crete to confine the portion remaining within; a task of no small difficulty, owing to the influx of water and sand.

Any other small irregularities will be fully equalized by the great timber platform above.

**BED-ROCK.**

The first spurs of bed-rock were encountered at a depth of seventy-five feet, under the shoe on the water-side. It would seem that the caisson had been scraping along a vertical wall of rock for the previous five feet at that spot.

The rock is the ordinary Gneiss found on Manhattan Island with a dip almost vertical. No part of its surface shows the rounding action of water or ice. On the contrary, the outcrop is in the form of sharp thin ridges, with steep vertical sides occurring in parallel ranges.

On such a bottom no sliding can ever take place, no matter what the average slope might be. At 78 feet the outcrop was struck in a number of places and blasted down a short distance below the edge. A slight covering of soil gave the necessary amount of compressible material above these rocky points. Nearly all of them occurred under the edge on the water-side, a favorable circumstance, since the resultant of pressure is in that direction.

No fresh water was found on the rock, but salt water entered upon a reduction of air pressure.

**EFFECTS OF THE COMPRESSED AIR ON THE MEN.**

These were not so serious as first anticipated. The few cases of death that occurred could in but two instances be charged to the direct effects of pressure.

As the latter increased, the working hours below were gradually reduced from four hours to two hours, twice a day, at thirty-five pounds. It is true that scarcely any man escaped without being somewhat affected by intense pain in his limbs or bones or by a temporary paralysis of arms and