time also referred the deposit to a nonglacial origin[1] but supposed it to be Prepleistocene because it was overlain about its base by the outwash plain of the Wisconsin moraines, and because I then saw no feldspathic pebbles which are so characteristic of glacially derived materials in this field. In revisiting the ridge with Messrs Fuller and Veatch in the spring of 1903, they pointed out a considerable percentage of compound gravels in the deposit allying it with the Pleistocene deposits, in referring it to which I fully concur with them. These authors regard the deposit as an outlier of the Manhasset,[2] a deposit of glacial origin containing much locally derived material and as I think all are agreed, deposited during a time of submergence. The deposit at Far Rockaway therefore has no bearing on the question of the attitude of the land during the late Wisconsin ice retreat; and if the Far Rockaway gravels and the Manhasset formation are the equivalent of the Cape May formation this last named with its signs of depression of the land in southern New Jersey must be contemporaneous not with the Wisconsin ice epoch but probably with the next preceding glacial advance or the Iowan.

It may be urged that if, at any time during the retreat of the ice, the land was raised several hundred (say 700) feet above sea level south of the Highlands, the Hudson gorge should there now be deeper, in the manner of the Norwegian fiord. In the absence of borings in the bed of the Hudson river we are in ignorance of the depth to bed rock in the deepest part of the buried channel. However deep the filling may be, undoubtedly a great amount of filling has been washed in from the clayey banks and the upper Hudson gorge which has been reexcavated in its clay filling. Since the deposition of the Albany clays something like 8 cubic miles of clay and coarser sediment have been removed from the old gorge between say Kingston and Fort Edward. If we suppose this sediment to have found its way to the bottom of the river between Peekskill and the Narrows, a distance of 65 miles, this supply of silt and clay alone would fill

[1] Woodworth, J. B. N. Y. State Mus. Bul. 48. 1901. p.651, also map pl. 1.

[2] Fuller, M. L. & Veatch, A. C. Results of the Resurvey of Long Island, New York. Science. 1903. 18:730.