

Frontier Vacation

EDITED BY JUNE DRENNING HOLMQUIST

MINNESOTA IN 1844 was hardly a usual spot for a summer vacation. Much of the area still belonged legally to the war-like Sioux. Pine and prairie stretched for mile upon uninterrupted mile, and settlements were exceedingly few and far between. Nevertheless, in the summer of that year Joseph Le Conte and his cousin John, both of whom later became distinguished scientists, elected to spend their vacation on Minnesota's now famous lakes and rivers.¹

Joseph Le Conte's Early Geological Excursion

Joseph at the time was only twenty-one, and John was two years younger. The young men seem to have started out more or less at random to see the Northwest, with no thought of what such a journey entailed. Le Conte remarks in his *Autobiography*, "If we had known our course, we certainly would have carried a very different kind of luggage, for we were afterward greatly hampered by our trunks." Crossing Lake Superior in a canoe, paddling down the Mississippi River, portaging, and camping out did, indeed, call for "a different kind of luggage." Further evidence that the young men were not properly prepared for the adventure is Le Conte's statement that "this kind of life was, of course, hard on trousers." By the time they reached Eagle Point on Lake Superior "John's were becoming disreputable—they had to be patched. We had nothing but strong bedticking; John covered his whole seat with a patch nearly a foot square. It is easy to imagine his picturesque appearance."²

Joseph Le Conte was born on his father's Georgia plantation in 1823. He was graduated from the University of Georgia in 1841, and two years later entered the College of Physicians and Surgeons in New York. It was between semesters there that he made the trip to Minnesota. He was graduated in 1845 and for the next two years traveled about, living the

¹ For brief sketches of the two men, see the *Dictionary of American Biography*, 11:89, 90 (New York, 1933).

² William D. Armes, ed., *Autobiography of Joseph Le Conte*, 63, 72 (New York, 1903). Permission to publish material in the present narrative which is in some respects identical with the printed *Autobiography* has been received from the publisher, Appleton-Century-Crofts, Inc.

life of a country gentleman. In 1847 he married and for a time settled in Macon, Georgia, where he practiced medicine. Dissatisfied with a doctor's life, he returned to school and for the next two years studied under the famous geologist Louis Agassiz at Harvard University. After receiving his doctor's degree there, he taught in Georgia and South Carolina before joining the faculty of the newly established University of California at Berkeley in 1869.

Le Conte is said to have been a successful teacher, admired and respected by his students. His published works in the fields of medicine and geology are both varied and numerous. All of his life, Le Conte loved the out-of-doors, and he died, as he probably would have wished, on a trip into the Yosemite.

Evidence that memories of Le Conte's frontier vacation in the Minnesota country remained fresh through the years is to be found in the narrative that follows. It was written for presentation on December 30, 1899, before the Cordilleran section of the Geological Society of America—a group organized that year by about a dozen Pacific Coast geologists who could not attend regular meetings of their national professional organization because they lived at a "great distance . . . from the usual places of meeting."³ Le Conte himself, who was the first chairman of the group, sent a typewritten copy of his paper to the Minnesota Historical Society.⁴ Although this account of a well-known scientist's youthful Minnesota excursion duplicates in part the material contained in Chapter 3 of his Autobiography, it has never before been published in its present form. Since Le Conte was writing from memory, it is possible that some of the individuals mentioned in the manuscript are misnamed. In most cases, however, the editor has been able to identify people who figure in the narrative.

THIS INFORMAL and unpretentious narrative can hardly be properly entitled "a geological excursion." It is rather an excursion undertaken for pleasure and adventure by a lover and observer of nature, and an embryo geologist. Its chief interest lies, not in the value of the geological observations, but rather in the picture it gives of the conditions of the country passed through fifty-five years ago. To me it is interesting, also, as having turned my scientific interest for the first time chiefly in the direction of geology.

³ *Science*, 11:219, 221 (February 9, 1900).

⁴ It is likely that Le Conte sent his manuscript to Dr. Warren Upham, a fellow geologist, who was secretary of the Minnesota Historical Society at the turn of the century.

I have called it an excursion of a lover and observer of nature. I have been such from early boyhood, partly because I was reared in the country — (I never saw a town until I was fifteen), partly by inheritance, (for several generations the Le Contes have been scientific men) — but mainly through the example of my father who was deeply interested in several departments of science, especially chemistry and botany.⁵ Perhaps the observations of such a one in a country, then unknown and almost uninhabited, may be of some interest, at least from a historical point of view.

During the summer of 1844, in the interval between two courses of medical lectures in New York, in company with my cousin, John L. Le Conte, afterwards the distinguished entomologist, I started on a trip with no very definite object in view, nor even knowing where we would fetch up, but intent only on having a good time and seeing as much as possible of what was then called the far northwest, the "*Ultima Thule*" of the Eastern imagination. I was then twenty-one and my cousin nineteen. During the trip I kept a journal which I illustrated by many humorous sketches of incidents on the way. For many years afterward my children were fond of hearing me read from this journal, so that by frequent repetition the minutest incidents were indelibly impressed on my memory. This journal, along with much else of more importance, was destroyed by Sherman's army. But although it was burned nearly thirty-five years ago, I can still repeat the whole story. I shall confine myself, however, chiefly, though not entirely, to the geological observations made at that time.

We started about the middle of May. I pass over, with bare mention, . . . our stay of a week at Niagara mainly to enjoy the grandeur of these great falls, but also to examine the structure of the rocks, the cause of the recession of the falls and the formation of the gorge. . . . I mention our stay at Detroit, a town at that time of about eight thousand inhabitants, only because it was information received there from friends, especially from Bishop [Samuel A.] McCoskry that determined definitely our route. We would go to Lake Superior and thence, if possible, to the head waters of the Mississippi, and down that river to the mouth of the St. Peter's (now called Minnesota) river; thence up the St. Peter's as far as possible, then back to the Mississippi and down that river to return by the Ohio. This plan, with the exception of the trip up the Minnesota (of which more hereafter) we carried out completely. Taking letters, therefore, from Bishop McCoskry (who had himself been once a soldier) to

⁵ For a short account of Louis Le Conte, a learned and remarkable man, and of Joseph's boyhood in Georgia, see the latter's *Autobiography*, 4-36.

the officers at Mackinaw [*Mackinac*], we made this place our first objective point. We took steamer, therefore, for Mackinaw, where our real camping trip would commence.

I shall not easily forget our landing at Mackinaw. The steamer was the regular packet boat from Detroit, through Lake Huron, Straits of Mackinaw, to Lake Michigan, and down that lake to Chicago, then a thriving town of five thousand inhabitants. The steamer did not make landing at Mackinaw, but sent us ashore and passed on, leaving us on a sand beach, shivering in the cold at four A.M. We looked about for some one to direct us to a lodging house, but it is scarcely daybreak and no one is yet stirring. "What are these strange-looking canoes lying bottom up on the beach?" I soon recognized them as Indian birch-bark canoes. There were six or eight of them. I had heard of these, had seen pictures of them, but had never seen one before. We shall probably have to use one on our trip and were therefore very curious to examine them. While walking about them, admiring their lightness and grace, we each of us tapped them gently with the knuckle. Immediately there arose from beneath such a hubbub of discordant voices of men, women, and children, that we beat a hasty retreat, each laughing at the other for being startled. There was a whole family of Indians asleep under each canoe. This was our first experience of the Chippewas, among whom we afterward lived for some three weeks. Meanwhile, the little village is awakening. On inquiry we were directed to [George] Lasl[e]y's as the only hotel in the place.⁶ This was a mere tumble-down shanty of rough unpainted boards, apparently in the last stages of dilapidation. Our host, a huge, fat, tumble-down looking person himself, greeted us indifferently, but showed us into a room scrupulously clean and tidy, and soon called us to a breakfast fit for a king. I never sat down to a better table. I learned afterwards that Lasly was celebrated in all that region for his fine table. After breakfast we walked to the Fort [*Mackinac*] and delivered our letters to Capt. [Martin] Scott and Dr. [Levi H.] Holden.⁷

The officers of the Fort were very kind to us. Dr. Holden, the surgeon of the Fort, took us over the island and showed us all its remarkable features, especially Sugar-loaf rock and Arched rock. Sugar-loaf is an isolated, sharply conical rock, seventy feet high and only twenty or thirty feet at base. Arched rock is a wall forty feet high and fifty feet wide,

⁶ The hotel owner was a trader at Mackinac mentioned by Samuel Abbott in a letter to Ramsay Crooks, May 21, 1844. See *Calendar of the American Fur Company's Papers*, 2:1371 (Washington, 1945).

⁷ Le Conte undoubtedly refers to Captain Martin Scott, commandant at Fort Snelling from July 15 to August 20, 1837. He was a famous hunter and a dead shot. See J. Fletcher Williams, "Memoir of Capt. Martin Scott," in *Minnesota Historical Collections*, 3:180-187; and Marcus L. Hansen, *Old Fort Snelling, 1819-1858*, 59-62 (Iowa City, 1919).

broken through so as to form a sort of triumphal arch, like the Washington arch in New York. I, at that time, looked upon these as curiosities, with little thought as to their origin, but I have thought much about this since. Doubtless their explanation has already been given, probably in the Michigan Geological Survey, but I have not seen it. As this whole region was enveloped in the ice sheet which could not produce forms like these, it is evident that they have been formed since that time. I now regard them as outstanding remnants of an old shore cliff receding under the action of the waves at a time when the lakes were higher than now.⁸ I spoke to our host Lasly about these remarkable rocks. He remarked: "Yes, people talk of them as worth seeing; but for my part, I'd much rather see a dog-fight."

I was greatly struck with the character of the soil here. Boulders and cobblestones are so thickly scattered on surface and in the soil that there is hardly earth enough to constitute a soil. I thought little about this then, for [Louis] Agassiz had not yet brought over to America his ideas about an ice-sheet age.

Captain John [*sic*] Scott, who had the reputation of being the greatest hunter and deadliest shot in the army, was a stout, bluff man, keen eager gray eye, fresh, ruddy complexion, and quick, alert manner. He was every inch a soldier and everything about the Fort showed it, perfect neatness and orderliness everywhere, and perfect discipline of the soldiers. He was also a great hunter and ever[y]thing about his house showed it. The walls were decorated with every conceivable form of weapons of war and of chase—guns and pistols, bows and arrows, swords and daggers, and he was equally skillful in the use of them all. Also, on every side trophies of the chase—elk horns, buffalo heads, bear-skin rugs, and snarling heads of panthers, etc. I was greatly entertained by his vivid stories of adventure, for I, too, was fond of hunting and had some reputation in that line.

After three or four days of enjoyment of hospitalities here, we left our friends with real regret. There is no way of getting to Lake Superior except by canoe or rowboat. The distance is about one hundred miles and can not be accomplished in one day. We will have to camp out at least one night. We therefore bought blankets and buffalo robes. The latter were so abundant at that time that the best were only a dollar. We started in high spirits at nine A.M. and camped that night on an island in the middle of the strait, perhaps St. Joseph's. It was our first camp, and as

⁸ The area was first surveyed by Dr. Douglass Houghton, early Michigan state geologist, who was with Henry R. Schoolcraft when he discovered Lake Itasca in 1832. Le Conte's theory concerning the formation of these rocks was substantially correct. See George N. Fuller, ed.; *Geological Reports of Douglass Houghton*, 464-470, 588 (Lansing, 1928).

first camps usually are, a most uncomfortable one. The early part of the night was still and hot, and mosquito[e]s very bad. About midnight the wind sprung up and blew furiously and freezing cold. Unable to sleep, we started again at daybreak with the wind in our faces, and suffered intensely with cold. We wrapped our blankets about us, but the wind seemed to pass through as if they were gauze. Arrived at the Sault St[e]. Marie about ten A.M. Many Indians, bucks and squaws, stalked about the landing, with blankets wrapped about them, gravely regarding us. So we, too, walked to the Fort [Brady], with blankets about us in savage dignity.⁹ We delivered letters from Captain Scott and were cordially invited to join their mess.

We stayed two days, waiting for the sailing of the schooner that should take us on, as we then supposed, to La Pointe. While standing on the water's edge and watching the Indians "shooting the rapids," and admiring the skill with which they managed their frail canoes, we fell in, quite unexpectedly, with Colonel [Charles H.] Gratiot, of St. Louis, who is taking out a party of Cornish miners to Kew[e]naw Point to work the copper mines there.¹⁰ This was the very first regular mining operation ever undertaken in these now celebrated mines, for the region was only opened that year to claims.¹¹ By invitation of Colonel Gratiot, we joined the party as a mere matter of adventure. Besides ourselves the party consisted of Colonel Gratiot, his lieutenant or boss, Mr. Hempstead, and ten Cornish miners, fourteen in all. We took passage on a schooner, Captain [B. A.] Stannard, Master, and landed at Eagle Harbor, near the middle of June. I bought a tent from Gratiot and camped here with him for three weeks.

Our camp here was a most delightful one. . . . I examined the mode of occurrence of the copper, but could make little of it; partly on account of my ignorance, but mainly because the mines were not yet well opened. They were waiting the arrival of machinery. I saw, however, some specimens of native copper beautifully veined with silver. . . .

I have already said that my companion, John L. Le Conte, became later distinguished as an entomologist. Even at nineteen his knowledge of coleoptors was surprising. He had inherited the taste and absorbed much

⁹ Fort Brady was established in 1822 and named for Colonel Hugh Brady. It existed until after World War II, when the buildings were taken over by the Michigan College of Mining and Technology. See "Fort Brady," in *Michigan History*, 30:131 (January-March, 1946); Charlotte T. Hamilton, "Historic Landmarks of the Sault in 1914," in *Michigan History*, 30:740 (October-December, 1946); and Emil Lorch, "Some Notes on the Restoration of Early Buildings," in *Michigan History*, 31:311 (September, 1947).

¹⁰ Gratiot was one of the trustees of the Lake Superior Copper Company, later the Phoenix Copper Company. See *History of the Upper Peninsula of Michigan*, 334 (Chicago, 1883).

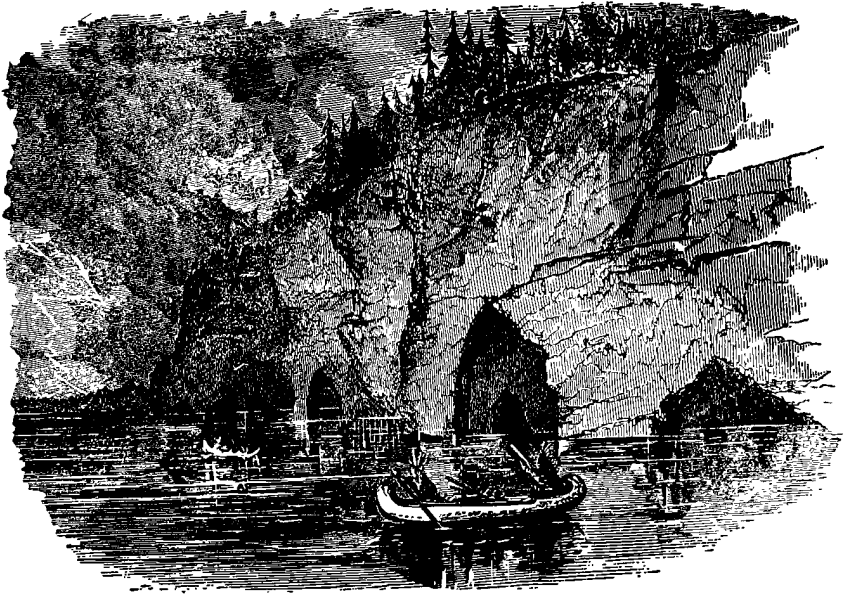
¹¹ [J. D.] Whitney and [J. W.] Foster, *Metallic Wealth*, p. 249 [author's note].

knowledge of insects from his father, Major [John E.] Le Conte. He had collected insects from time to time as opportunity occurred all along our way. But here there was an opportunity such as seldom occurs. Every morning when we got up the white sandy beach was blackened with the bodies of insects drowned in the lake and cast up by the waves during the night. These insects were mainly beetles and ants. He gathered in a few days as many species as he could have collected in as many months in roaming over the country. Digging into the sand we found layer on layer of insect remains. Geologists will remember a similar occurrence of insects in miocene fresh water deposit at Oeningen, in Switzerland and oligocene at Florissant, Colorado. Here we saw how such deposits are made. In the dusk of the evening, beetles essaying to fly over the lake, are beaten down by the winds and drowned. Also beetles and ants crawling near the margin of the lake are carried by the waves and drowned. Their floating bodies are then carried by waves into the harbor and find their final resting place on the beach where the prevailing winds naturally cast them. . . .

We lived well and even luxuriously while camped here. There was an abundance of brook-trout in the little stream, and white fish without limit in the lake. We had the best of opportunities of comparing these two delicacies. After long hesitation, I declared in favor of the white fish. But it must be white fish from Lake Superior and not from any other or lower lake. From time to time I borrowed Hempstead's gun and shot grouse and squirrels. These also gave pleasant variety to our too slender larder. We had still other recreations. Colonel Gratiot had a small row-boat which we used on the bay and sometimes on the lake. Again I was an exceptionally expert swimmer. I swam every day in the little stream, the temperature of which is delicious. I tried it once in the lake, but only once, for the water is intensely cold, about 40 degrees. . . .

Soon after arriving here Gratiot began to make permanent settlement by building log-cabins. I, too, took my axe and helped to build the first log-cabin ever built in Eagle Harbor. Ten years later (1854) while I was professor of geology in the University of Georgia, Athens, Georgia, I received a letter inquiring for the exact date of our arrival and the date of the finishing of the first log-cabin. As I had kept a journal, I easily furnished the required dates. . . .

According to previous arrangement, Captain Stannard called for us on his next trip westward. We bid a regretful farewell to our friends at Eagle Harbor and took ship for La Pointe. We left on the 3rd of July, for I remember well that we missed the celebration of the glorious Fourth by being on shipboard. As we approached La Pointe, I saw a most



CAVES AND ARCHES ON LAKE SUPERIOR

[From Charles Lanman, *Adventures in the Wilds of the United States*,
1:104 (Philadelphia, 1856).]

magnificent mirage, by far the finest I ever saw. It was early in the morning, the sun just rising. We first saw the tree-tops, then the trees, then the land, and then the reflection of all these in the placid surface of the lake. Nothing could be more real, and yet the Captain told us it was all "loom" or mirage. We could hardly believe it. Presently appeared the real trees with their tops interlocked with the tops of the reflected loom-trees. Then the loom rose higher and higher and passed away, while the real land and reflection of forest and land in the lake successively appeared. At one time there was a perfect quadruplication of land and forest. It is needless to say that the phenomenon is due to the refraction of a dense layer of air lying on the cold surface of the lake.

La Pointe was at that time only an Indian and American Fur Company agency. It is situated on the largest and southernmost Island of the Apostle group, Madeline. It is still, I believe, but an inconsiderable town. At the time of my visit, it contained but two white men, viz.: William [*sic*] Oakes, the Indian agent, and Dr. [Charles W. W.] Borup, the Fur Company agent.¹² In addition there were about two hundred or three

¹²The reference is to Charles H. Oakes, who was with Borup at La Pointe in 1844. He is mentioned in a letter from Borup to Crooks, November 26, 1844, listed in the

hundred Indians. Mr. Oakes, as is common with Indian agents, had married a half-breed woman and (but this not so common) had two rather pretty quadroon daughters who greatly enlivened our stay here. We stayed at La Pointe two or three days in order to make preparation for a long camping trip. One of these days was Sunday. I was greatly interested in the religious notions of these semi-Christianized Indians. They attended very devoutly the Christian service in the morning and then in the afternoon they had a grand Indian festival and heathenish dance. I attended and was greatly interested in both, especially the latter. . . .¹³

We hired a large canoe, twenty-four feet long, and two guides from Dr. Borup, for forty days and paid him. We started about the 8th. Our provisions and luggage are all aboard. As I raised my foot to step into the canoe, the guide Robindeau, seized me by the ankle and said, "No, must take off boots." We therefore put on moccasins which we had had made for this purpose, and wore nothing else for three weeks. That morning's voyage among the Apostle isles was a continual delight. We were all the time apparently in the midst of a beautiful little lake surrounded by the most picturesque shores, but ever opening in front and closing up behind, the scene shifting at every step.

The Apostle islands, as I saw at once, are undoubtedly mere remnants of an eroded plateau of horizontal sandstone. The erosion may have been partly glacial, but of this I knew nothing at that time — and certainly partly wave action, as was evident farther on. They consist of heavily bedded horizontal sandstones with almost vertical cliffs, heavily wooded atop. After passing through the islands, we paddled close along the south shore almost under the shadow of a vertical cliff of sandstone fifty feet high. In places this was undermined by the waves and formed caves whose overhanging roofs doubtless fell in from time to time and thus the shore line receded. In one place, for the distance of several hundred yards, the waves had eaten under the cliff of horizontal sandstones several hundred feet, forming immense caves, with table-rock roof supported by pillars of sandstone. In our canoe we went at least two hundred feet under the cliff and looked out through the pillars and on to the boundless lake. Among these huge pillars and along these low arches and gloomy corridors, the waves dashed with a sound like thunder. Nothing could illustrate more impressively the power of waves. I believe this was the first observation of these remarkable phenomena. I used them to

Calendar of the American Fur Company's Papers, 2:1402. In June, 1852, Borup and Oakes formed a partnership and established one of the earliest banks in St. Paul. See Sydney A. Patchin, "The Development of Banking in Minnesota," in *Minnesota History*, 2:124 (August, 1917).

¹³ For a more detailed description of the festival see Le Conte's *Autobiography*, 74.

illustrate wave action in my geological lectures as early as 1852, long before they were observed and described by others. . . .

We camped two nights on this south shore and on the third day nooned at the mouth of the Bois Brulé river. The guides told us that up that river, then by easy portage over a low pass into the St. Croix river and down the St. Croix to the Mississippi, was the most direct route to Fort Snelling, and that by that route they would return.¹⁴ I did not know then, as I know now, that this was an old outlet of Lake Superior into the Mississippi. It still forms the most natural and easiest route to travel.

In the afternoon we decided to strike straight across the north shore which could be dimly seen about twenty miles distant. We wished to see something of this shore also. The men demurred a little. A sudden squall might be dangerous. But as the weather was perfect, they struck out boldly and vigorously, I also helping with an extra paddle, and reached north shore in four hours. This we found quite different from the other shore. All rocks were igneous and the beaches pebbly instead of sandy. We drew up our canoe that night on a beautiful pebble beach. As usual the men proceeded at once to pitch our tent. To our astonishment they selected a beach of smooth pebbles of size of a hickory nut. On our remonstrating, they assured us that round pebbles make the best kind of bed. And so indeed we found it. The pebbles yield to every motion and mould themselves perfectly to the form. Sand, on the contrary, which one might suppose would make an ideal bed, is really, as every camper knows, the very worst possible material.

Next day we skirted along the north shore to the extreme western end of the Lake and nooned there. We drew up our canoe on the very spot where Duluth now stands, but at that time there was not a white man within a hundred miles. Duluth was not founded for many years after this.¹⁵

A glance at a good map will show that at this extreme western end of the Lake a long narrow sand spit six or seven miles long, one hundred feet wide, and two or three feet high, is thrown across the mouth of the St. Louis river, connected with the land on the north where we landed (and therefore now called Minnesota Point) separating the shallow bay of St. Louis from the Lake proper, except at the south end where there

¹⁴ Early travelers called this river, now known as the Brule, the Bois Brulé, or Burntwood River. It may have been named for Etienne Brulé, one of the earliest explorers of Lake Superior. The Brule-St. Croix portage was marked in 1934 by the Jean Claude Allouez chapter of the Daughters of the American Revolution. See Charles E. Brown, "The Brulé-St. Croix Portage Trail," in the *Wisconsin Archeologist*, 14:34 (September, 1934) for the exact location of the portage.

¹⁵ For information on the settlement of Duluth, see John R. Carey, "History of Duluth and of St. Louis County to the Year 1870," in *Minnesota Historical Collections*, 9:241-290.

is an opening for the water of the St. Louis river. Sand brought down by the St. Louis has shoaled the wide estuary at its mouth, and waves of the lake have beaten up the sand and formed the spit. It is a phenomenon exactly like the long sand-spits along the South Atlantic and Gulf coast. Duluth is now situated at the junction of this sand-spit with the northern coast. The waters of the bay are warm, while those of the lake, separated only from fifty to one hundred feet, are intensely cold. I took a delicious swim in the bay just along what is now the water front of Duluth. We drew our canoe over the sand-spit into the bay and started up the river.

I can never forget the glory of that afternoon voyage up the St. Louis river. The afternoon was warm, the air still and languorous, the river wide, smooth as a mirror, and very tortuous. Indian lodges or clusters of lodges were perched on every high bluff and came in view at every turn of the river. At every bend, as we came in sight of a new lodge, we were saluted by the shrill halloo, with the hand vibrated over the mouth, characteristic of these Indians. Our men answered in similar style. I also essayed to answer, but never could quite succeed. We camped about ten miles up the river at Fond du Lac, an Indian village of from two hundred to three hundred Indians, and one white man, a Mr. Boilleau.¹⁶

Next morning we continued up the river to the head of canoe navigation and camped at the foot of the Falls or Dalles of the St. Louis river. Here begins a long portage of nine miles. We spent the rest of the day here, because it would take a full day's work to reach a good camping place. I took advantage of this stop to enjoy the most glorious swim I ever had. While I was stripping for the swim, some twenty Indians, men and boys, visited our camp. The river here is a roaring, foaming torrent, but I was an expert swimmer. I can judge, as the canoe men do, of the depth and character of the bottom by the surface-behavior of the current. The velocity cannot be less than from fifteen to twenty miles per hour. To misjudge might be dangerous. I plunged in and went down with dizzying speed, but safely, the Indians cheering and screaming with delight. I challenged them to join me in my sport, but none took me up. I climbed out, ran back, and plunged in again, laughing and shouting, and challenging them to join me, and swooped down, and so on repeatedly. It was great fun. Remember, I was only twenty-one. I know

¹⁶ Fond-du-Lac is now a considerable town of 7,000, built up on the iron industry [*author's note*].

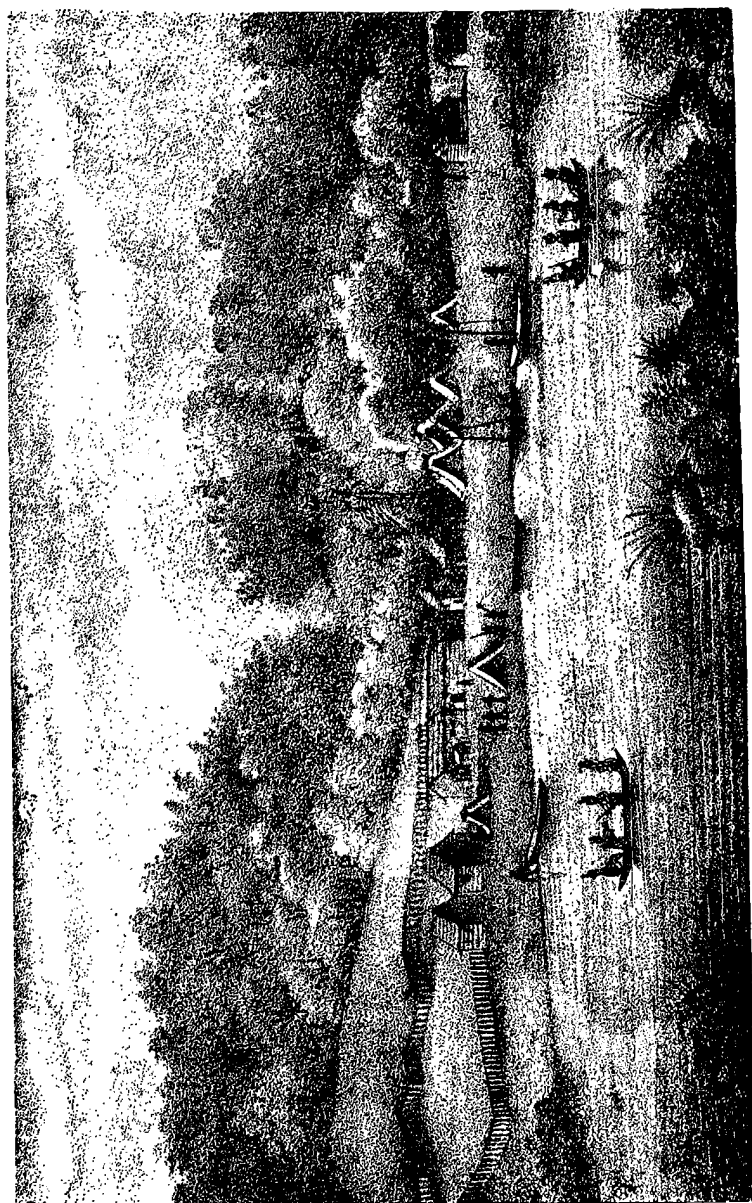
Fond du Lac is now a suburb of Duluth. In 1844 it was the site of an American Fur Company post. See Grace Lee Nute, "Posts in the Minnesota Fur-Trading Area," in *Minnesota History*, 11:359. "Boilleau" is probably Clement H. Beaulieu, a trader in the employ of the American Fur Company who was active in the region. He is mentioned in a letter from Borup to Crooks, June 15, 1844, listed in the *Calendar of the American Fur Company's Papers*, 2:1375.

there is not much geology in all this, but there is a great deal of human nature, and geologists are men, too.

The river to this point is a wide estuary nearly on a level with Lake Superior. Here it rises by a succession of cascades to a higher plateau. The portage is around these cascades. Early next morning the men commenced the Portage. I was greatly interested in observing the strength and endurance of these men as "beasts of burden." . . . I know of no beast of burden of equal size that could at all compare with these men in amount of work accomplished. They would take two hundred pounds on their backs and trot off with apparent ease, and during twelve hours, one-half the time they were thus loaded. Their manner of proceeding was as follows: a leather strap about eighteen feet long and an inch wide, except in the middle where it was three inches wide, was tied about each end of a trunk, say, and this was thrown over on the back so that the broad part of the strap rested across the upper part of the forehead. The, say, one hundred pounds of port or flour was put on top of this, and then, perhaps, twenty-five pounds of crackers, etc., making two hundred pounds. This was carried a mile and deposited, and the man returned for a second load. This second load was carried a mile beyond the first deposit, i.e., two miles, and the porter returned for the first deposit and carried it two miles, and so on until the camp, seven miles, was reached. Now the men returned back to the previous camp, seven miles, took up the canoe and carried it to camp. They walked that day thirty-five miles and half the time they were loaded with about two hundred pounds. My cousin and myself remained in our previous camp until the afternoon. I utilized the delay in taking another swim in the cascade. About three P.M. we started and walked to camp in good time, although the walking over stony ground in moccasins was at first very trying to our feet. Our camp was in a dense wood on the bank of a little brook. It was delightful.

Next day we finished the portage by noon. The day being cloudy, the mosquitos and brulos (so called on account of the burning sensation produced by their bites) were dreadful. We were compelled to wear veils drawn around the hat, over the face and shoulders, and stuffed in bosom, and gloves on the hands. This protected us from mosquitos, but those almost invisible pests, the brulos, would crawl under the sleeves, under the collar. But we must lift veils to eat: we were compelled to put our faces in the smoke of our camp-fire in order to do so.

Several Indians, men and women, making the same portage, overtook and passed us today. The men were in a state of naked dignity and unconscious innocency, except the narrow breech-cloth, but carried nothing



AMERICAN FUR COMPANY POST AT FOND DU LAC

[From Thomas L. McKenney, *Sketches of a Tour to the Lakes*, 276 (Baltimore, 1827).]

in their lordly hands but their bows and arrows. The women were clothed indeed and in their right mind, but bowed each beneath a heavy load. One of them carried the canoe on her head, bottom upward like an enormous scoop-bonnet.

In the afternoon, we went up several small rapids. We got out and walked while the men took the canoe up three dangerous places. I here observed beautiful examples of cleaved slates. Walking over these sharp knife edges in moccasins made us shrink at every step. These were the animike slates described by [Newton H.] Winchell many years afterwards.¹⁷ We took on board here two half-breeds, fine strapping fellows, on condition that they work their passage to Sandy Lake. This they did with a will. Four men chanting their boat songs and paddling in time! I really enjoyed their rude but rhythmic and inspiring music.

As we rose higher over repeated cascades, the country became more level, the river more tortuous and marshy, and the mosquitos more troublesome. This seems a good opportunity to describe our camp under these conditions of ascending cascades and of troublesome mosquitos.

As soon as we land, the canoe is unloaded, drawn up on land, turned bottom upwards and inspected with the greatest care. The least crack or bruise is carefully gummed, or, if necessary, patched. The canoe was then propped up a little on one side and used by the men for shelter during the night. They now pitched our tent and cooked our supper. The cooking was simply execrable. Chunks of mess pork and balls of the kneaded dough called boudin boiled together in the same kettle. No stomach but that of a voyageur could digest it. I tried it only once. I always took my own dough, kneaded it more thoroughly, wrapped it about a dry stick and baked it before the fire. The pork I sliced and broiled it on a sharpened stick. I have camped a great deal in my life, but never since have fared so badly as on this my first. Now and then, however, we got fish and game from the Indians. But our greatest ingenuity was displayed in protection from mosquitos. We had prepared for this before leaving La Pointe. A sheet was got just big enough to fill the tent as a roof three feet above the bed. Mosquito-netting was sewed to this all around. A hollow binding about the bottom was filled with duck shot. After the tent was pitched and the protective apparatus pinned up and the netting thrown up on the sheet, a handful of gun powder was placed in the middle of the bed, the tent door opened wide, the powder touched off, and the net put down. At bedtime we undressed and crept carefully under the net. The music of the mosquitos only lulled us to deeper slumber. . . .

¹⁷ In a *History of the Upper Mississippi Valley, Containing the Geology of the Upper Mississippi and Saint Louis Valleys*, 706 (Minneapolis, 1881).

After several days on the St. Louis river, we turned into a small branch — Savanna — coming from the west, very tortuous, very marshy, and here the mosquitos reached their acme. Earth was placed in the bottom of the canoe and a smudge fire was made in the canoe. The paddlers in front, and therefore unprotected by the smoke, were so covered with mosquitos that you could not tell the color of their hats or clothing. It was all a uniform gray. We sat all day with veiled faces and gloved hands. The next day we made portage over a low dry sandy ridge thickly sprinkled with granite boulders and overgrown with pine, into another small stream also called Savanna, and into Sandy Lake.¹⁸ We were now in the drainage basin of the Mississippi.

Sandy Lake is a beautiful sheet of water, very irregular in outline and very picturesque in scenery. We found here two white men, the first, except Boileau, we have seen since leaving La Pointe ten days ago. One was an Indian agent, the other a Methodist missionary, a Mr. [John ?] Clark. As usual, the Indian agent had an Indian wife and a houseful of half-breed children. As usual, the whites were surrounded with quite a village of Indians. We stayed here several days for rest for the men and for change of diet and necessary clothes-washing for ourselves. I utilized this stay by taking daily swims in the deliciously pleasant water of the Lake. An Indian boy, about fifteen, a slender, active fellow, went in with me. I amused myself trying to catch him. I could overtake him with the greatest ease, but just as I was about to lay hands on him, he would dive to the bottom where I could plainly see him propelling himself along the bottom, partly by his feet in swimming but mainly by applying his hand against the bottom. As soon as he emerged I was after him again, but he would escape in the same way; I tried in vain to lay hold of him. It was great sport.

Onward again, only two or three miles, and lo! the Great Mississippi. With a hurrah we rushed into its rapid current and were borne swiftly southward. Between this and the Falls of St. Anthony ten days and five hundred miles,¹⁹ there is little to say — only the dull monotony of boundless plains thickly sprinkled with little lakes (but even these we could not see from the river) the rock concealed beneath a thick covering of drift soil. Only a few incidents on the way are worthy of mention.

On the first day we nooned at an enormous Indian lodge, eighty feet

¹⁸ The portage trail was described and mapped by Irving H. Hart in 1926. In the summer of 1940 it was relocated, cleared, and marked by a group of sixty-five Eagle Scouts. See Hart, "The Old Savanna Portage," in *Minnesota History*, 8:117-139 (June, 1927); and a note, 22:438 (December, 1941).

¹⁹ The distance is only 252.1 miles. See Corps of Engineers, United States Army, *The Middle and Upper Mississippi River: Ohio River to Minneapolis*, 258-260 (Washington, 1935).

long, in which there dwelt an old chief with many wives, and I was told, seventy children. I didn't count them, but don't think the estimate extravagant.

We met on the way but one white man living entirely alone on the prairie; a tall, stalwart man deeply bronzed by exposure. It is needless to say how glad he was to see us and with what boundless hospitality he received us; for he had not seen a white face for six months.

But we saw very many Indians. We met them every day on the water in their canoes; we camped every night in the vicinity of their villages. We did so for two reasons—(1) they always select dry and healthy places, and (2) we often improved our larder by exchanging flour or port for ducks, venison, etc.

We made good time down stream. The current was mostly very even, though swift, but we passed over several rapids: one, Petite Chute [Little Falls], almost a perpendicular fall of two or three feet. I was much interested in watching the skill with which the guides steered the frail canoe over these rapids. In the case of Petite Chute, putting on their whole strength, they made the canoe actually leap and fall safely on the quiet water below. To relieve the monotony of the long voyage, I every day took my exercise by paddling with an extra paddle. From early boyhood I had been expert in the management of a canoe.

At last, near the end of July, we are nearing the Falls of St. Anthony. We reached it at noon and drew up our canoe on the very spot where Minneapolis now stands. There was, then, but one single log hut, occupied by one white man trading with the Indians. The town was not founded until five years after this.²⁰ We, however, wasted no thoughts about the future city, the seat now of a great university, but made portage around the falls, enjoying their grandeur on the way, and put into the gorge below, and were carried swiftly by the rapid current.

Even at that early time I saw plainly the cause of the Fall and formation of the gorge by recession of the fall exactly as in the case of Niagara. And I used this in connection with Niagara in illustration of the process in my geological lectures as early as 1852. As we rushed onward, sweeping close by one wall, I reached out my hand and dug out with my fingers the soft buff-colored sandstone by the handfulls. The cliff I saw was capped by a dark, hard limestone, which fell into the river at the falls as the underlying sandstone was undermined. In this case the fall is not vertical, only because the sandstone is too soft and the limestone cap too thin. The falling of fragments chokes the fall. It is now known

²⁰ Le Conte undoubtedly means St. Anthony, which was settled in 1849, and not Minneapolis.

—but not then—that the rocks here, both the St. Peter's sandstone and the overlying limestone, belong to the Trenton group.

It took only about one and a half hours to pass through the gorge eight miles and come out again on the plains at the mouth of the St. Peter's (Minnesota) river. We turned into the St. Peter's river and landed at the little village of St. Peters. Whether the present town of Mendota occupies the same position, I know not.²¹ Here we had an altercation with our guides. We had expected to continue our trip up the Minnesota river (then called St. Peter's) but the guides flatly refused. We had paid Dr. Borup for forty days; the men said Dr. Borup had engaged them for only twenty-eight days. We had already had them twenty-one days, and it would take them a week to get back. Besides, they said, it was not safe to travel in the country of the Sioux. It would be at the risk of their lives. We were therefore forced to abandon this part of the trip.²² Perhaps it was well that we did, for we learned afterwards that the Sioux were not to be trusted. We here took leave of our guides who, the same afternoon, started down the Mississippi with the intention of returning up the St. Croix over the pass into the Bois Brulé, thence to Lake Superior by the old outlet and back to La Pointe.

We were left here in doubt what to do next. But we had letters from Captain Scott and Bishop McCoskry to the officers of the Fort, especially to Dr. [George F.] Turner and Captain [Electus] Backus.²³ A boatman took us across the river to the foot of the cliff on which the Fort stands—for the St. Anthony escarpment crosses the Mississippi here—and we climbed the hill and delivered our letters. Dr. Turner told us the steamer from below would not be here yet for a week and invited us meanwhile to be his guests, which, of course, we gladly accepted.

The week spent here was one of the most delightful of my life. There were several other gentlemen here, guests of the officers. One of them, I remember, was [Henry] Placide, the noted actor.²⁴ I had heard him in New York in the play "London Assurance." I found him a cultivated gentleman.

The game season opened the day after we arrived. The prairies swarm with prairie-chickens. On the first day the officers brought in about a

²¹ St. Peter's was an early name for what is now the village of Mendota.

²² I ought to say that when we got back to New York, the Fur Company refunded the unused twenty-four dollars [*author's note*].

Le Conte's guides were Chippewa half-breeds, traditional enemies of the Sioux, and were probably loath to venture up the Minnesota River into the territory of their enemies.

²³ Backus was commandant at Fort Snelling during parts of the period from 1843 to 1845, and Turner was the post surgeon at the time of Le Conte's visit. Warren Upham, *Minnesota Biographies*, 26 (*Minnesota Historical Collections*, vol. 14).

²⁴ For a brief account of Placide's career, see *Dictionary of American Biography*, 14:644.

hundred. Dr. Turner is a famous shot; his share was over thirty. After our mess—pork and boudin, we enjoyed these immensely. I joined in the sport, but with only moderate success, for I had no gun of my own. I varied these amusements with long walks and an occasional drive. My favorite walk was to the Minnehaha Falls, two or three miles from the Fort and the favorite drive, Lake Harriet, six or seven miles. Minnehaha, made celebrated by Longfellow's "Hiawatha", but at that time, if I remember aright, known as "Little River Fall," is really a charming fall.²⁵ The river runs on the prairie-level until within a mile or two of the Mississippi, then drops vertically about seventy-five feet into a gorge which opens into the Mississippi gorge about five or six miles below the Falls of St. Anthony. Evidently, the river ran into the Mississippi in the ordinary way, until the St. Anthony Falls, by recession, had crossed its mouth. Then it fell into the gorge and began making its own gorge by recession. It has gone back one or two miles, while the great Fall has receded five to six miles.

Lake Harriet is a charming little lake—now, I believe, a favorite resort. At that time, however, its solitude was absolute and the beauty of the lake all the greater. The lake was then (I have not been there since) girded about with dense and exquisitely green forest which contrasted delightfully with the eternal yellow-brown of the prairies. The clear water, with lapping wavelets breaking on shores of cleanest pebbles, formed together a charming combination. It is needless to add that I enjoyed many a bath in this beautiful lake.

After a week's stay at Fort Snelling, the steamer arrived and we left. I have never seen my friends of the Fort since, but have often thought gratefully of them. A few miles below the St. Peter's river we passed a little village which I was told was called St. Paul. It contained about two hundred or three hundred people. The moon was bright and I sat on the upper deck while we passed through Lake Pepin and enjoyed the beautiful scenery of this part of the river. I remember no incident, worth relating, on the way, except the passing of Nauvoo and the fine Mormon temple situated there and plainly visible from the river. The popular feeling against the Mormons was at its height at that time. Joseph and Hiram Smith had been murdered in jail by a mob of masked men only about six weeks before. About two years after this the Mormons were driven out of Illinois, the temple burned, and under the leadership of Brigham Young, they sought refuge at Salt Lake.

²⁵ Little River Falls, Little Falls, and Brown's Falls were early names for Minnehaha Falls. See William W. Folwell, *A History of Minnesota*, 1:139, 232 (St. Paul, 1921), and S. W. Pond, Jr., *Two Volunteer Missionaries Among the Dakotas*, 46 (Boston, 1893).

We stopped at Galena for nearly a week, in order to examine the lead mines, the mode of occurrence and method of smelting. Here it was that I first became deeply interested in the subject of metalliferous veins and in the theory of their origin. I visited, also, the lead mines at Du Buque. Even at that early date and with very imperfect knowledge I could not but see that igneous agency had little to do with the formation of these veins. The ore seemed to have gathered out of the limestone into joints and fissures of all kinds, being apparently deposited from downward-percolating or horizontally-moving waters.

This is the end of my story. After a week here, we took steamer down the Mississippi and up the Ohio to Pittsburg[h], and rail back to New York, where we arrived about the twentieth of August, after an absence of more than three months. Then, of course, commenced another six months' grind of lectures and coaching, which was all the more wearisome for the free life of the previous summer.

SUMMER HOURS

DURING THE SUMMER, from June 1 to September 3, all departments of the Minnesota Historical Society except the museum will be closed on Saturdays. The museum, as usual, will be closed on Mondays and will be open on Saturdays from 8:30 A.M. to 5:00 P.M. and on Sundays from 2:00 to 5:00 P.M.

The entire Historical Building, including the museum, the library, the manuscript department, the newspaper room, and the picture department will be closed on July 4 and on Labor Day, September 3.



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