

writer has not met with any connected or detailed investigation into the physical cause of the basins in which they lie, and which determine their existence. Until lately no proposition at all tenable had been promulgated; but since Professor A. Ramsay's strong advocacy of a glacial origin for the basins of certain European lakes, there seems to have been a tacit extension of this theory, so that according to some it explains the formation of almost all lakes in the North Temperate Zone, and were it not for the existence of several great inland seas in Equatorial Africa, it would, we think, be accepted by not a few as the sole and sufficient cause of all lake basins on the surface of the globe.

The merits of this theory we do not propose now to examine. Our purpose is merely to test its application to the case of the great North American lakes. The publications of the Geological Survey of Ohio have shown that opinion is yet divided upon this point. Dr. Newberry, its director, is apparently himself in doubt, as we infer from expressions in different parts of the work. For instance, we read in the volume for 1869, p. 28:

"Lake Erie in the glacial era was not a lake but an excavated valley into which the streams of Northern Ohio flowed."

But in the volume for 1873, Dr. Newberry says:

"It is doubtless known to some who may be readers of this volume, but probably is realized by few, that the basin of Lake Erie in all its length and breadth—as well as the smaller and yet deeper one of Lake Ontario, and the broader and far deeper ones of Lakes Michigan and Huron—has been excavated by mechanical force from the solid rock. . . . They are plainly basins of excavation dug out of sheets of rock which were continuous over all the area they occupy. . . . Any one who will stand on the cliffs which overlook the lake in North Eastern Ohio, 750 feet above the water, and will look over the sea-like expanse toward the Canadian shore, will get some realizing sense of the vastness of the mechanical effect which has been produced here. . . . The agents were unquestionably the same that have produced all the great monuments of erosion seen elsewhere—*water* and *ice*; and of the two that which was by far the most potent and that which alone could excavate broad boat-like basins such as these was ICE." p. 49.

Again we read in the volume for 1874, p. 77:

"Previously to the glacial period the elevation of this portion of the continent was considerably greater than now, and it was