

glacial peaty clay, the overlying till having been removed, apparently, in this old valley, for a few hundred yards to the east blue till is seen overlying the same peaty clay at a higher level. There are other points also, one at a brickyard in the east of the city, where the peaty clay seems to have been cut into a cliff before the Iroquois sands were spread over it, and half a mile east at Price's brickyard, the same cliff of clay buried in stratified sand may be found, though not so distinctly. If this evidence be admitted, the water stood for a long time at least 100 feet below the Iroquois terrace after the laying down of the last till sheet.

It is generally held that during the last retreat of the ice the succession of high level lakes was unbroken, and that Lake Iroquois followed Lake Warren without any dry land interval. It has been shown by Gilbert that owing to differential elevation of the basin toward the northeast the water at the southwest end of Lake Iroquois at first stood lower than the later level of the beach.* Perhaps the difference at Hamilton may be sufficient to account for the weathered till thirty feet below the top of the Iroquois gravels, for Hamilton is the farthest point southwest of the line running through Rome, N.Y., representing the axis at which the water level suffered no change. Toronto is very nearly on that line, so that there would have been little or no oscillation of the Iroquois water level; nevertheless there are indications of Iroquois erosion and weathering seventy feet or more below the Iroquois beach. Before making positive statements regarding this, however, it will be well to examine all the localities likely to throw light on the subject, and up to the present only a few of them have been studied with this point in view. If the fact should be established it may be necessary to assume the withdrawal of the ice after the time of the Warren water long enough for the erosion and weathering observed, and then an advance of the glacial lobe of the upper St. Lawrence valley to the Thousand Islands, and a halt at the northeast end of Lake Iroquois sufficiently long for the formation of the beach. It would be of great value to examine the clay beds or rock underlying the Iroquois beach gravels at other points than Hamilton and Toronto, so as either to prove or disprove the existence of a low water stage between the time of Lake Warren and that of Lake Iroquois as suggested above.

This splendid old beach, so excellently preserved in both New York State and Ontario, whose bars and gravel ridges are traversed by main roads for many miles, on whose terraces towns and cities are planted, should receive more careful study than has been devoted to it of late years so as to solve the interesting problems it presents regarding the immediate past of the region.

* 6th An. Rep. State Reservation at Niagara, pp. 70 and 71.