

Unglaciated area of Staten Island. Two very distant small tracts within the State of New York lay beyond the reach of the last ice advance; one in the extreme southwestern part of the State, the other an area about half a square mile in extent at Garretsons and Grant City on the southeastern face of the serpentine hill of Staten Island. On a sloping shelf ranging from 120 to about 250 feet above the sea lies an ancient pre-Wisconsin surface of weathered products surrounded on the northwest by the terminal moraine and on the southeast in the low grounds by the outwash gravels of the Wisconsin ice sheet. The iron crusts segregated in the weathering of the bed rock encumber a reddish soil unmixed with exotic material and topographically unaffected by any sign whatsoever of other agents than the meteoric conditions to which the areole is now exposed. The soft erodable materials form an escarpment descending from the 120 foot line to approximately the 50 foot contour line along which they disappear beneath the fresh gravel of the last ice advance. It is difficult to admit a transgression of the sea, however slight, over this surface without some trace of its action being left behind. This area appears to the writer as a monument of long continued land conditions, beginning before the Wisconsin epoch.

Far Rockaway ridge, Long Island. The outwash plain of the terminal moraine on the south side of Long Island is interrupted at Linwood by a singular ridge of gravels which extends southwestward to Far Rockaway inclosing behind it Jamaica bay. In a recent publication of the museum I recognized this deposit as being older than the terminal moraine and its outwash plain, and from my failure at the time to find granitic pebbles in the gravels referred the deposit to the pre-Pleistocene series. At about the same time Professor Salisbury¹ in a publication of the United States Geological Survey described the deposit as a shallow water formation practically contemporaneous with the outwash plain thus including it in the Wisconsin epoch and inferring from it the presence of the sea, if I understand his position correctly, at a somewhat higher level than now along the southern border of Long Island. Later I visited the ridge with Messrs Fuller and

¹Salisbury, R. D. New York City Folio. U. S. Geol. Sur. 1893.