

Before passing to the notice of the outlet of Lake Vermont, it is desirable to determine, if possible, from the facts in hand the nature of the change which brought about a separation of the clay-depositing waters which extended from the upper Hudson valley into that of Champlain. On plate 28 of this report, a line (A-B) is drawn on the profile for the purpose of comparing certain water levels which occur at indicated points on the sides of the Hudson and Champlain valleys. The plane in which this line lies has a tilt from north to south at the rate of about 2 feet to the mile. The line is drawn through two of the highest beaches found between Port Kent and Sawyers hill at Street Road on the New York side of Lake Champlain. It is possible that these beaches are not contemporaneous. From Street Road to New York city there are practically no kettle holes now remaining unfilled in the drift below the levels which this inclined plane traces on the sides of the valley, except it be that the large kettle holes in and about Glen lake descend below the plane, with their tops, however, well above it. The kettle holes quite uniformly fall off in level to the south in rude parallelism with this plane of comparison.

From the southern border of the Highlands of the Hudson southward the sand plains and terraces contemporaneous with the retreating ice front rise to the northward in succession in close parallelism with this plain and approximately to equivalent elevations. Throughout the middle Hudson valley there is less accord in elevation of the actual deltas and this projected plane of comparison. It has proved well nigh impossible to find any systematic relation of the various water levels which are indicated in this portion of the valley, after making due allowance for such deposits as appear from their form or structure to have been built in waters confined along the ice margin or held up on the rock terraces of the Hudson gorge by ice remaining in it. In general there is clearly indicated, however, a rise of the water levels toward the north at something like the same rate of tilting as that indicated by the line of comparison; but the upper limit of the deposits falls below that of the plane of comparison as if at this later stage of delta building along the ice border in the river either the land had risen or, if it were