

over and around our present lake basins, then became converted into a fresh-water sea. This probably found its outlet to the ocean through what is now the broad valley of the Mississippi. Its waters stood at a great elevation above the waters of our present lakes, and were gradually lowered to these levels by physical changes in the surrounding country, and more especially by the depression of a higher region lying to the east. During this gradual fall and retrocession of the great lake waters, the upper layers of the Drift were re-sorted, mixed with newer sediments, and thrown up here and there into secondary ridges; and the remarkable terraces which form so salient a feature in the general aspect of our lake shores and intervening districts, were then in chief part produced. The escarped faces of these Drift terraces, it should be observed, *always front the present lake-basins*, and thus look in some places towards the north, and in others towards the south, &c., according to the direction of the nearest shores. This would necessarily arise if they were produced, as here imagined, by a gradual lowering of the waters, with intervening periods of repose. The shells of fresh-water mollusca, buried in the modified Drift, at various levels above the existing lake-waters, and in localities so far apart—for these shells have been found throughout the region south of the lakes, in addition to the localities mentioned in this paper—prove incontestibly the former expansion and union of our lakes, or, in other words, the presence in this part of Western America, of a widely-extended fresh-water sea, covering an enormous area. A curious circumstance, and one of great significance in its bearings on this question, is the fact that all the inclined layers of modified Drift (to the east, at least, of Lake Superior) appear to slope towards the west or south. A remarkable instance of this, hitherto, it is believed, unnoticed, may be seen near the mouth of the Niagara river, at Lewiston. At this spot, oblique layers of modified Drift, in beds made up of coarse gravel and pebbles, point nearly due south, and thus bear witness to the fact, that the current, which occasioned the inclined stratification, must have set directly up the gorge, *or against the direction of the present stream*.

The assumption of an immense fresh-water lake of this character, gradually falling from a high level, necessarily involves the additional assumption of an eastern barrier, extending at one period between the lake-waters and the Atlantic. This view was maintained by some