

## 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 yards 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 voyageurs). 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 *ostrea 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 Chiquet, 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 plum. 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. On the 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 *populus 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,  $4\frac{1}{4}$  miles below Chiquet 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.

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