From The Pre-asphalt Era,” by Thomas Hine, Inquirer Architecture Critic, philly.com, August 16, 1992.  
[http://articles.philly.com/1992-08-16/news/25991489\\_1\\_historic-preservation-ordinance-streets-department-historic-districts](http://articles.philly.com/1992-08-16/news/25991489_1_historic-preservation-ordinance-streets-department-historic-districts)

“Excavating Cobblestones: Obsolescence and the Reinterpretation of Stones,” by Mark Treskon, Objects, Spring 2006.  
<http://www.nyu.edu/classes/bkg/objectsblog/archives/cobblestones.pdf>

“The Palisades (Hudson River),” Wikipedia  
[https://en.wikipedia.org/wiki/The\\_Palisades\\_%28Hudson\\_River%29](https://en.wikipedia.org/wiki/The_Palisades_%28Hudson_River%29)