

descence of glacial conditions after another interval, is indicated by the great morainic loops stretching from Trenton westwards to Lake Huron and passing (as the Oak ridges) about eighteen miles north of Toronto.

The post-glacial history of the region near Toronto has not yet been satisfactorily worked out, though one episode, that of the Iroquois water as described by Dr. Spencer, has left its mark very distinctly in the old beach to the north of the city, and must have had considerable importance as regards the formation of surface deposits.

Much of the somewhat loess-like fine clayey sands of the Humber valley may turn out to be post-glacial; and Dr. Hinde supposes that the upper hundred feet of sand and gravel at the west end of the Scarboro' cliffs are of the same age; but my own observations incline towards an inter-glacial position for these thick and widespread but greatly eroded deposits. Similar sands occurring at York Mills and other points north of the city are undoubtedly covered by the upper till, which may simply have been removed from the more southern parts near the lake. Unprotected by a layer of till these sands are easily attacked by wind and water and superficially rearranged, so that their original structure and relationship becomes obscured.

Of course the Don and Humber with their tributaries have formed in the lower sluggish parts of their courses alluvial deposits of clay and sand that are evidently modern, and in some instances are added to by every spring flood.

The succession of events since Pliocene times in the vicinity of Toronto may now be reviewed in order to bring to a focus the results of the observations described in this paper.

No Pliocene deposits have been found in this region, supposing the earliest advance of the ice to indicate the end of the Pliocene; but the lowest till forms a carpet over the eroded surface of the Hudson River shales. At the time the earliest glacier advanced the Scarboro' region formed a valley whose hollow is now below the surface of Lake Ontario, and there were low hills where the Don and Humber valleys now exist, the