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THE PURPOSE OF THIS MAGAZINE

THE PALIMPSEST, issued monthly by the State Historical Society of Iowa, is devoted to the dissemination of Iowa History. Supplementing the other publications of this Society, it aims to present the materials of Iowa History in a form that is attractive and a style that is popular in the best sense—to the end that the story of our Commonwealth may be more widely read and cherished.

BENJ. F. SHAMBAUGH

Superintendent

THE MEANING OF PALIMPSESTS

In early times palimpsests were parchments or other materials from which one or more writings had been erased to give room for later records. But the erasures were not always complete; and so it became the fascinating task of scholars not only to translate the later records but also to reconstruct the original writings by deciphering the dim fragments of letters partly erased and partly covered by subsequent texts.

The history of Iowa may be likened to a palimpsest which holds the records of successive generations. To decipher these records of the past, reconstruct them, and tell the stories which they contain is the task of those who write history.

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THE PALIMPSEST

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Voyages of the Black Hawk

The winding Cedar River, with its beautifully wooded bluffs, its valley walls of towering limestone, and its constantly shifting sand-bars was once the scene of a vigorous river traffic. Weekly newspapers of Cedar Rapids, Vinton, and Waterloo, once contained lengthy articles under the heading of "Navigation" in which the editors made casual comments on the weather, the condition of the river, and many other facts and figures relating to the arrival of steamers and the kind and amount of their cargoes. Once the melodious whistle of the steamboat startled the denizens of the timber and brought the settlers to their cabin doors to catch a glimpse of a trim little steamer rounding a bend of the river on a clear summer morning. During the season of high water in the fall of 1858 and the summer of 1859, the steamboat Export, later christened the Black Hawk, plied the upper Cedar River regularly between Cedar

Rapids and Waterloo, carrying both freight and passengers.

In the decade before the Civil War, when the flood of immigration to Iowa was at its height, the problem of transportation became unusually prominent. Plank roads were built, railroads were projected everywhere, and many extravagant inducements were offered to develop the country. Nor were the inland waterways neglected. Development of river traffic was expected to be a boon to the farmers in marketing their produce. Several of the rivers of eastern Iowa were considered navigable and obstructions such as bridges and dams were prohibited by law.

For a number of years a steamboat operating on the Cedar River as far north as Cedar Rapids had been so successful financially that steamboat traffic on the upper portion of the river was proposed. By transshipping at the dam in Cedar Rapids and by working in conjunction with the Chicago, Iowa and Nebraska Railroad, which was then nearing Cedar Rapids, it was thought that goods could be distributed to north and northwest Iowa at a much cheaper price than if hauled overland.

Early in 1858, T. G. Isherwood set to work to build a steamboat at Cedar Rapids for Freeman Smith. Most of the lumber was sawed from logs cut in Beaver Park. This boat, originally called the *Valley Queen*, but later named the *Export*, was one hundred and twenty-five feet in length, had a beam of nine-

teen feet, and a hold two and one-half feet deep. The engine, equipped with a boiler twelve feet long containing twenty-four flues, two nine-inch cylinders, and with a stroke of three feet, developed sixty horse-power. The craft was propelled by a huge stern wheel twelve feet in diameter.

While the *Export* was being built many people thought that it would never be able to pass under the low bridge at Vinton. Notice was served on the Vinton Bridge Company "requiring that corporation either to construct a suitable draw or abate the bridge", a demand which was entirely proper since the legislature had declared the river to be navigable as far up as Waterloo.

The Export made a trial trip on September 30, 1858, with a number of local citizens on board who were much pleased with her performance. On the following day, laden with sixty tons of freight, she set out on her maiden voyage to Waterloo. At noon on October 5, 1858, the little boat steamed up to the landing at Vinton where she was received by a delegation of citizens and a crowd of shouting school children. An anvil salute, ably accompanied by a loud-mouthed cannon, served to emphasize the importance of the occasion. Indeed, the cannon was kept so busy saluting the little steamer that it burst one of its rings and rather seriously injured a young man who was standing near. After discharging part of her cargo, the Export passed under the bridge without difficulty and snorted away upstream toward her ultimate destination where she arrived three days later.

On the day following the arrival at Waterloo, Captain J. J. Snouffer gave a free excursion to all who cared to go. In the evening the citizens returned the compliment with a banquet at Capwell's Hall for the officers of the boat. Many were the speeches, toasts, responses, and congratulations. The good cheer seemed to induce visionary dreams of a custom-house at Waterloo, and direct trade relations with all European ports.

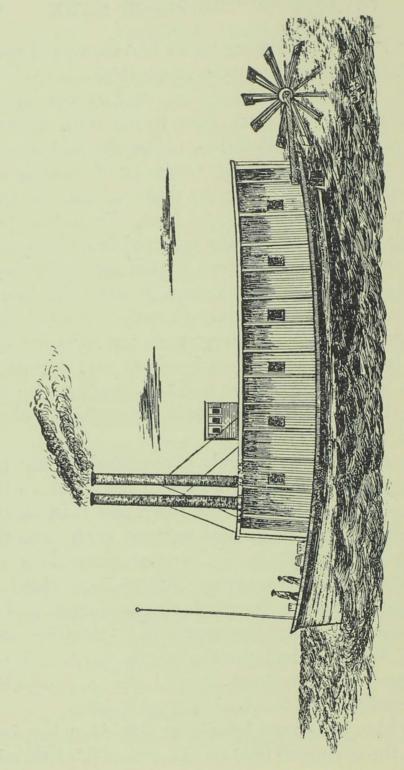
The news of the arrival of the Export excited the citizens of Cedar Falls almost as much as it did those at Waterloo. Although the power dam at Waterloo seemed an effectual bar to any further advance up the river, the people of Cedar Falls were ambitious to make their town the head of navigation. The Cedar River, being at that time charted as navigable to a point just below Cedar Falls, some enterprising citizens persuaded Captain Snouffer to make an effort to reach the desired point and even Cedar Falls if possible. They proposed to go to Waterloo and demolish the dam if necessary, claiming that if the river was actually navigable to a point farther upstream, the maintenance of the dam was certainly contrary to the law. The captain tried to proceed, but the boat was unable to reach the dam. Cedar Falls sorrowfully relinquished the pleasant thought of being a port of entry.

During October and November the papers spoke

of the Export in glowing terms and expressed much satisfaction with the trade which it had stimulated in the towns along its route. Before the season closed the Export made four round trips between Cedar Rapids and Waterloo. After the first voyage, which was delayed by the necessity of locating the main channel and removing obstructions, the boat ran regularly and made good time. From Waterloo to Cedar Rapids ordinarily required fourteen hours, while the fifty miles between Vinton and Cedar Rapids was negotiated downstream in about five hours. On November 20th Captain Snouffer declared that there was too much floating ice in the river for any more trips that season, so the boat was docked at Cedar Rapids for repairs and overhauling. On the whole the boat "did a paying business for the short time it was in service."

The Export was entirely remodelled during the winter, given a coat of paint, and fitted out on the inside with new quarters. A cabin was built on the deck. She appeared as neat as "any craft upon the large rivers." While the general dimensions remained the same, two rows of berths were added so as to accommodate twenty-four passengers and a crew of seven men. Meanwhile J. J. Snouffer and W. D. Watrous had purchased the boat and rechristened her the Black Hawk. She was capable of carrying over a hundred tons of freight.

This busy little craft left Cedar Rapids on her first trip in the spring of 1859 on the sixteenth of March.



THE BLACK HAWK

FROM A DRAWING BY GEORGE R. KNAPP IN 1904,

The crew was composed of J. J. Snouffer, master and clerk; W. D. Watrous, mate; Thomas Stanley, engineer; and W. Vance, pilot. Later George A. Ohler was hired as chief carpenter.

"The steamer Black Hawk", wrote the editor of the Vinton Eagle, on March 22, 1859, "made her first trip for the season to this place on Wednesday morning last, with a fine list of passengers and freight, and after a few hours' stay, left for Cedar Rapids, with a full cargo of grain, and at a speed of at least "ten knots" per hour."

Two young men were left behind at Vinton. "How they are to get to Cedar Rapids, unless they await the return of the boat is a question yet to be decided," according to the newspaper. "The roads are in such bad condition that no kind of vehicle can be got through." A significant commentary on the need of river transportation.

It was reported that enough freight awaited shipment at Vinton to keep the boat busy "for half a dozen trips at least," so that Vinton was for a time the head of navigation. Later, however, the *Black Hawk* was scheduled to run regularly between Cedar Rapids and Waterloo, and it was predicted that she would do a good business throughout the season.

On March 22, W. W. Hanford, the editor of the Vinton Eagle, "stepped aboard the trim little steamer Black Hawk, and in just five hours from the time her lines were taken in," he landed in Cedar Rapids. "Passengers who have the good fortune to take a

trip by boat from Vinton to Cedar Rapids, and do not pronounce it equal in comfort and pleasure to any they ever took, are certainly not capable of appreciating justly all the pleasures of steamboat traveling", thought the editor. The return trip was delayed a day by a high wind, but Mr. Hanford was none the less convinced of the practicability of navi-

gating the Cedar.

Not until Saturday morning, April 2nd, did the Black Hawk begin her first voyage to Waterloo. Having tied up all day Sunday, she passed Vinton about ten o'clock on Monday, and finally arrived at Waterloo on the following day. "To-day, at a little past noon," announced the Waterloo Courier for April 5th, "our citizens were not a little gratified by the sight of the steamer Black Hawk, a short distance below the lower ferry, plowing her way up stream against the stiff current of the Cedar, like a thing of life. She ran up to a point just above Fifth Street, where she made fast to the shore, and was received with hearty cheers by the crowd assembled to witness her first arrival of this season." At Waterloo there was enough freight for at least two trips, and the owners proposed to run the boat regularly thereafter between Cedar Rapids and Waterloo, making two trips a week.

All during the spring and summer the Black Hawk plied busily back and forth, carrying much freight and many passengers. She also made numerous ex-

cursion trips.

Almost to the minute when she was due the *Black Hawk* could be seen pulling in to the wharf. Early in September, however, she began to have trouble because of the prevailing low water. From then on the trips became very difficult. About the twenty-fifth of November the *Black Hawk* was backed up into a bayou at Cedar Rapids for the winter.

During the season she had made twenty-nine trips, besides numerous excursions. One round trip was made in twenty-seven hours flat. According to a table of distances prepared by the pilot, Palo was fourteen and one-half miles north of Cedar Rapids; Benton City, forty-two miles; Vinton, fifty miles; La Porte, eighty-two miles; and Waterloo, one hundred and thirteen miles. Thus the steamer travelled six or seven thousand miles.

The net profits for the summer's operations amounted to two thousand dollars. Fuel was the chief item of expense, for no less than four cords of wood were required for each trip. Farmers kept the river banks piled with "any kind of wood", for which they received cash.

The Black Hawk freight rates were very reasonable. If the goods of a shipper amounted to more than a ton the rate was twenty-five cents per hundred pounds. If the goods totaled less than a ton the rate was advanced to thirty cents. The Chicago, Iowa and Nebraska Railroad brought freight from Chicago to Cedar Rapids at a rate of from forty-two to fifty-four cents per hundred while the steamer Cedar

Rapids charged only fifty cents per hundred from St. Louis. This made it possible to obtain goods at Waterloo from either St. Louis or Chicago by paying only about seventy-five cents per hundred pounds for transportation charges. The passenger rate was about five cents a mile.

The downstream cargo usually consisted of two or three thousand bushels of grain and other produce such as hides, vegetables, eggs, and butter. On April 28, 1859, the *Cedar Valley Times* lists the down cargo on the *Black Hawk* as follows: "250 bushels corn, 2697 bushels oats, 5 bushels beans, 2 boxes furs, 1 barrel eggs, 9 barrels whiskey, 2 tons household goods, and 10 passengers."

The largest upstream load was shipped in July, 1859. The little steamer on that trip carried thirty barrels of salt and two tons of other goods to Vinton. La Porte City received two tons of merchandise, while the remaining fifty-five tons, composed of groceries, drugs, white lead, flour, hardware, and miscellaneous articles, were consigned to Waterloo. Other commodities often found on the upriver cargo list were building materials (lumber and nails), farm machinery, buggies, leather goods, and oil. There was always a brisk trade in salt and whiskey. Indeed, Waterloo came to be quite a salt center. This much-needed article which had formerly brought eight dollars per barrel now sold for four. Settlers brought their produce from considerable distances to the Cedar River ports and returned with supplies. During the season Captain Snouffer was able to make many excursion trips from Vinton and Waterloo. The sax horns were always taken along and the "turnout of ladies and gentlemen all had a good time generally". The best single trip, according to Captain Snouffer, was on the fifteenth of June, when he brought one hundred and seven persons from Vinton to Cedar Rapids for the railroad celebration. The fare for the round trip, including board, was five dollars.

Many fine things were said of the crew of the Black Hawk. It was the universal verdict that no one could manage the steamer better than Captain Snouffer. He had a reputation for being gentlemanly, accommodating, and prompt in business. Sometimes the passengers published a statement in the newspaper recommending the Black Hawk very highly and praising the quality and quantity of food served on the boat.

That the merchants were not slow in taking advantage of the new means of transportation is revealed in their advertisements. "Just arrived by steamboat" headed many a local dealer's weekly announcement in bold, black type. Great emphasis was placed upon the low prices which were made possible by quantity purchases and quick transportation from the great markets. Everything was fresh from St. Louis, New York, and Boston.

Steamboating on the Cedar was not without its troubles, however. The Black Hawk had her quota

of accidents and delays. Starting bars were always breaking, cam rods snapped off, and unseen rocks made large dents in the hull as the heavily laden craft bore down the uncharted stream. Once the Black Hawk nearly went over the dam at Cedar Rapids. She had been made fast to the shore with five large cables, but the heavy pressure of the current parted four of them and the boat was in a very "ticklish" position. The four or five persons who were on board did not in the least desire to go over the dam. Happily the fifth cable held until the boat was made secure.

On one of the trips the engineer's wife, who was acting as maid, was taken very ill. The captain sent down two doctors who were passengers to attend her. After a hurried examination both came up very much excited, stating that the patient was suffering from "spotted fever" and demanded that the boat be stopped as they wanted to get off at once. But the captain, thinking probably of the consequences, wanted to be sure the woman was really afficted with the dangerous malady, so he took the husband into the small cabin to investigate for himself. woman was very much worried and excited. Captain Snouffer rubbed her arms vigorously. Much to their surprise the spots vanished. During the night the dye in her cotton clothing had colored her hands and arms. Her headache was probably due to the stuffy room and extremely warm weather.

In the spring of 1860 the Black Hawk was pre-

pared for business, but the new owners, Burley and Durwin, were doomed to great disappointment. She hit a snag on her first voyage and tore a number of planks loose. The river was so low that she could haul only a small cargo of grain even downstream. Every trip that spring was a succession of groundings and lay-ups. The owners at last gave up. About the middle of May the vessel was taken around the dam at Cedar Rapids and placed in service on the lower portion of the Cedar River.

The ownership of the *Black Hawk* changed rapidly thereafter. Captain Snouffer had traded her off for some land and the balance in cash. Once the boat was sold under an attachment for labor for only nineteen dollars. But when the war broke out the government gave the owners the sum of six thousand dollars in cash for the vessel. She was transferred to the Tennessee and Cumberland rivers and served in carrying provisions to the Union soldiers. According to one rumor the *Black Hawk* was later engaged in blockade running on the Mississippi. She finally hit a snag in the river near Memphis and blew up.

RUSSELL C. GRAHAME

The Nicollet Boundaries

When the Bureau of Topographical Engineers in the War Department undertook the preparation of an accurate, large-scale map of the upper Mississippi Valley in 1838, an eminent French geographer, Jean Nicholas Nicollet, was engaged to do the work. Unusually well educated and further qualified by having already spent five years exploring the Mississippi basin, he was regarded as the best man for the job. Nicollet was ably assisted by Lieutenant John C. Frémont and Charles Geyer, a "practical botanist". J. Laframboise acted as interpreter.

The better part of two years, 1838 and 1839, was consumed in making the survey. Exact astronomical and barometrical observations were taken throughout most of the region now included in Iowa, Minnesota, North and South Dakota, and Nebraska. Geological formations were studied and careful notes were taken on the flora and fauna of the country.

After the survey had been completed, headquarters were established in Washington and work on the map was begun. Western Congressmen, army officers, and others familiar with the upper Mississippi Valley, like George Catlin, became enthusiastic over the project. Nicollet had a faculty of interesting people in his work and winning the lasting friendship of his associates. But progress was slow, due chiefly to the chronic ill-health of Nicollet. Eventually, however, the map was completed. In 1843, accompanied by a long report, it was published as a Senate Document, No. 237, of the Twenty-sixth Congress, Second Session. For many years Nicollet's map and his report were regarded as the best description of the trans-Mississippi region of the northwest.

Nicollet was philosophic as well as scientific. In describing the resources of the country he could not refrain from speculating about the future development of the upper Mississippi Valley. Like other travellers, he visioned conditions in the near future when settlers would be pouring across the Mississippi to convert the prairie into fields. New States would soon be carved out of Iowa Territory. The question of boundaries would then arise, and Nicollet had some opinions on that subject. Being a geographer, and not a partisan for any particular part of the region, he proposed to apportion the natural resources and navigable rivers so that each of the new States would be as well accommodated as possible. Let him speak for himself.

At the conclusion of the hostilities between the United States and the Sac and Fox Indians, in 1832, they were required to surrender a strip of country along the right or western bank of the Mississippi, extending from the northern boundary of Missouri

on the south, to what are called the neutral grounds to the north; averaging about one hundred and eighty miles in length by fifty in breath, and containing about nine thousand square miles. Major General Winfield Scott was the principal agent of the United States in acquiring this portion of the Indian lands, and hence it was often called "Scott's Purchase;" and also the "Black Hawk Purchase," after the name of the Indian leader during the outbreak alluded to. But, in 1836, my friend Albert M. Lea, then a lieutenant of dragoons, published a map and description of the country, which he called the "Iowa District"—a name both euphonious and appropriate, being derived from the Iowa river, the extent, beauty, and importance of which were then first made known to the public.

A few families settled upon spots within this district immediately after the purchase; but they were ordered off by the United States troops, as the time that the Indians were allowed to remain did not expire until the first of June, 1833. After this, the population went on steadily and rapidly increasing. In 1834, Congress passed an act attaching this district to the then Territory of Michigan, for judicial purposes; but other relations being established between this last mentioned Territory and the general government, it was not until the 4th of July, 1838, that the Territory of Iowa was organized, with a population of 30,000 souls. It may be well to remark, that additional tracts of land

having been subsequently purchased from the Indians in 1836 and 1837, the district was increased, so as to cover an area of 11,000 square miles.

The whole amount of the territory then, including what was separated from it on July 4th, 1836, for political purposes, to organize the Territory of Wisconsin, had its limits from the Mississippi on the east, to Missouri on the south, the Missouri River on the west, and extending to the British possessions in latitude 49° north.

These limits are surely very extensive; but, as the question of the proper limits of this prospective State, destined soon to take its place in the Union, is important in its relations to other States yet to arise, and there being but few persons acquainted with the interior of the broad region embraced by the map, it may not be inappropriate to suggest, in conclusion of a short account of this region, some views as to the most eligible limits to be given to these several States.

In a few years more, the fertile country along the borders of the present settlements will have been occupied by civilized men, cultivators of the soil. It will then be divided into new States; but, as it is known that a broad belt of uninhabitable flat country lies between the borders just mentioned and the Rocky Mountains, it becomes a difficult and yet necessary problem to divide this portion into the most convenient forms, variously to accommodate the States that will gradually arise.

But I may remark, in the first place, that two States may be formed west of the trans-Mississippian States of Arkansas and Missouri; and then, by taking about equal portions of each side of the Missouri River, embracing the mouth of Platte River, we have a third State, with a good and well-watered soil. This latter division would still leave sufficient space for the State of Iowa, by extending it as far north as the St. Peter's. Now, north of the two last-mentioned States might be formed another, embracing all the remaining tributaries of the Mississippi on its west side, as well as those of the Red River of the North, and as far north as to the British possessions.

Thus it appears, that, by a judicious division of the remaining country along the borders, taking in a small portion of the more barren region beyond it, there is sufficient space for five new States of large size, compact in their forms, and having a good portion of fertile soil; most of them possessing convenient navigable streams, with a fair prospect of mineral resources.

According to this division, the State of Iowa should be bounded by the Mississippi on the east, by a parallel of latitude passing through the mouth of the Mankato or Blue Earth River, by a certain meridian line running between the 17th and the 18th degrees of longitude on the west, and by the northern boundary of the State of Missouri to the south. These limits would embrace about forty to forty-

two thousand square miles, with a proportionable capacity to sustain a corresponding population. It would give to the State a depot on the St. Peter's River, whilst the Des Moines and Iowa rivers, running through its more central southern parts, would make the whole territory, excepting the small portion drained by the tributaries of St. Peter's River. assume the character of an extended valley, with nearly all its streams flowing in one general direction, to contribute their share to the mighty Mississippi. As the population would be composed of emigrants from all parts of the civilized world, by not extending the boundary so as to estrange one portion of the people from the other, on account of a difference of origin, or a different course of trade, they would be brought to live contentedly under the same laws and usages; whilst the uniform direction of the waters, together with the similarity of climate, soil, resources, and avenues to market, are well calculated to give to the inhabitants of this State a homogeneity of character and interest highly conducive to their well-being, both morally and politically.

J. N. NICOLLET

Pathfinding in Iowa

In pursuance of orders received at Washington in June, 1841, I left on the 27th of the same month the small settlement of Churchville, on the west bank of the Mississippi, a few hundred vards below the mouth of the Des Moines river. The road for about nine miles lay over a luxuriant prairie bottom, bordered by the timber of the Fox and Des Moines rivers, and covered with a profusion of flowers, among which the characteristic plant was psoralea onobrychis (related to the "prairie turnip" of the vovageurs). Ascending the bluffs, and passing about two miles through a wood, where the prevailing growth was quercus nigra (water oak), mixed with imbricaria (shingle oak), we emerged on a narrow level prairie, occupying the summit of the ridge between the Fox and Des Moines rivers. It is from one and a half miles to three miles in width. limited by the timber which generally commences with the descent of the river hills. Journeying along this, the remainder of the day and the next brought us at evening to a farm-house on the verge of the

[This is John C. Frémont's official report of his survey of the Des Moines Valley below the Raccoon Fork in 1841. It is reprinted from House Executive Document, No. 38, pp. 16–20, 27th Congress, 3rd Session. The spelling of botanical names has been corrected and the common names have been inserted in parentheses, but the capitalization and the partially obsolete terminology have been retained as in the published report.— The Editor]

prairie, about two miles and a half from Chiquest creek.

The route next morning led among, or rather over the river hills, which were broken, wooded, and filled with the delicate fragrance of the ceanothus (New Jersey tea), which grew here in great quantities. Crossing Chiquest about four miles from the mouth, we forded the Des Moines at the little town of Portland, about ten miles above the mouth of the creek. The road now led along the northern bank, which was fragrant and white with elder, and a ride of about twelve miles brought us to the little village of Iowaville, lying on the line which separates the Indian lands from those to which their title has already been extinguished.

After leaving this place, we began to fall in with parties of Indians on horseback, and here and there, scattered along the river bank, under tents of blankets stretched along the boughs, were Indian families; the men lying about smoking, and the women engaged in making baskets and cooking—apparently as much at home as if they had spent their lives on the spot. Late in the evening we arrived at the post of Mr. Phelps, one of the partners of the American Fur Company.

Up to this point there are three plants which more especially characterized the prairies, and which were all in their places very abundant. The psoralea onobrychis, which prevailed in the bottom near the mouth of the Des Moines, gave place on the higher prairies to a species of cacalia (Indian plantain), which was followed, on its disappearance further up, by parthenium integrifolium (feverfew or prairie dock). The prairie bottoms bordering the river were filled with liatris pycnostachya (button snakeroot); and a few miles above Portland, on the north bank of the river, were quantities of liatris resinosa (blazing star) mingled with Rudbeckia digitata (prairie coneflower).

On the bluffs here, the growth was principally quercus alba (white oak), interspersed with tinctoria (black oak) and macrocarpa (bur oak), and sometimes carya alba (white-heart hickory). All these now and then appear in the bottoms, with carya olivaeformis (pecan) and tilia (basswood). Ulmus Americana (American elm), fulva (slippery elm), and betula rubra [nigra] (river birch), with ostrya Virginiana (leverwood) and gymnocladus canadensis (coffee-tree), are found on the bottom land of the creeks. Populus canadensis (cottonwood) and salix (willow) form groves in the inundated river bottoms, and the celtis occidentalis (hackberry) is found everywhere.

Having been furnished with a guide and other necessaries by the uniform kindness of the American Fur Company, we resumed our journey on the morning of the 1st of July, and late in the evening reached the house of Mr. Jameson—another of the company's posts, about twenty miles higher up. Making here the necessary preparations, I com-

menced on the morning of the 3d a survey of the river valley.

A canoe, with instruments and provisions, and manned by five men, proceeded up the river, while, in conformity to instructions which directed my attention more particularly to the topography of the southern side, I forded the river and proceeded by land. The character of the river rendered the progress of the boat necessarily slow, and enabled me generally to join them at night, after having made during the day a satisfactory examination of the neighboring country. Proceeding in this way, we reached Rackoon Fork on the evening of the 9th of July.

I had found the whole region densely and luxuriantly timbered. From Mule creek to the eastward, as far as Chiquest, the forests extend with only the interruption of a narrow prairie between the latter and Soap creek. The most open country is on the uplands bordering Cedar river, which consist of a prairie with a rich soil, covered with the usual innumerable flowers and copses of hazel and wild This prairie extends from the mouth of Cedar river to the top of the Missouri dividing ridge, which is here [approximately at the site of the present town of Moravia at its nearest approach to the Des Moines river, the timber of the Chariton, or southern slope, being not more than twelve miles distant. From this point to the Rackoon Fork, the country is covered with heavy and dense bodies of

timber, with a luxuriant soil and almost impenetrable undergrowth.

Acer saccharum (sugar maple) of an extraordinary size, juglans cathartica (butternut) and nigra (black walnut), with celtis crassifolia (hackberry), were among the prevailing growth, flourishing as well on the broken slopes of the bluffs as on the uplands. With the occasional exception of a small prairie shut up in the forests, the only open land is between the main tributaries of the Des Moines, towards which narrow strips of prairie run down from the main ridge. The heaviest bodies lie on the Three Rivers, where it extends out to the top of the main ridge, about thirty miles. northern side of the Des Moines, the ridge appeared to be continuously wooded, but with a breadth of only three to five miles, as the streams on that side are all short creeks. A very correct idea of the relative quality and disposition of forest land and prairie will be conveyed by the rough sketch annexed.

Having determined the position of the Rackoon Fork, which was one of the principal objects of my visit to this country, I proceeded to make a survey of the Des Moines river thence to the mouth. In the course of the survey, which occupied me until the 22d of July, I was enabled to fix four additional astronomical positions, which I should have preferred, had time permitted, to place at the mouth of the principal tributaries.

From the Rackoon Fork to its mouth, the Des Moines winds a circuitous length of two hundred and three miles through the level and rich alluvium of a valley one hundred and forty miles long, and varying in breadth from one to three, and sometimes four miles.

Along its whole course are strips of dense wood, alternate with rich prairies, entirely beyond the reach of the highest waters, which seldom rise more than eight feet above the low stage. Acer dasycarpum (soft maple), which is found only on the banks of such rivers as have a gravelly bed, is seen almost constantly along the shore, next to the salix (willow) and populis canadensis (cottonwood), which border the water's edge.

The bed of the river is sand and gravel, and sometimes rock, of which the rapids generally consist. All of these which presented themselves, deserving the name, will be found noted on the accompanying map, and two of the more important are represented on a large scale. After these, the most considerable rapid above the Great Bend is at the head of the island above Keokuk's village. The bend in the river here is very sharp, the water swift, with a fall of about one foot, and a bottom of loose rocks, with a depth of two feet at the lowest stage. At the mouth of Tohlman's creek is only a rocky rapid, used as a ford, whose depth at low water is one foot. The rapid of the Great Bend, 4½ miles below Chiquest creek, has a fall of 12 inches, and, so far

as I could ascertain, had formerly a depth of 18 inches at low water. A dam has been built at this place, and the river passes through an opening of about 40 feet. Another dam has been built at a rapid 12 miles lower down, where the river is 650 feet wide. The fall, which I had no means to ascertain correctly, was represented to me as slight, with a depth of 18 inches at lowest water. Four and half miles lower down, at Farmington, another dam and mill are in course of construction, but the rapid here is inconsiderable, and the low water depth greater than at the other two.

I regret that I had neither the time nor the instruments requisite to determine, accurately, the velocity and fall of the river, which I estimated at six inches per mile, making a total fall of about 100 feet from the Rackoon to the mouth. It is 350 feet wide between the perpendicular banks at the mouth of the Rackoon, from which it receives about one-third its supply of water, and which is 200 feet wide a little above the mouth. Its width increases very regularly to over 600 feet, at Mr. Phelps's post, between which and 700 feet it varies until it enters the Mississippi bottom, near Francisville, where it becomes somewhat narrower and deeper. At the time of my visit, the water was at one of its lowest stages; and at the shallowest place above Cedar river, known as such to the fur company boatmen, I found a depth of 12 inches. The principal difficulties in the navigation, more especially above the Cedar, consist in the sand bars. These, which are very variable in position, sometimes extend entirely across the river, and often terminate abruptly, changing from a depth of a few inches to 8 and 12 feet. From my own observations, joined to the information obtained from Mr. Phelps, who has resided about twenty years on this river, and who has kept boats upon it constantly during that period, I am enabled to present the following, relative to the navigation, as data that may be relied upon.

Steamboats drawing four feet of water may run to the mouth of Cedar river from the 1st of April to the middle of June; and keelboats drawing two feet, from the 20th of March to the 1st of July: and those drawing 20 inches, again, from the middle of October to the 20th of November. Mr. Phelps ran a Mississippi steamer to his post, a distance of 87 miles from the mouth, and a company are now engaged in building one to navigate the river. From these observations it will be seen that this river is highly susceptible of improvement, presenting nowhere any obstacles that would not yield readily. and at slight expense. The removal of loose stone at some points, and the construction of artificial banks at some few others, to destroy the abrupt bends, would be all that is required. The variable nature of the bed and the velocity of the current would keep the channel constantly clear.

The botany and geology of the region visited occupied a considerable share of my attention. Should

it be required by the bureau, these may form the subject of a separate report. In this I have noticed the prevailing growth and characteristic plants, and those places at which coal beds presented themselves will be found noted on the map.

J. C. FRÉMONT

Comment by the Editor

THE COURSE OF TRUE LOVE

The survey of the Des Moines River below the Raccoon Fork during the summer of 1841 "was a health-giving excursion," wrote John C. Frémont in his *Memoirs*, "but it did not cure the special complaint for which I had been sent there." No one would suspect from reading his report that he was afflicted with any ailment. With the exception of excursions into the woods, "where deer and wild turkey were abundant", he attended to duty assiduously, executing his commission with thoroughness and dispatch. Why, then, had he been "loath to go" exploring, he who was to win the epithet of "Pathfinder"?

The ostensible purpose of Frémont's reconnaissance of the lower course of the Des Moines River was to complete the survey of the region between the Mississippi and Missouri rivers, in which he had assisted J. N. Nicollet in 1838 and 1839. The earlier explorations had embraced only the upper part of some of the principal tributaries and, as work on Nicollet's large topographical map progressed, there was need of ascertaining exact geographical data pertaining to the lower portions of these streams. Frémont, because of his connection with the enter-

prise from the beginning, was deemed to be well qualified to obtain the desired information. The command of this expedition was indeed an opportunity to demonstrate his ability. Prominent statesmen in Washington, like Senator Thomas H. Benton, were even then planning more extensive explorations in the far west which would require the most capable leadership.

Officially the youthful geographer was sent to Iowa on government business; but actually more dynamic purposes caused his sudden departure to the western frontier. "The influence of women", according to Frémont, "is a force sometimes dangerous." He was thinking of Mrs. Benton, for it was she who contrived to have him dispatched on exploration duty. He went reluctantly because he had fallen in love with Jessie Benton — comely, vivacious, intelligent, and just sixteen — who was equally attracted by the energy and demeanor of "the handsomest young man who ever walked the streets of Washington".

As the visits of the ardent lieutenant to the hospitable Benton drawing-room became more and more frequent, the courtship developed apace. The Senator and Mrs. Benton became alarmed. Not that they objected to the irreproachable young officer, for they liked and admired him; but Frémont was poor, army life was unsettled at best, and his prospects then offered little encouragement. Besides, Jessie was too young to think of marriage.

In spite of a parental ultimatum that Jessie and John were not to see each other except on rare occasions, their mutual affection continued to flourish, and early in April, 1841, while others were watching the funeral procession of President Harrison, they plighted their troth. Something decisive had to be done about that. Mrs. Benton consulted her friend Mrs. Poinsett, and she spoke to her husband, the Secretary of War. So Frémont was hustled away to survey a river in Iowa, while Miss Benton was taken south to attend an elegant house party at her grandfather's mansion. The impetuous lovers were to wait a year — in the hope that their ardor would cool.

But neither the diversions of a social excursion nor the lonely duty of exploration served to cure the "special complaint" from which they both suffered. Jessie Benton returned to Washington in July, "impatient to see" her fiancé, and Frémont, the inveterate explorer, hastened back to the capital as soon as he could, probably by September.

"The most important events of our individual life come upon us suddenly", he observed in later years, "and so it was with our marriage." The eager couple were secretly wedded on October 19th by an accommodating Catholic priest. They were not particular about the religious faith of the officiating clergyman if he would perform the ceremony quickly and securely. More than two weeks elapsed before Lieutenant Frémont, embarrassed but deter-

mined, faced his irate father-in-law. Mrs. Frémont was present to lend support if necessary.

"Get out of the house and never cross my door again!" commanded Senator Benton, blazing with

anger. "Jessie shall stay here!"

Thereupon Jessie intervened, defiantly and dramatically. She did stay at home, and her husband came to stay with her.

J. E. B.

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