gradually increases to about 60 feet, and then diminishes again towards the New York shore. These facts would appear to warrant the conclusion that any foundations which may be sunk inside of the pier lines, leaving, therefore, the tidal flow entirely unobstructed, will be safe against underwashing or undermining from the river side. If, for instance, the Brooklyn foundation was formed by a large timber platform of a depth of 20 feet, its top 3 feet and its bottom 23 feet below low tide, this would require an excavation of 12 feet below the present river bed at the pier line. Now, I am of the opinion that at such a depth, the foundation, if further protected by a promiscuous outside piling, cut off say 5 feet above the river bottom, and holding a heavy body of large loose rock, thrown in between the piles as a Rip Rap, will forever be safe against undermining on the river side. Now, this danger being guarded against, all that remains to be done is to provide against vertical settling.

There is little expectation that rock will be found at a reasonable depth, so as to be available as a foundation. And yet an examination of the map of the East River strongly indicates, that the Brooklyn shore near the Fulton Ferry, where the east tower will be located, must be composed of a material which has successfully resisted the tidal current for centuries. I have now before me the geological map of Long Island and New York, published by authority of the State. But any other map shows equally well how the tidal river,