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THE QUESTION OF THE SOURCES OF THE MISSISSIPPI RIVER.

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Translation by Col. William P. Clough of the Minnesota Historical Society, from a publication by the Institute of France in its *Bulletin of Historic and Descriptive Geography*, issued by the Committee of Historic and Scientific Researches, sitting in the Ministry of Public Instruction, 1894.

The sources of the Mississippi have been the subject of animated debate for a dozen years. A mission, with which Mr. J. V. Brower was charged in 1889, by the Minnesota Historical Society, and a volume published in 1893 in *Minnesota Historical Collections*, by the Society, containing the memoir of Mr. Brower, have closed the discussion. It is from that interesting volume, entitled *The Mississippi River and its Source: A Narrative and Critical History of the Discovery of the River and its Headwaters, accompanied by the Results of Detailed Hydrographic and Topographic Surveys*, by Hon. J. V. Brower, that we draw the materials for the following sketch.

I.

The region of the sources of the Mississippi is formed by a deposit of glacial drift 100 feet and more in thickness, having numerous depressions, which probably existed in the primitive rock, and which today are so many lakes. One of the frontal moraines, the Itasca, traverses this region. The multiplicity of lakes, great and small, and of the streams that unite them,

the density of the forest that surrounds them, and the leanness of a soil that has failed to attract settlers, have been so many obstacles to the precise determination of the river's sources.

II.

The French were the first Europeans who penetrated this region. They came by way of the Great Lakes. Champlain had not been farther than lake Huron. Nicollet, interpreter of the French Company, advanced, in 1635, westward from the bay of the Puans (Green bay) as far as to the country of the Dakotas. He travelled some three days, as he says, along the course of a great river, by which one could reach Japan. But Nicollet left neither map nor description.

In 1641, the fathers Raymbault and Jogues sailed nine days upon lake Superior, and went among the savage tribes who dwelt on the south side of the lake.

Two traders, Groseilliers and Radisson, made two voyages into that region; the first, presumably, in 1658; they penetrated to the westward of the lakes, a treeless country, where the Indians raised a little corn. It was evidently the prairie. They must, therefore, have crossed the upper Mississippi river; but they merely mentioned, later on, the "Grand river." About that time (Relation of 1667) a Jesuit missionary, the father Allouez, located at the Mission of the Holy Spirit, upon lake Superior, heard mention of a great river named Messipi. It was the first time the name had been pronounced in Europe.

The intendant, Talon, in 1672, sent the Sieur Joliet to explore the Mississippi* (it had then become known by that name), which was supposed to empty into the Gulf of California. Father Marquette accompanied him. They arrived via the Bay of the Puans, at the Wisconsin river, where their guides, frightened by the length of the voyage, deserted them; and they descended to the confluence with the Mississippi (June 15, 1673), "a river," says Marquette, "that takes its source in several northern lakes." Having descended the Mississippi itself, as far as the vicinity of the confluence with the Arkansas, they gained the conviction that the stream, to

*"M. Talon has judged it expedient for the service to despatch the Sieur Joliet to the land of the Maskoutens and the great river called the Mississippi, which is believed to empty into the Gulf of California."—Letter of Frontenac to Colbert, cited by Margry.

which they gave the name Colbert, emptied into the Gulf of Mexico.

La Salle, who, about the same time, had explored the region to the southward from lake Erie (1669-1672) and probably had descended a portion of the Ohio, without reaching the Mississippi, returned to Canada, after a visit to France. He was entrusted by Seignelay with the exploration of the western part of New France. In 1679, he appears to have arrived, in a canoe, by way of lake Michigan, at the mouth of the river of the Miamis (Saint Joseph), and, from there, to have reached the river Teakiki (Kankakee). On January 5, 1680, he was at lake Peoria, on the Illinois river, where he constructed a fort (Fort Creve-Cœur), and a large boat for descending the Mississippi. The Indians tried in vain to terrify him, so as to deter him from his project.

A Recollet, Father Hennepin, accompanied by two men, separated from La Salle's expedition, passed down the Illinois, and afterward ascended the Mississippi (March, 1680). Captured by the Sioux, near the Des Moines river, the voyageurs were carried off, by way of the Mississippi, and afterward by land, as far as to Mille Lacs. Released, they (Father Hennepin and one of his companions) saw grand cascades that they named the Falls of Saint Anthony. Some time afterward, they met the Sieur Du Luth, sent to find them, and, together with him, returned to Canada by way of the lakes.*

La Salle, who by dint of his energy, had maintained his position in his fort, and had even revisited Canada, found himself in readiness to set out, in 1682, with Tonti, a Recollet father, twenty-four French, eighteen Indian men, and seven Indian women. He descended the Illinois (December, 1682); afterward the Mississippi as far as the sea; and took possession,† in the name of the French king, of the country which he named *Louisiane*, and which comprised the whole region drained by the tributary waters of the river, "from its sources, in the country of the Sioux, or Nadoussioux," down to its mouth, confident that they were the first Europeans who had descended or ascended the "Colbert."

*[Here appears, in the original pamphlet, Fig. 1, being part of the map of "The New Discoveries to the West of New France," based upon memoirs of Delisle, 1750.]

†An official account states that there was planted a cross, and underneath it a leaden plate, whereon were inscribed these words: "In the name of Louis XIV., King of France and Navarre, April 9, 1682."

The river had been discovered; but, in spite of some voyages made subsequent to that of Marquette into the Sioux country, its source was not precisely known at the date of the loss of Canada by France. Only this was known; that it originated in the little lakes west of lake Superior. Mr. Brower gives, in his account, a fragment of a map of the "New Discoveries to the West of New France," based upon the memoirs of Delisle (1750). The Mississippi is there laid down as heading in a small lake lying to the south of another lake, which, discharging into lake Superior, is perhaps the Lake of the Woods.

III.

The English having become masters of Canada, one of their explorers, Carver, ascended the Mississippi (1766-1769); going no higher up, however, than a little beyond the river Saint Croix.

An American, William Morrison, who frequented that region, saw, in 1804, as he says in a letter written long afterward, at lake La Biche, "the source of the great river Mississippi." He thus was the first European who had seen that source, or at least the first whose presence in the locality is attested by written evidence. But whence came the French names cited by Morrison himself? Lac de La Biche, which has become, in English, Elk lake; lac Travers, lac La Folie? It must be believed, that French hunters or traders, or possibly mixed-bloods speaking French, had preceded him; and that, if they had not visited the very source, they had, from the natives, learned of it with sufficient precision to give originally, or by translation of Indian words, the French names to these lakes.

After the cession of Louisiana, the United States Government commissioned Lieutenant Pike to examine the sources of the Mississippi; but he went no farther than a lake called Red Cedar, which is none other than the Cass lake of the present day. He wrote (1806): "This may be called the upper source of the Mississippi river." It was far from it. Fourteen years later (1820), General Lewis Cass, Governor of Michigan, directed to the same end an expedition that set out from the head of lake Superior and proceeded as far as the lake later

named Cass; but, having learned from the Indians that the source of the river was farther west, in the lake La Biche, and that the streams were not navigable, it went no farther.

In 1824, an Italian adventurer, Beltrami, published, in New Orleans, a work entitled *The Discovery of the Sources of the Mississippi*. In reality, he had reached Red lake in a canoe, and, from there, a region studded with lakes. From the height of land, he stated that he saw the waters flowing toward the four points of the horizon. Upon the most elevated plateau was a lake which he named Julia and proclaimed it as the true source of the Mississippi. It was probably Turtle lake, which lies at the northerly rim of the Mississippi basin.

IV.

As yet, there had been no scientific exploration of the region of the sources. The first is due to Henry Rowe Schoolcraft, who had accompanied General Cass in his expedition of 1820. Schoolcraft, appointed in 1830 Superintendent of Indian Affairs in Michigan, was charged by the War Department to make such an exploration. He set out with a missionary, the Rev. Mr. Boutwell, in 1832, and, with Lieut. James Allen, gained Cass lake; and, guided by the Chippewa Indian chief, Ozawindib, ascended in a bark canoe the eastern branch of the Mississippi. Subsequently, by a portage, he reached the easterly arm of the lake visited by him. He regarded this lake as the river's source, and called it *Itasca*.* Thence he returned to Cass lake.

Upon the very hastily drawn map that accompanies the account of Schoolcraft's expedition, the river springs in two branches which unite in lake Travers.† The eastern branch is that which he ascended. The western branch heads in lake Itasca by a brook, "which is," writes Lieutenant Allen, "20 feet broad, and 2 feet deep."

*The origin of this name is fantastic. Schoolcraft had asked Boutwell to tell him how the true source of a stream would be designated in Latin or in Greek. Boutwell, remembering his Latin imperfectly, only recalled the words *veritas* and *caput*. "All right," answered Schoolcraft, "I will use the end of the first word and the beginning of the second. Itas-ca shall be the name of the source of the Mississippi." (*The Mississippi River*, p. 145.)

†[Here appears in the original pamphlet, Fig. 2, a sketch of the sources of the Mississippi, intended to illustrate the visit of Schoolcraft to Lake Itasca in 1832.]

In 1836, a Frenchman who had been professor of mathematics at the Academy Louis-le-Grand, and whom circumstances had thrown to America, J. N. Nicollet, was employed to prepare a topographical map of the sources of the Mississippi. He started from Fort Snelling, and bivouacked at Saint Anthony Falls, where the Indians robbed him of his canoe and outfit. Re-supplied by the Indian Agent at the Saint Anthony post, and attended by a Frenchman, Désiré Fouchet, and by several mixed-bloods and Indians, he reached Leech lake, added to his party another Frenchman, Brunel, and a Chipewa guide, and, equipped with geodetic instruments, penetrated to lake Itasca, whose affluents he examined with care. "The waters," he says, "which run down the northward slope of the Height of Land [that part of the Height of Land now known as the *Itasca moraine*] lying to the south of lake Itasca, give rise to five brooks. These waters I regard as the original sources of the Mississippi." He has had the merit of determining the true basin of these sources. That is why Mr. Brower has given his name to several localities in that region. His map confirms the assertions of Schoolcraft; but it is much more detailed and precise. [Reference is here made to Fig. 3 of the original pamphlet, reproducing a part of Nicollet's map.] The westerly fork, which he names the *Mississippi*, springs from a small lake that he has distinguished by the name *Sources of the Mississippi*,* and it runs through two small lakes, in a marshy valley, before falling into lake Itasca, whence it flows to join the eastern branch, near its entrance into lake Travers.

In 1872, a journalist of the *New York Herald*, Chambers, proceeded to lake Itasca, and afterward descended the river, in a canoe, to its mouth. In exploring the lake, he found, at the southern end of the western arm, a narrow creek by which he reached a small lake, to which he gave the name of his canoe, *Dolly Varden*. "Here, then, is the source of the longest river in the world, in a small lake," he exclaimed. This small lake, which was perhaps not yet separate from lake Itasca at the period of Schoolcraft's exploration, but which has now become so, has definitely received the name of *Elk lake*, from

*The west fork, at its head, had a breadth of from 15 to 20 feet, and a depth of 2 to 3 feet, in August, 1836, when Nicollet saw it. Nicollet computed its altitude at 1,680 feet. Mr. Brower gives today, 1,578 feet. Nicollet gave 1,575 feet as the altitude of Lake Itasca.

Brower.* Gen. James H. Baker, Surveyor General of the Minnesota district (1875-1879) caused to be surveyed, by Mr. Edwin S. Hall, in 1875, the region in which the sources are found. The survey, followed by division into townships and sections, was completed in 1876; and upon the plat of township 143, range 36, are marked *lake Itasca*, and, to the south of it, *Elk lake*. Schoolcraft, having given the name *Itasca* to the lake previously known under the name *La Biche*, Gen. Baker, conforming to the Government rules, restored that name, by applying it to the small lake that Chambers had before differently christened. Moreover, the plat shows, without name, the brook that Nicollet had explored.

The country is broken, thickly timbered, unsettled. It can be traveled only in Indian style, by canoe and portage. Few tourists venture there. A few claim the honor to have visited it since 1836. The expedition of Mr. Siegfried, reporter of the *Louisville Courier-Journal*, in 1879, as well as that of Mr. Garrison for geological observations in 1880, contributed no more to topography than did that of Rev. Mr. Gilfillan in 1881. The first civilized settler who inhabited that region was Mr. Peter Turnbull. He located, in 1883, near the east bank of *Itasca lake*, and stayed there two years with his family. A few other settlers followed his example, and the beginning of a route into the forest was opened. But the land was ungrateful. Mr. Turnbull quit it at the end of two years. The rest followed his example, and the country relapsed into a wilderness.

V.

Such was the state of information, when an American by the name of Glazier, assuming the title of "Captain," announced in the *American Meteorological Journal*, of Detroit (1884), and in a letter to the Geographical Society of London, published in the number for January, 1885, under the heading, *Discovery of the true source of the Mississippi, by Captain Willard Glazier (U. S.)*, and accompanied by a map, that he had found the sources of the Mississippi. He had been guided by an Indian, who had drawn for him a rough sketch of the lakes,

*[Here appears, in the original pamphlet, Fig. 3, a reduction of the topographical map of the sources of the Mississippi, and of the Red River of the North, prepared from astronomic observations made, and levels taken, in 1836-37, by J. N. Nicollet.]

and had arrived at Lake Itasca in a canoe, through the string of small lakes that extend westward from Leech lake, and by the east branch of the Mississippi. In passing up the west arm of Lake Itasca, he had penetrated, July 22, 1881, into another lake, which he declared to be of large area, and which he put upon his map sent to the Geographical Society, with the name Lake Glazier.

"We were rewarded," he says in his letter, "by the discovery of another lake of considerable size, which proves to be, without the shadow of a doubt, the true source of the Mississippi, in lat. $47^{\circ} 13' 25''$."

Now, this lake was none other than *Elk lake*, which, for a long time, had been known and carried upon the maps.* Mr. Glazier pushed his investigations no further, but descended the entire course of the Mississippi in his canoe. Later, he published, besides his letters, an account of the trip, "Down the Great River," in which he borrowed extensively from Schoolcraft's work, without crediting him.

Glazier's unjustifiable pretensions stirred up people in Minnesota. Upon report of Gen. Baker, the Minnesota Historical Society vigorously protested; accused Mr. Glazier of falsification; and demanded that official names, especially that of *Elk lake*, should not be changed. At the Congress of Geographic Science, held in Berne, in 1891, Mr. Hurlbut, Librarian of the American Geographic Society, procured the formation of a committee to examine the question; and, in its report, the committee has clearly established the facts, and exposed Mr. Glazier's fraud.

The press agitated the question; and even publishers of text books, not wishing to put in their manuals that Lake Glazier was the true source, sent out Mr. Hopewell Clarke, whose report (December, 1886) and map were unfavorable to Mr. Glazier.†

The Minnesota Legislature, to which the Historical Society had appealed, likewise intervened. By an act of April 24, 1889, it forbade giving upon school maps, to Elk Lake, any other name; and by another act (1891), it constituted the re-

*Among other maps, the *Military Map* published in 1855-6, under direction of Lieut. G. K. Warren. *Elk Lake* appears upon the map in Stieler's Atlas.

†Mr. Brower cites Mr. Hopewell Clarke as the fifth explorer having made authentic discoveries of the region of the sources: 1. Schoolcraft; 2. Nicollet; 3. Chambers; 4. Hall; 5. Hopewell Clarke. Mr. Brower himself is the sixth.

gion of the sources a state park, *The Itasca State Park*, with an area of 35 square miles.

The same year the Historical Society enlisted Mr. J. V. Brower, who had begun, in 1888, an extended and elaborate amateur exploration in the region of the sources and a discussion of the subject with Mr. Glazier through the press, to prepare a detailed topographic and hydrographic map of the Itasca basin. The Governor appointed Mr. Brower superintendent of the park.

The study of the district occupied several expeditions: one in October and November, 1888; three in 1889; three in 1891; in all consuming more than five months. The report of Mr. Brower, presented in 1892 and printed in 1893, with photographic views and maps, is the result of that study. It carries these conclusions, among others:

7. *Elk lake* is not the source of the Mississippi.

9. The true source, today, is the *Greater Ultimate Reservoir*, the grand uppermost reservoir, from which springs the greater part of the waters that feed lake Itasca.

It is according to this report, that we describe the region of the sources.

VI.

Time was, when the entire space designated by Mr. Brower under the name Itasca Basin, was a single lake. It is a depression in the earth's crust, eight kilometers broad, and about eleven kilometers long from south to north, limited on the south by an ancient moraine, and bounded along the sides by the *Heights of Land*. The waters have worn a channel toward the north, and the basin, of which the bottom slopes much toward the north, has partly emptied itself, leaving the small lakes in the lowest spots.*

The prime reservoirs of the river are at the southwesterly extremity of this basin, in the western valley, designated *Nicollet's Valley*, which is wooded and marshy.

At an altitude of 1,558 feet, are found, in the first little basin, the lake *Hernando de Soto*, 20 feet deep, situated in 47°

*Attention is here directed to a reproduction, inserted in the original pamphlet, of the map which accompanies Mr. Brower's report, and which bears the title: *Detailed hydrographic and topographic chart of the Itasca State Park at the Source of the Mississippi River, State of Minnesota, U. S. A., prepared under authority of an Act of the Legislature, approved April 20th 1891; by J. V. Brower, Commissioner, 1892.*

8' 50" north latitude, and 95° 12' 48" longitude west from Greenwich (geographical position of *Brower's Island* in this lake), and, immediately to the north, the small *Lake Morrison*, 40 feet deep. Both lakes have very winding banks. The heights of land envelop them, and at the south side rise above them by about 200 feet. The summit of the height of land rises to an elevation of 1,750 feet. The surface is wooded with pines, and the brush is almost impenetrable. Some other very small lakes keep them company, *Mikenna Lake*, *Little Elk lake*, etc. The *Triplet lakes*, so called because they number three, lie to the north of Morrison Lake, at one to two feet lower level, in one of the two narrow ravines that lead from the first basin into the second.

The second little basin is that of the small *Lake Whipple* and of *Floating Moss lake*, the altitudes of which are 1,551 and 1,548 feet, respectively, and which communicate by a brook broken by a fall.

These two basins are together three miles in length, from south to north. They are isolated; but their waters filter through their sandy beds, unmistakably feeding the Mississippi.

In a ravine, situated toward the northwest, and hardly 250 meters from Floating Moss lake, there springs from a bog, at an altitude of 1,535 feet, a brook, which, about one kilometer farther on, swiftly discharges into a very small lake, very nearly circular in shape, *Upper Nicollet lake*, the highest one of a series on Nicollet's map, lying at an altitude of 1,496 feet. This again is a small isolated basin.

From the foot of the parapet of earth retaining this lake on its westerly side, and which borders a deep ravine, rise several springs, named *Nicollet Springs*, starting from which, flows, above ground and uninterruptedly, the water course which is the origin of the great river. The water of these springs, lying at an altitude of 1,476 feet, flows almost immediately into *Nicollet's Middle lake*, 25 feet deep, small and oval. From the westerly bank of this lake runs a brook 9 feet wide, which passes through the small *Nicollet's Lower lake*. Thence, increased by several other springs and brooks (*Demaray creek*, 5,950 feet long, *Howard creek*, 3,739 feet long, etc.), it winds along a flat and wet bottom land, in the midst of a pine forest,

until it reaches the southern extremity of the western arm of Lake Itasca, where it loses itself. Nicollet discovered this stream, the most considerable of those flowing into lake Itasca.

This last lake lies at an altitude of 1,457 feet (443 meters), being 30 meters lower than lake Hernando de Soto. From Nicollet Springs to the lake, the distance is barely more than one mile.

At a half mile to the northeast from the entrance of the Mississippi, the lake receives, through a narrow channel, called *Chambers' creek* (from the name of the American who first explored it, in 1872), the water of Elk lake. The altitude of this lake is 1,458 feet, and its area 294 acres. It is fed by five small brooks, and by some apparently isolated lakes, *Deer Park lake*, *Clarke lake*, *Allen lake*, etc., but whose basin, completely covered by thick woods, does not extend as far southward as that of lakes Hernando de Soto and Morrison. To two other small isolated lakes, south of this small basin, the Americans have given the French names *Groseilliers* and *Radisson*. The whole forms the Central, or *Elk lake valley*.

The eastern arm of lake Itasca likewise receives the waters of a long valley parallel to that in which flow the waters of the Mississippi; it is named *Mary Valley*. At the south, in nearly the same latitude as the Triplet lakes, and at an elevation of 1,515 feet, are *Josephine lake*, and, lower down, *Danger lake*, the upper reservoirs of that branch. They have no apparent outlets, nor have the *Twin lakes*, small lakes lying a little farther north. It is only by a small creek flowing into *Mary lake* (altitude 1,488 feet) that the continuous course of this stream begins, which, from Mary lake, empties into the eastern arm of lake Itasca.

Lake Itasca, whose area is 1,130 acres, is composed of three arms, at whose junction is found the small *Schoolcraft island* (geographical position, lat. $47^{\circ} 13' 10''$; long. west from Greenwich, $95^{\circ} 12'$). Its greatest length is about six kilometers; and the mean breadth of its arms is about 500 meters. All around it stretch forests of white, red, and jack pines, cedar, oak, maple, and a profusion of willows. The whole region, upon the elevations, as well as in the valleys or ravines, is also covered with woods. It is everywhere rough and savage, marshy in the depressions. The cold is severe. The mean

temperature of the year is no higher than 40° Fahrenheit. In winter, it drops to 40° below zero.

The Mississippi flows out of the end of the northern arm of lake Itasca. It is there a stream fifty feet broad and three or four feet deep, with low and muddy banks.

Starting from this point, its course has long been known with sufficient exactness. The Mississippi flows northward, winding along the foot of the height of land that separates it from the basin of the Red river of the North. Then it turns east, and flows through or forms lakes *Bemidji*, *Cass*, *Winnibigoshish*, each larger than the preceding.

A little before entering lake Bemidji, it receives from the south the *Yellow Head river*, which brings to it the tribute of several small lakes. Into Cass lake empties the *Turtle river*, which comes from the north, also carrying the tribute of several lakes, notably that of *Turtle lake*, which almost touches a small lake tributary to the Red river, and which has sometimes been mistaken for the source of that river, because it lies at the northwest extremity of the basin. Beyond lake Winnibigoshish the Mississippi receives, by the *Leech Lake river*, the waters of that lake, the largest of the region, and begins to bend toward the south. Beginning at *Grand Rapids*, and particularly at the confluence of the *Swan river*, at 1,290 feet above the sea, the general course of the Mississippi river is southward. We need not follow farther the stream, to which Mr. Brower ascribes, from the south bank of lake Hernando de Soto to the Gulf of Mexico, a total length of 2,555 miles.

The number of lakes in the upper basin, up to and including Itasca, shown upon Mr. Brower's map, is about seventy. From the head waters down to Grand Rapids, several hundreds are scattered upon a surface of about 8,500 square kilometers.

VII.

The railway now penetrates only to the entrance to this region.* When it shall cross the region, the traveller will probably have views similar to those which I have enjoyed, in going from Winnipeg to Fort William. When the *Itasca State Park*, which has a length of seven miles and a breadth

*The Duluth & Winnipeg Railroad runs to Lake Winnibigoshish.

of about five miles, shall be a little more improved, with roads cut through the woods, boats upon the lakes, and hotels upon their banks, tourists will go there to breathe the bracing air of the pine forest, to canoe, and to fish. Without presenting such grand views as the Yellowstone Park or the Colorado, the sources of the Mississippi, still wild and solitary, will become a pleasure spot, and will be reckoned among the renowned summer resorts of America.

As to scientific debate, it is terminated. The exploration of Mr. Brower leaves no further room for controversy. Mr. Glazier's adventure will have had the merit of hastening the conclusion, and of giving to geography a definite map of the cradle of one of the great rivers of the world. In this respect, the social sciences may envy the natural sciences. Would it not be a happy condition, if they could, in the same way, close discussions, and clear up public opinion by actual evidence, without leaving obscure corners, where error may survive, and whence it may sally forth to resume the offensive?





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