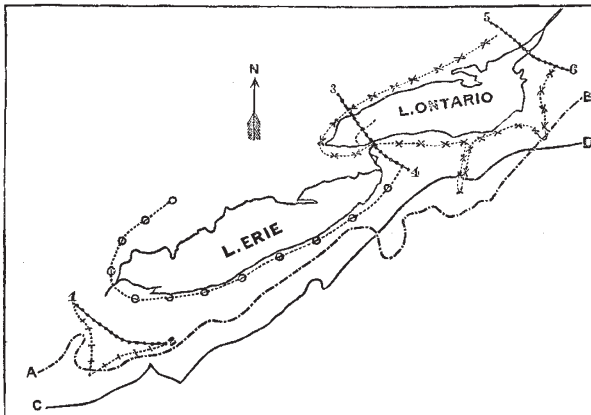


PREHISTORIC REMAINS IN AMERICA

At a recent meeting of the Washington Anthropological Society, Mr. G. K. Gilbert described a prehistoric hearth under the Quaternary deposits in Western New York. The speaker described the finding of the remains of a wood fire in the bottom of a well through the drift deposits near Gaines, a few miles south of Lake Ontario. The evidence in the matter rests almost entirely on the statements of a Mr. Tomlinson, a well-known and respected resident of the place, and who, personally, made the find upon his own farm. It was twenty years ago that the discovery was made, but Mr. Tomlinson has stated that his memory of all the essential details was very clear, and the speaker had every personal reason for believing the statements. The story is briefly that in sinking a well through 17 feet of gravel and clay, they found lying upon the rock at its bottom three large stones, partly inclosing a small space in which were about a dozen charred sticks, undoubtedly the remains of a fire started by human hands. Mr. Tomlinson gave some of these remains to neighbours, who still remember the matter, and the remainder he kept himself. In time, however, they have been lost, and the endeavour to find them did not meet with success.

The speaker then discussed at length the character of the beds under which the remains were found, and their geologic age, illustrating his statements by a map, of which a small copy is here reproduced.

The line A B shows the approximate southern limit of the lake drainage, and C D the approximate south-eastern extension of the second glacier, which, it will be noted, extends across the



Map of the Ontario-Erie Lake Basins, showing their Quaternary history. The prehistoric hearth was found at x.

drainage line for a considerable distance. When the front of the glacier began to retreat, successive lake basins were formed, extending toward the drainage line and discharging at the lowest point in the divide. When the front of the glacier had retreated to the line 1-2, a lake extended over the area shown by the fine dotted line bearing small cross lines, and discharged toward the Ohio, near what is now the city of Fort Wayne. When the ice front had retreated to the line 3-4, the lake covered the area in part inclosed by the fine dotted line bearing the small circles. It was on the eastern shore of this lake that this ancient fire was built, and by its shore wash that it was so gently covered as not to be disturbed during the process.

By further retreat of the glacier toward 5-6, a lower outlet was exposed in the valley of the Mohawk, and the surface of the glacial lake again fell—the Lake Erie portion to the level of the escarpment of Niagara limestone which still dams it back, and the Lake Ontario portion to a somewhat lower level. Further retreat of the icy dam to 5-6, and beyond, opened the St. Lawrence channel, and the present drainage was established.

From this explanation the comparative age of the hearth and its remains is indicated. It was near the end of the second glacial period, and at the time of separation of Lake Ontario from Lake Erie. At about this time, also, the Niagara River began its work of cutting through the escarpment of Niagara limestone, and at which it has been engaged ever since. Its rate of progress having recently been approximately determined, we are able to estimate the number of years as about 7000 since the lakes were separated and the gorge and falls begun. This estimate

is based on comparisons of a recent survey by the U.S. Geological Survey with those made by the New York Survey forty years ago, and is open to some qualifications. In the first place, it is possible that some of the gorge was cut before the glacial period; then it has been found that the hardest stratum through which the river has to cut thins somewhat to the eastward, and thus offered less resistance to wear at an earlier date in the history of the gorge; and then, again, the possibility is presented of the volume of water having been vastly greater toward the close of the glacial period, and it is known that the erosive power of water increases very rapidly with increase of volume. These qualifications tend to reduce the time estimate; but on the other hand, evidence has been found that at one time the other lakes above Erie emptied by another means, and if this was so for any great length of time after the birth of the Niagara, it would tend to very greatly increase the time.

In the discussion following this paper, Mr. Murdock, of the Point Barrow Station, gave an account of the finding of a prehistoric relic under somewhat similar circumstances. Their station was near the extreme north-west corner of this continent, on a beach ridge a few yards from the Arctic Sea. This ridge was 9 or 10 yards in height, and extended along the coast for some distance. In making an excavation for an earth thermometer, they penetrated a 1-foot layer of turf which capped the ridge, and then frozen gravel and earth to a depth of 20 odd feet, where an Eskimo snow-goggle was found embedded in the frozen earth. The goggle was identical with those now in use, and consists of a piece of bone covering the eyes and bridging the nose, with small slits to admit a very limited amount of light and protect the eyes from snow-blindness. The specimen found had strings of braided sinew attached, but these were broken in removing them from the hard matrix. The speaker believed that the beds inclosing and covering this relic were the results of beach wash. The Eskimo of the region have a tradition that people used to live at the locality of the find, and a few remains of houses are found in the vicinity.

At the same meeting Mr. W. J. McGee read an informal paper on the finding of a spear-head in the Quaternary beds of Nevada.

The speaker described the geologic features of the Walker River cañon, in the lacustrine deposits in which the find was made. These deposits are those of the fossil Lake Lahontan, and were deposited in the old cañon during the Quaternary period. Since then the river has cut a new cañon through them, and they are now finely exposed. Beginning above, the beds consist of silt and loose materials for several feet, then comes a layer of calcareous tufa lying upon 20 to 30 feet of white marl, containing remains of extinct mammalia, and resting unconformably upon a somewhat similar series of beds of earlier date. It was in the white marl of the upper beds that the implement was found. The speaker described in detail the conditions under which the find was made. He was alone at the time, and far distant from camp or party; he had been carefully examining the face of the marl talus as he rode along, and was searching for occasional bone remains. At one point, 26 feet below the surface, he noticed a small projecting point which looked as if it was caused by a bone. Picking off some of the surface, he at once recognised the object to be a product of man's handicraft; and appreciating the importance of the find, and the necessity of a very thorough study of all the circumstances connected with it, framed some working hypotheses before removing the implement. At first it appeared probable that it was embedded in a superficial coating of the slime which is often washed over the surface of this loose marl. This was at once disproved by examination. Other possibilities were suggested, such as its having fallen into its position down a fissure or been shoved into the face of the cliff by man; but these were all found to be, if not impossible, extremely improbable, and the speaker had concluded that it was deposited with the marl. Extensive stratigraphic studies have been made of these lacustrine deposits by King, Russell, and Gilbert, and there can be no doubt but that these beds and the flint were deposited toward the close of the glacial period, and about at the same time as those covering the hearth described by Mr. Gilbert. The implement was a spear-head 3½ inches in length, finely made and well preserved.

In the discussion which followed this paper, several members called attention to the great value of the find from the fact that it was made by a well-trained observer, who appreciated the importance of his discovery before destroying the evidence, and then carefully studied every detail connected with it.