

at or near its present northern end. These gravels coming to repose on the terminal slope under water formed successive inclined stratified additions to the deposit in this direction. The base of the deposit toward the southern end is sand and fine silt or rock-flour almost clayey in consistency. This finer material represents that which was washed off to the bottom at the foot of the growing embankment this being pushed out into the open water in that direction. These materials formed horizontal beds in front of the growing deltalike bar and were successively encroached on by the foot of each layer of inclined gravel and sand deposited on the growing slope of the bar. In this way origi-

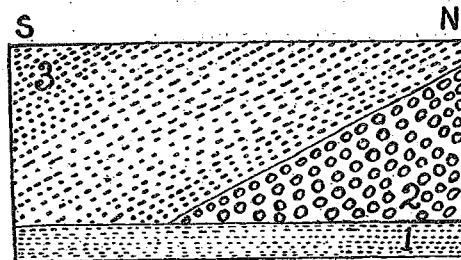


Fig 10. Section at southern end of Jones Point terrace in July 1900, showing at base horizontal beds of (1) sand, and rock-flour, overlain by southward inclined beds (dip 30°), of (2) coarse gravel with cobbles up to 6 inches, and (3) fine gravel up to 3 inches.

nated the unconformity at the base of the inclined beds. There was no erosion of the horizontal beds for they were in the deeper water with strong currents moving only near the surface.

The occurrence of coarse cobbles ranging up to 6 inches in diameter in these foreset beds nearly half a mile from the northern end of the embankment is evidence of strong currents running to the southward and on the concave shore of the present Hudson river where under existing conditions or with a higher water level it is difficult to conceive of a current of the river working at the level of this deposit being so directed as to produce the observed result. There appear to be but two possibilities concerning the circumstances of the formation of this terrace: either it was built by a strong southward flowing shore current during a time when the water level in this part of the valley stood about 100 feet higher than now or it was constructed in a glacial side channel at a time when the glacier filled the gorge in the Highlands and protruded southward as glaciers