

More Evidence of Till South of the Ronkonkoma Moraine

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The accepted theory for the formation of Long Island has long been considered as occurring from two distinct glacial advances (Merrill and Others, 1902; Fuller, 1914; and Sanders and Meguerian, 1998) with a terminal moraine located in the center of it, trending east-west, and called the Ronkonkoma Moraine. Recent findings have presented the strong possibility that this may not be the case. Ultimately, the Ronkonkoma Moraine is likely not terminal moraine of the Wisconsin glaciation on Long Island based on the findings of till to the south of it.

During this investigation, till has been located in five southern locations in eastern Nassau county and Western Suffolk County and in the Great South Bay. The possible remains of a third moraine appear to exist along the south shore of Long Island.

An important factor for the existence of a southern till and possibly a third moraine are continuity. The existence of diamicton (when considered till it is of a particular mode of deposition) alone does not confirm that glacial activity advanced past the Ronkonkoma Moraine because it may easily be confused with diamicton deposited by other processes. Diamicton of turbidites could be widespread but would be discontinuous.

The culmination of this research conducted implies that a till does exist to the south of the Ronkonkoma Moraine and therefore the Ronkonkoma Moraine is not a 'terminal moraine' of the Laurentide Ice Sheet on Long Island. The exact sequence of depositional events for the formation of Long Island can only truly be determined with extensive research and lithologic investigation and may in fact never be determined.

The stratigraphic sequences that have been documented where the southerly till has been encountered are all pretty similar except for variations associated with glaciolacustrine deposits from lakes/pondings and minor depressions filled with fines of silt and clay size. The sequence lends fairly easily to the identification of future locations with the southerly till and their proper identification. The main obstacle to identifying the till based on the above sequence is locating exposures and excavations large enough to provide the full sequence. The southerly till is generally either surficial, is buried under a layer of loess, or may be missing altogether (due to erosion) and it appears to thin southward.