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THE SOURCE OF THE MISSISSIPPI.

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The true source of a river like the Mississippi is a question of great geographic importance. For fifty years after the naming of Itasca lake, by Schoolcraft, in 1832, the source of this great river was accepted as Itasca lake. In 1881 Willard Glazier, an American who had served in the United States Army in the late war of the Rebellion, visited Itasca lake, and proclaimed in bombastic style that he had discovered another lake still higher up the valley, whose outlet ran into Itasca lake, and which should, therefore, be considered the source of the Mississippi. By reason of the style of the publication, and owing to the various flagrant errors and misrepresentations which were embodied in the volume, this claim was discredited from the first. Glazier was, however, industrious in spreading his new discovery in all parts of the world. Several Geographical Societies and reputable publishers accepted his representations, and "Lake Glazier" was installed in the honorable dignity of source of the great river.

The Minnesota Historical Society instituted a thorough survey of the head waters of the Mississippi, with a view to learn the exact topographic and hydrographic conditions, and also an inquiry into the history of exploration. The object of this was to settle definitely the actual source, as well as the actual discoverer. This work was done by Mr. J. V. Brower, and his exhaustive report, with maps, is published as the seventh volume of the Society's "Collections." The result of this survey was to set aside entirely the claim of Glazier. While recognizing the lake (known as Elk lake formerly)

which Glazier "discovered," and which is really a lake of considerable size and is above lake Itasca, the Society's report shows that another stream, known as Nicollet creek, rises still farther up the valley; that this creek, with its several lakes, was fully described and mapped by J. N. Nicollet, in 1840; and that the lake "discovered" by Glazier had been surveyed and reported to the United States Government in 1875, under the name of Elk lake.

In 1891, Captain Glazier made a second expedition to the region. The result of this expedition is recently published in a handsomely illustrated volume ("Headwaters of the Mississippi," Rand & McNally, Chicago, and New York, 1894), which reviews all previous explorations and publications bearing on the source of the Mississippi. This work repeats and strongly maintains Glazier's former claim, and in a very able and plausible treatment sets forth lake Glazier as the actual source of the Mississippi.

To those who have not kept in touch with this investigation, the showing which Glazier makes may appear convincing and conclusive. He has, however, chosen to present such facts as are favorable, and to omit some which are unfavorable or fatal to his "discovery." The volume contains a profusion of asseveration, republications of opinions of his friends and companions, and quotations from newspapers which have sustained his pretensions. There is but little that is new in the work, and his report, so far as it bore on the leading question, had been already published in various places. It is necessary to compare it with the exhaustive discussion by Mr. Brower in order to reach a legitimate conclusion. It will be seen that he does not deny any of the statements of fact presented by Mr. Brower. He either ignores them, or belittles them. It may be profitable to reduce the dispute to its lowest terms, and to look at the facts when relieved of all fustian and multiplication.

Nicollet described a stream entering Itasca lake from the south. He did not claim that it should be considered the source of the Mississippi, in contravention of Schoolcraft's discovery. He said he only served, as a successor, to define a little more fully the discovery of Schoolcraft. This stream

passes through several small lakes, and in one of these it becomes lost, reappearing again as springs at a lower level. According to Nicollet, this is the "infant Mississippi," the "cradled Hercules," whose power at maturity was sufficient to cause the continent to tremble, or to smile. Both he and Schoolcraft failed to observe another stream whose entrance into Itasca lake is constantly hid by rushes, but which leads to Elk lake. This stream was entered by Glazier. If the actual source of the Mississippi be pursued to higher levels than lake Itasca, the competition for the honor lies between these two streams. The essential facts are now well established by surveys. The Nicollet valley has been accepted as the chief tributary above Itasca lake by Nicollet and Brower, the latter being the surveyor who examined the whole region and reported, with maps and full data of all kinds, to the Minnesota Historical Society. The Elk lake valley, with its chief stream, Excelsior creek, is represented by Glazier as the principal tributary above Itasca lake.

The question may be relieved of all side issues and narrowed down to two propositions:

1. Which is the larger and longer valley?
2. Who discovered these valleys and water courses?

It is a singular fact, as appears from the representations of Glazier, that Elk lake was not seen either by Schoolcraft or by Nicollet, although they were both in pursuit of the source of the Mississippi under the guidance of the Indians, a fact which indicates the estimate put by the Indians on the relative importance of these streams. The actual measurement of these streams has been made at their mouths, by several persons. The Nicollet stream, which is in the continuation of the main valley of Itasca lake to the southwest, according to Glazier has a width of ten feet and a depth of two and a half feet. The Elk lake stream has a width, by the same authority, of seven feet, and a depth of three feet. The channels are, therefore, in point of capacity, as the numbers 25 to 21. If the velocity of the streams be considered the same, the Nicollet creek would carry nearly 20 per cent. more water than the Elk lake stream. But according to the descriptions, the Nicol-

let creek is more rapid than the Elk lake creek, and may be estimated to carry twice as much water as the Elk lake stream.

In point of view of the length of the two valleys, or, more correctly, of the two streams, Nicollet and Brower trace Nicollet creek to a distance of several miles above Itasca lake, but Glazier allows this stream only a length of a mile and three-eighths. The valley which is drained by Excelsior creek, the chief tributary of Elk lake, Mr. Glazier followed to a distance beyond Itasca lake of 14,106 feet. From these data he decides that the length of "running water" is much greater in the Elk lake valley. There are, however, several facts bearing on the length of Nicollet creek which Mr. Glazier does not mention. He traces it up to a great spring. He is willing to suppose that a stream whose depth is two and a half feet, with a width of ten feet, may have its gathering area all embraced within a mile and three-eighths from its debouchure. Had an explorer, intent on finding the source of a stream, found it issuing apparently from the ground with such a volume, his own judgment would have driven him to search further up the valley, as Nicollet, Clarke and Brower did. He would there have found the same stream reappearing, and again disappearing. Sometimes in lakes, or in marshes, lost to sight as running water, like a "bashful maiden," as described by Nicollet, finally plunging under a screen of vegetable debris, bogs, peat, and floating driftwood, much overgrown with small trees, only to come to the light of day again at the "great spring," 7,307 feet from Itasca lake.

The length of this water course, thus included, is considerably more than the farthest traceable limit of Excelsior creek. It may not be in lake Hernando de Soto, as supposed by Brower, that the highest actual water of Nicollet creek can be identified, but it is certainly several thousand feet above the point adopted by Mr. Glazier. In northern Minnesota, where vegetation is rank and the materials in which it grows are loose, like the sandy soils about Itasca lake, it is no uncommon occurrence to find small streams blocked by such obstructions. They spread out, disappear in marshes, plunge under floating bogs or driftwood, and issue at lower levels. The St. Louis river, the principal stream entering at the head

of lake Superior, was permanently invisible for the distance of nearly a mile, near Cloquet, until within a few years. It flowed under a mass of floating driftwood on which grew small birches and aspens. Lumbermen finally cut the driftwood away for the purpose of floating logs to lower points. The celebrated raft of the Red river in Arkansas is a parallel case. The principle is the same as with the obstructions of Nicollet creek. Such interruptions of "running water" are not limitations of the valleys, nor of the streams that drain them. They are non-essential accidents, and cannot be considered as having any important bearing on the true size and length of Nicollet creek.

This important omission of an essential fact in the investigation conducted by Glazier, seems to be fatal to the claims of Elk lake and Excelsior creek.

We next ask: Who discovered Elk lake, which has now been named "Glazier lake" by the recent travellers? It was thought, at one time, that Julius Chambers entered it in 1872, but Mr. Glazier shows that his description applies rather to one of the lakes of the Nicollet valley. Mr. Glazier found it in 1881. He hastily promulgated it as a new discovery, announcing this at various points on his way to the mouth of the Mississippi. In 1875, however, this region had been surveyed by the officers of the United States Land Survey, under Gen. James H. Baker. This lake was platted and reported, in the regular manner, to the Government at Washington, under the name which it seems to have borne among the Indians and early explorers, *Elk Lake*. As such it has gone into the official records. The Minnesota Historical Society has approved this nomenclature, and finally the Minnesota Legislature has passed a law declaring that in the public schools of the state no geography shall be used by the pupils which gives this lake any other name. The fact of the earlier naming of this lake is not disputed by Glazier. He claims priority on the ground that the business of the land surveyors was not to discover the source of the Mississippi, that they did not trace out its feeders, and that they did not make wide publication of their discovery. If these be considered fatal defects in the governmental discovery of this lake, it is probable that there will be no objection to admitting the priority of Glazier.

When a careful and dispassionate examination is made of the essential facts, as now known, the conclusion is forced that Mr. Glazier fails to substantiate his claim. A hasty examination of his last work, without a full knowledge of the facts brought out by the Minnesota Historical Society's survey, would lead to the favorable consideration of his claim, since he evades the adverse facts and dwells on the repeated assertions of his friends and followers, and on the favorable showing which he is able to make in respect to the lake which he found in 1881. History and geography cannot be promoted by such partial and interested advocacy.

If Itasca be not allowed to stand as the source of the Mississippi, the competition lies between Nicollet and Excelsior creeks, and the former has the greater length and volume. If it is necessary to choose a lake as its source, then some of the upper lakes of the Nicollet valley must be accepted. If, finally, it be necessary to accept Elk lake, that lake was first discovered and mapped by the United States Surveyors in 1875. Mr. Glazier's claims, in every respect and in any case, are thus annulled, on the basis of facts which, if he does not himself publish, he does not call in question.

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