

limitation of time is so extraordinary that it would have passed for an accident or oversight, but that it is repeated at greater length on the very next page; did it form any essential part of the theory, this would deserve all the strictures passed upon it, but such is by no means the case. Without entering into the question of whether the geologists quoted by Dr. Wallace accept this limitation of time, I may point out that it is altogether more reasonable to regard the deformation as having taken place *after* the advance of the glaciers. We know that during the glacial period there were great changes of level, and it is reasonable to suppose that these were not absolutely uniform; moreover, had the rock basins been formed before the ice was there to fill them, they would mostly have been filled at once by river deposits, as has been the case in nonglaciaded regions, and once filled up they would remain so on this theory, for if a glacier cannot erode a rock basin it cannot clean out one that has been filled up with stream deposits. This alteration of time makes the theory more natural and acceptable; when a rock basin is formed in the course of a stream by elevation or subsidence no lake arises in the great majority of cases, as either the barrier is destroyed by corrasion, or the hollow is filled up by deposition, as fast as it is formed; but when the basin arises underneath a glacier it becomes occupied by ice, and on the retreat and disappearance of the glacier a hollow is left that is at first filled by water, forming a lake, and only subsequently by degrees filled up by stream deposits. In this way the connection between the present distribution of lakes and the areas of pleistocene glaciation is easily explicable, and it is consequently not admissible as an argument to prove that the lake basins were excavated by glaciers until it is shown that in the nonglaciaded regions, where there are now no lakes, there are also no rock basins.

With most of the regions quoted by Dr. Wallace I have no personal acquaintance, but in India such do certainly occur, and have as certainly not originated by glacial erosion; in some cases the existence of the rock basin has been proved by borings, but besides these there are many more instances where there can be no reasonable doubt of the existence of a rock basin, through the final test has not been made.

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The Origin of Lake Basins.

THE most thorough-going glacialist could find no ground for complaint that Dr. Wallace has not gone far enough in his most interesting advocacy of the glacial origin of lakes. I do not propose to enter into any general discussion of this question; that glaciers can excavate rock basins is indisputable, but there is a limit to their power, and this limit I believe to be reached far short of even the larger of our English lakes. The controversy is of long standing, and there is little new to be said on either side; nor would I have desired to re-enter it, but that Dr. Wallace's article seems to me to contain one serious fallacy and one vital misstatement which have not as yet been noticed, though they should not be left uncorrected.

The fallacy is not a new one; it may be found in the writings of more than one of the advocates of the glacial theory, and is contained in the argument that because lakes are found in regions that have been extensively glaciaded, and are not found in regions precisely similar in every respect, except that there has been no great extension of glaciers, therefore the rock basins in which the lakes lie were excavated by glaciers. I trust I have not misrepresented the argument in this succinct statement of it; but such condensation is useful if we would detect a fallacy, and in this condensed form the fallacy of the undistributed middle term becomes conspicuous. The term "lake" is by no means coextensive with the term "rock basin," and it is not the water filling the lake which requires explanation so much as the basin that it fills. A rock basin filled with alluvium is a rock basin still, and requires explanation as much as if it contained water, and was consequently a lake.

The misrepresentation is to be found in Dr. Wallace's limitation of what he rightly regards as the only tenable alternative theory, that the rock basins owe their origin to deformation of the surface immediately before the advance of the ice. This