

The PALIMPSEST

APRIL 1935

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THE EDITOR

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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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Records of the March

The march of three companies of United States Dragoons through the interior of Iowa in the summer of 1835 was in many respects the most important exploration of that region. Little was known of the country soon to be opened for settlement. The official reports of the expedition and Albert M. Lea's *Notes on Wisconsin Territory, with a map*, published in 1836 did much to attract favorable attention toward Iowaland.

Few activities on the frontier a hundred years ago were as fully recorded as this military expedition. An unknown member of Company I kept a diary in which he described the events of each day. This old manuscript was published in the *Iowa Journal of History and Politics*, Vol. VII, pp. 364-378, July, 1909. It is the most vivid account of the march.

Lieutenant Lea acted as topographer of the expedition. He took notes on the character of the country, plotted the route with a pocket compass,

estimated the distances travelled, and collected information from every available source. His field notes appear to have been lost or destroyed after he used them for his official reports and in the preparation of his little book.

On September 8, 1835, Lea submitted a detailed report upon the navigability of the Des Moines River to his commanding officer, Lieutenant Colonel Stephen W. Kearny. Six days later Kearny included this letter with his own report of the expedition to the Adjutant General in Washington. He said that existing maps were very imperfect, but he hoped to forward soon a map "as correct as circumstances would admit" and "made with great care" by Lieutenant Lea.

Lea submitted his map on November 4th and the next day Kearny sent it to the War Department. Accompanying the map was an explanatory "Memoir" written by Lea. This original description of the "Iowa District" is here printed exactly as written, except that editorial explanations in brackets have occasionally been inserted to make the meaning clearer.

The map is no longer with the Memoir in the files of the Adjutant General's office, and appears to have been lost. It was, however, probably identical with the one published in the *Notes on Wisconsin Territory*.

Official Letters

Fort Des Moines,
4 Nov. 1835.

Sir,

I have the honor to submit herewith a map, accompanied by an explanatory memoir, of the country explored by the detachment of Dragoons under your command, during the past summer. I have somewhat exceeded your instructions in preparing the memoir to accompany the map, but I hope it will meet with your approbation.

Very respectfully,

A. M. Lea, of Tenn.

To/

2d. Lt. Dragoons.

Lt. Colo. S. W. Kearny,
Commanding.

Det'. Head [Detachment Headquarters]
2ⁿ. Regt Dragoons
Fort Des Moines Nov^r. 5th. 1835

Sir

Herewith you will receive a communication from Lieut[enant] Lea U. S. Dragoons, with a map of the country we passed over during the Summer, with a Memoir relating thereto. Much credit is due to Lieut Lea for his perseverance in preparing this map.

Very Respectfully
Your Ob. Servt [Obedient Servant]
S. W. Kearny
Lieut Col. Drags. [Dragoons]
Cmd [Commanding]

Brig Genl. R. Jones
Adjt Genl.
U. S. Army

Memor

To accompany the map of the country explored by the Detachment of Dragoons under command of Lt. Colo. S. W. Kearny, in the summer of 1835.

After leaving the comparatively low prairie in which Fort Des Moines is situated [the present site of Montrose], our route lay along the dividing ridge between the waters of the Mississippi [Mississippi] and those of the Des Moines rivers. [More exactly the dragoons followed the divide between the Des Moines and Skunk rivers.] A narrow prairie, from 1 to 6 miles wide, extends along this ridge, skirted by groves of oak and hickory usually about 1 mile wide. Beyond these woods, lower prairies, parts of which are frequently flooded, extend to the larger streams on either side. Whenever small streams occur, however, the woods extend from mouth to source; and hence, for 90 miles from the Fort [between the present sites of Montrose and Ottumwa], we found no place where the woods were more than 2 miles from us. Both wood-land and prairie, thus far, are exceedingly fertile, the soil being a black loam based upon clay. The trees are usually oak and hickory, and the

woods are free from under-growth; and no stone is to be found, except siliceous pebbles and granitic boulders.

After this, the prairie became much wider; and indeed it cannot be considered of any definite extent; though frequently intersected by strips of woods, of which every stream affords more or less, it may be here considered a part of the Grand Prairie. The soil, too, is less rich; sand becomes abundant, and gravel frequently shows itself on the surface. The ground is rolling and dry, except in very wet seasons, until we get a few miles beyond the mouth of Crooked river [Creek], the first fork of the Shakauk [Skunk] river on the west [left] side, where swamps and slashes [swampy thickets] are not infrequent on the highest prairie. [The Skunk River seems to have been called Chicaqua or Checaque by the Indians. This is the same word from which "Chicago" was derived. Lea labeled it Chacagua on his published map of the Iowa District.] In wet weather, as when we passed them, it is exceedingly difficult either to avoid or to traverse them; and they appear to be perennial, as they produce the long rush in abundance, and afford to thousands of muskrats a congenial home. The country preserves this character until we pass Ha ha wa, or Swan, Lake [in present-day Hamilton County], in which Sha-

kauk, or Skunk, river has its source. [If Lea referred to the largest body of water in this region it was Cairo Lake, more recently known as Mud Lake.] This lake is also a tributary of Boone River. [Probably connected by sloughs. It has now been drained.] Shakauk is usually clear, rapid in its current, and much resembles the Des Moines river between Raccoon and Cedar. [Cedar Creek flows into the Des Moines from the right side near the western boundary of Mahaska County.] It has wide rich bottom prairies bordering upon it, and affords immediately and by its tributaries, which are usually fed by Springs, abundance of excellent timber. It may be advantageously navigated by small keelboats during the spring tides, as high as Crooked river [Coppock].

Beyond Lake Hahawa, about 10 miles, we crossed a river, called by the Indians, Ioway; but as it is by far less than the other branch of that river, called Red Cedar; and as the name, Ioway, is irrevocably fixed on that part of the river below the junction, it is proposed to give that name to the larger branch, and to call the smaller branch Buffalo river, from the game found upon it. Where we crossed it [probably about three miles south of Dows], it is about 30 yds wide, 4 ft deep, and clear, though in freshet; has a gentle current, gravelly bottom covered with moss, low banks, and but

little timber bordering on it. It is probably navigable for small boats, as far as the mouth of Otter creek. [Lea apparently refers to the West Fork of the Cedar River.]

After passing this river, we found an almost continuous succession of swamps, for 14 miles, the prairie being scarcely interrupted by a tree. Traversing then a few miles of dryer ground, we came to a high ridge, where we found a Sioux Fort, made by excavating a series of holes, large enough to contain several men, and arranged in an elliptical form, outside of which, when used, skins are stretched on stakes, fixed in the ground, to intercept the view and the missiles of the enemy. [This Indian stronghold overlooked Otter Creek probably five or six miles north of Hampton. Lea named this stream Fort Creek.]

Fort and Otter creeks are each about 20 yds wide, 18 inches deep, clear and swift; and being fed by lakes, they are perennial. The latter, affording most water, gives the name to the united stream [now known as the West Fork of the Cedar]. They both flow in beds 100 ft below the general level, and afford but little timber on their borders. It is said that the lakes at the heads of these creeks, as well as most others in this region, are terminated at their outlets by masses of rock piled up, sometimes 10 ft high, in a manner re-

sembling masonry; and they are asserted by many actually to be artificial work. [This phenomenon is illustrated by Wall Lake in Wright County.]

Nothing peculiar presents itself between Otter creek and English [Shellrock] river, or rather the Lime creek branch, where large groves relieve the general baldness of the prairie. This creek is usually about 20 yds wide, 15 inches deep, clear, swift, with banks alternately bluff and low; limestone rock (secondary formation, containing shells) occurs abundantly in these bluffs; fish abound in the water; fine springs are numerous; the soil is rich; and the most beautiful sites for building present themselves along the river: it is indeed a lovely country. English [Shellrock] river, at the crossing, is rather larger than Lime creek, to which it is very similar. It is probable that boats may ascend, at certain seasons, as high as the mouth of the latter [at Rockford in Floyd County].

Leaving English river, we passed over a tract diversified with woods & prairie, hill and dale, but of less fertility, to the main Ioway, called by the Indian traders, Red Cedar. It is here [near the present site of Osage] about 35 yds wide, 2½ ft deep, swift, clear, and has a gravelly bottom. Limestone bluffs present themselves occasionally on either bank. No falls or rapids, are known in

the river; boats annually ascend it about 80 miles; those that have traversed it in canoes, say that the navigation is better above that point than below; it is an open, uninterrupted stream where we crossed it in our outward march; and at our second crossing [northeast of Albert Lea, Minnesota], it is 45 yds wide, $4\frac{1}{2}$ ft deep, with a current of $\frac{3}{4}$ mile per hour; and it is fed also by lakes: from these facts, it may be inferred, with great probability, that keelboats may be taken to its very source, during several months of the year, and that even steamboats of light draught may navigate it advantageously. It is a remarkable fact, that most of the rivers of this region, being supplied by lakes, are more navigable near their sources than lower down. Ioway river [meaning the Cedar River], from its mouth to our second crossing, and probably to its source, affords large quantities of timber; at our first crossing, the woods are $1\frac{1}{2}$ miles wide, extending indefinitely up and down the river, and greatly increasing in width, as we descend. The trees are luxuriant, and consist of walnut, ash, elm, oak, maple, &c. The soil is remarkably fertile, and but little of the timbered land, except near the mouth, is flooded in times of freshets.

About 14 miles from Ioway [Cedar], we crossed a creek, called, by Capt. Boone in his map

of the Neutral Ground, Red Cedar [now known as the Little Cedar]; it receives another creek a few miles below, and becomes a valuable tributary before entering the Ioway [Cedar]. Beyond Red Cedar, the soil begins to deteriorate; the woods consist of stunted oak, without undergrowth.

Ten miles from Red Cedar brought us to the high grounds dividing the waters of *the Ioway* [Cedar] from those of Upper Ioway; and, as usual in such cases, we had wet, marshy ground and some swamps; for it is a curious fact that the high grounds about the sources of streams, in a prairie region, are always more springy than the lower grounds along the same streams. For several miles before we reached the Upper Ioway, we travelled through a broken, unproductive region, presenting nothing attractive, save now & then a clear cool spring of limestone water; but on the Upper Ioway itself, the soil is very rich. The river is 25 yds wide, $2\frac{1}{2}$ ft deep, clear and swift, at our crossing, but very irregular both in depth and current; it washes against high, overhanging bluffs, the tops of which are 200 ft above the pools at their bases. These bluffs are of limestone of the variety usually found associated with Galena [lead bearing], both on the Upper Mississippi and in Missouri. There is little doubt of the presence of this mineral on the Upper Ioway, and even on

the main Ioway [Cedar] and Shakauk [Skunk] rivers. Passing through a fine forest three miles wide, we came to a large branch of this river, and in $\frac{1}{2}$ mile further, we crossed a smaller branch, both presenting much the same appearances as the main stream. This day's march of 13 miles has been through a country broken, hilly, and very rough, though very fertile, about the rivers.

We traversed a barren tract between the Upper Ioway and Root rivers; but we found a forest $1\frac{1}{2}$ miles wide on the latter and some very rich bottom lands. The uplands appear to be much broken, and are frequently clothed in a sort of brushy oak woods.

Fifteen miles beyond Root river is the dividing ridge between its waters and those falling into the Embarras [Zumbro River]; and here also is the transition from the Limestone to the Sandstone formation, as is indicated by the scarcity of springs, a change of soil from black loam to whitish sand, and a difference of growth. On the top of this ridge, we got into an extensive morass, generally strong enough to support horses and waggons, but occasionally presenting places where the sod was destroyed; and whatever was so luckless as to get into these places, was lucky if it got out again. Such Morasses are frequent in the region of the Upper Mississippi.

Three or four miles further on, we came to several bluffs of sandstone covered with a redish lichen, and much resembling, at a distance, immense edifices of brick, in partial dilapidation. They occur near the sources of White (or Clear) Water river, about which the country is generally wild, rough, and mountainous; but the valley of Clear Water itself, including the lofty and precipitous bluffs with which it is fenced about, offers to view a remarkable assemblage of the sublime and beautiful in natural scenery. This river is about 30 yds wide, $2\frac{1}{2}$ ft deep, has a current of 2 miles per hour, is exceedingly clear, has a white sandy bottom (usually quicksand), and is almost literally filled with fish.

Embarras, or Raft, river [so named by Lea because it was clogged with rafts of driftwood] is about 60 yds wide at its mouth, yet it extends to 500 or 600 yds in width above, owing to the drifted logs, prostrate trees, snags, &c. with which it is obstructed; and it is almost as difficult to cross it, as to navigate it longitudinally, on account of its miry banks and bottom. We encamped for 2 or 3 days on a brook emptying into this river, and found it and others most abundant in the gold-speckled trout. This is the midst of what is termed the Highlands of the Upper Mississippi.

The general level of these highlands is about

800 or 1000 ft above the river, towards which they very gradually slope for several miles. Through this immense barrier, the Mississippi appears to have burst a passage a mile in width, and is now walled in by precipitous rocky bluffs from 500 to 600 ft high, and continuous, save where severed by the action of tributary streams. Now and then the barrier recedes far enough to allow a little plateau, usually prairie, between itself and the river. Wabashaw's Village [about five miles above the present site of Winona] is situated in a prairie of this kind, about 7 miles long by 2 miles broad. These bluffs run along every creek that intersects the country, gradually decreasing in height above the level of the stream as that level rises. They are composed of a very friable sandstone containing small masses, usually reniform, of nearly the consistency of flint rock. Scrubby Oak is the only tree in these mountains, except a few groves of cottonwood and elm along the streams and on the numerous islands of the rivers, and some groves of larger oak on the plateaus.

In returning from Wabashaw's village, our route lay through a part of the Highlands just described. Seven miles beyond Root river, we came again into the region of limestone and rich lands. We travelled a few miles over our outward track, and then bore westward, nearly in a parallel with

this river, over as uninteresting a country as may be imagined; it is chiefly prairie, but occasionally presents aspen thickets exceedingly difficult to traverse even on horseback. Though there had been no rain for several weeks, we found much marshy ground about the heads of the creeks.

At the crossing of Root river, we must have been full 700 ft above the Mississippi; yet the ground rises almost continuously thence to the Upper Ioway, a distance of 43 miles. This fact may give some idea of the elevation of the sources of this and contiguous streams.

The Upper Ioway has a sparse growth of scrubby oaks along its banks, which are usually high, though marshy bottoms sometimes occur. As it was much swollen by rains, we could not ascertain its usual size; it is probably fed by lakes, as it has much the appearance of an outlet to one, being deep, narrow and sluggish.

We next came to the main Ioway [Cedar] again; it has been already described. About the second crossing, the timber is very fine and extensive in the low grounds, and on the ridges the small oaks look like fruit trees regularly planted. It is worthy of notice, that generally the highest grounds, in this region of lakes, are the wettest, being broad plateaus from which the water escapes only by evaporation. For forty miles from

Upper Iowa, the country is undulating, chiefly wooded, frequently marshy, and abounding in lakes, some of which are very handsome. After we passed Lake Chapeau [now White Lake near Albert Lea] a few miles, we came to prairie seldom interrupted by woods, gently rolling and very marshy. It is the dividing ridge between the waters of St. Peter's [Minnesota River], and those running south into the Mississippi.

Leaving this ridge, we approached the Des Moines, and found the prairie far less marshy. The Sunday Fork [East Fork], as the more easterly of the "Upper Forks" of the Des Moines is called, is about 35 yds wide, 12 ft deep, and sluggish. Its bed is full of long, entangling grass, rendering it dangerous to swim horses over it, as we experienced. This is common to all such streams. The lake laid down at the head of this fork is of doubtful existence, though the river is evidently the drain of a lake-like region. The route from the Sunday [East] fork to the main Des Moines river is over a high, dry, rolling prairie, skirted with woods, and of richer soil than that on the east side of the fork. We crossed the Des Moines at a rapid [probably in the vicinity of the present town of Rutland]; and it is there about 45 yds wide, 2 ft deep, has a rocky bottom, and a current of $3\frac{1}{2}$ miles per hour. There are some fine

low lands along it; but there is little timber, except near the Forks [about ten miles north of Fort Dodge], where there is a body of timber of at least 1,000 acres, and on Sunday [East] Fork, another 3 or 4 miles long by 1 to 2 broad, beginning near the mouth. The "Upper Forks," as this junction is termed, has been spoken of as a site for a Fort. It is on the central line of the neutral ground between the Sioux and the Sacs; its garrison might co-operate with those of Forts Snelling, Crawford, Leavenworth, and also of Fort Calhoun, should that position be re-occupied; or it *might* render that measure unnecessary. With these advantages, there are three strong objections to be considered; first, its discomfort; secondly, the difficulty of supplying it; and thirdly, *it is not needed*. [Fort Dodge was maintained at the mouth of Lizard River from 1850 to 1853.]

Below the Upper Forks, for several miles, there is little timber; but it gradually increases until near the mouth of Boone river, whence to the mouth of Raccoon river, the woods are several miles wide, affording a luxuriant growth of walnut, ash, maple, oak, &c. Of that part of the river above Raccoon, little is known; but it is probably as well adapted to navigation as that part between Raccoon and Cedar rivers [from Des Moines to the western border of Mahaska County]. From the

Raccoon to the Mississippi, the Des Moines has been carefully reconnoitered; hence its devious course, as laid down on the map, and the following remarks may be considered nearly accurate.

The general course of the Des Moines is southeast, and its length, below the mouth of Raccoon, is about 266 miles. [The distance is over-estimated.] This is its chief tributary, affording two thirds as much water as the main river itself. Below the junction, the river varies from 80 to 100 yds in width, and, at low water, from 11 inches to 4 ft in depth; frequent rocky bars divide it into a succession of rapids and eddies; numerous bars of loose white sand, changeable by every rise of water, render its channel very uncertain; many snags and projecting rocks endanger boats in rapid motion; and its bends are often so sudden as to render it difficult for descending boats to clear them. Its average current is about $2\frac{1}{2}$ miles per hour, but much greater in many places. This is its character until it receives the Cedar river [in Mahaska County], by which its volume is increased about a third. It is 96 miles from the Raccoon to the Cedar, and in this distance there are 19 places affording a channel not more than 14 inches deep, excluding a very rough, rocky rapid, dangerous even in high water.

Below Cedar river, for 80 miles to Keokuk's

Village [a few miles below the present town of Eldon, according to Lea's map], it is about 160 yds wide, is less crooked and without snags; but the general depth is less; 22 places, in this distance, do not afford more than 14 inches of water, and it was difficult frequently to navigate a canoe of 12 inches in draught. Though several rocky rapids occur, none oppose any serious obstacle, except those just below Opanoose's [Appanoose] Village, where there is a fall of 13 inches in 20 feet.

Below Keokuk's village, the river is usually from 200 to 225 yds wide; its course is remarkably free from sudden bends; its current is nearly uniform, about 2 miles per hour, in low water; the depth is very regular, seldom under 15 inches; the bottom is a smooth blue limestone, sometimes covered with sand and fine gravel; and not a single extraneous obstruction presents itself, save a few loose rocks at one place, until within 11 miles of the mouth. The far-famed "Rapids of the Des Moines," where this obstruction occurs, are near the lower end of the Great Bend, and about 10 miles north of the State line of Missouri. [The Des Moines Rapids in the Mississippi River above Keokuk were more "far-famed". This confusion of nomenclature had an important bearing on the Iowa-Missouri boundary dispute.] There is a fall

of 11 inches here in 100 yds; but the removal of a few loose rocks would give a good channel.

About 11 miles above the mouth, the influence of the Mississippi begins to be felt; the river is reduced to 80 or 100 yds in width; the channel becomes crooked; the banks are frequently caving in; and snags are abundant; but there is always deep water where there are snags. Though 10 miles of the river is thickly set with snags, boats may avoid them in daylight, but they can never run that part of the river by night. The back-water from the Mississippi causes frequent collections of driftwood, and renders this part of the river very liable to change its bed, as it has recently done to a great extent. It has four mouths; the first outlet is a narrow slue, $\frac{3}{4}$ mile long, very deep, and entirely filled with logs and snags; 1 mile below this, two other outlets occur; and half a mile lower down, the main river is lost in the Mississippi.

Between Raccoon and Cedar rivers, the banks of the Des Moines are rough and broken, being usually formed by hills jutting into the river; sometimes alluvial formations occur, where logs may be seen 10 or 12 ft below the largest forest trees. This portion of the river affords large forests of excellent timber. From Cedar to Keokuk's Village, there is little that can be called woods, the forests being almost entirely of cotton wood, and

confined to the skirts of the streams; but nothing can exceed the fertility and beauty of the prairies, gradually rising as they recede from the river, and here and there crowned with groves of neat looking oaks free from all inferior growth. From Keokuk's Village to within ten miles of the mouth, the shores present alternate hills and bottoms, both covered with vigorous forests; the river is broad, straight, firm in its banks, having its bottom of a compact limestone, is not subject to overflow, & runs through very rich lands, but which unfortunately are not extensive.

The mineral productions of the river banks are interesting. Sandstone, suitable for building, is abundant as far down as Tollman's, 14 miles above the mouth; Silicious limestone, not suitable for manufacture of lime, occurs near Raccoon river; metaliferous limerock shows itself on a level with low water 15 miles above Cedar, and gradually rises until it becomes $4\frac{1}{2}$ or 5 ft above the water near where the Missouri line crosses [meets] the river; it is supported by the bluish limestone which forms the bed of the river. Bituminous coal of excellent quality occurs frequently and abundantly above Cedar; it is also found near the Great Bend, 50 miles above the mouth; I also observed oxides, the sulphuret and native sulphate, of Iron, Lignite, and the earths usually found in coal formations.

As to the practical navigableness of the river, I must resort to the statements of others; I was fortunate enough to meet with two gentlemen upon whose information and veracity I could rely, and also to meet a keelboat ascending the river. At an expense of \$500, some snags and logs near the mouth, and a few rocks, at various rapids above, may be removed, so as to make a clear channel as high as the mouth of Cedar. The average annual rise is about 8 ft, giving a depth of $5\frac{1}{2}$ ft on the shoals; these freshets are transient and render the current impetuous. There is usually a freshet at the melting of the snows in the spring, and another in autumn produced by rains in the humid region about the sources of the river. During winter, the river is obcluded by ice; in summer and early autumn, the water is very shallow. On 15 August, I met a keelboat, capable of carrying 18 tons, but having only 9 tons on board, drawing 16 inches water, and well manned. She travelled about 7 miles a day only; but in higher water the navigation is much less difficult.

The following is a succinst [succinct] statement of the classes of boats that may be advantageously used on the river below the mouth of Cedar, with the times that they may run, as nearly as I can ascertain.

1. Steamboats, drawing $3\frac{1}{2}$ ft, from 1 April to 15 June.
2. Steamboats or Keelboats, drawing $2\frac{1}{2}$ ft, from 20 March to 1 July.
3. Keelboats, drawing 20 inches, from 15 March to 15 July, and from 15 October to 25 November.

Of that part of the river above Cedar, I can only say that it affords a greater depth of water than the river below, and that I believe steamboats of 80 tons may run it with less risk than Keelboats, though both would be endangered in descending.

After crossing the main fork of the Des Moines, our route lay along the river, as near as we could well approach it; usually over a smooth, dry prairie, only occasionally interrupted by an otter-pond or a deep ravine. The soil is of medium quality, rather sandy, sometimes running into barrenness on the higher grounds; the bottoms are always rich; scrubby oak is the only tree on the high grounds.

Raccoon river affords good lands, fine timber and a large supply of water all the year; as there are no falls known in it; and as it is narrow and apparently free from obstructions, it may probably be navigated by light keels, during several months of the year, as high up as the Forks.

From Raccoon river to Opanoose's Village, with slight exceptions, the column passed over a country hilly, brushy, rough, marshy, and difficult of access; thence to Keokuk's Village, the route is less difficult; and the latter is easy of approach from Fort Des Moines.

The obstruction to the navigation of the Mississippi, just below this Post, [the Des Moines Rapids], is caused by three bars of rock running across the river, and forming barriers which prevent the river from assuming its natural level. The fall from head to foot of these rapids, a distance of $14\frac{1}{2}$ miles, is said to be $25\frac{1}{2}$ ft. This is certainly greater than I would have supposed, had it not been measured. Notwithstanding this great fall, I am assured by one of the most intelligent and experienced navigators of the river, that a channel, allowing steamboats to ascend and descend without difficulty, might be made by removing the rock, for a sum not much exceeding that annually paid by the Government alone for freight, above what it would be required to pay, were this obstruction obviated. This improvement would also enhance the value of public lands above, especially of the mining region; hence there would seem to be ample reason that the Government should execute this work, independently of the general encouragement it would give to commerce.

GAME. Of this we found little, on any part of our route. A few deer were usually seen every day, as we marched along, except in the highlands about Wabashaw's. Near the head of the Shakauk river, on the waters of the Ioway, and on the Des Moines, as low down as Raccoon, we found a few scattering elk, in herds of 2 to 10 only. Near Lake Hahawa we chased a herd of a dozen buffalo, and near the Ioway [Cedar], another of 100, which is all the buffalo we saw on the campaign. Furred animals are scarce every where, except about the sources of Shakauk and Buffalo [Iowa] rivers, where muskrats are abundant; there are also some foxes along there, some of which are white. Beaver has almost entirely disappeared, except on the Raccoon, and otter is no where in plenty. Indeed the extinction of all the larger and more valuable game in this region seems to be fast approaching. This is owing to the crowding of Indians upon tracts too small to afford them subsistence as hunters, and also to the inducements held out to them by the traders to kill many animals, valuable for food, for the sake of their skins alone. Consequently game is scarce. Fish is the only game still abundant, and with this every stream is well supplied.

POPULATION. The Sioux Indians have, from time immemorial, held most of the country which

they now inhabit, and in times past, they possessed much more. They extend from East of the Mississippi high up the Missouri, and from about latitude 43° north into the British possessions. They mostly live in villages, and depend in some degree upon the cultivation of the soil for subsistence; this is especially the case with those living along the St. Peter's [Minnesota] river, where villages are numerous; but many bands have no fixed residence, subsisting altogether by the chase, and wandering over their almost limitless prairies as the game may lead them. These bands are wild, fierce, faithless and intractable; those living in villages are more docile, but equally faithless. The most noted of the village-bands, Wabashaw's, is probably the most miserable; it is now merely the shadow of its former self, having dwindled down to 200 persons; their game is gone; of agriculture they know little and care less; summer and winter, they subsist almost exclusively on fish; and hence they are almost naked, look emaciated, and are miserable.

That district lying on the Missouri, south of the Sioux line [southwestern Iowa], ceded to the United States for a common hunting ground for the neighboring tribes, is little used by any of them, it being rather a *hostile* than a *neutral* ground. The United Nation of Pottawattamies,

Chippewas and Ottawas have by treaty been given 5,000,000 acres of this tract, and are now moving to it. There are about 6,000 of them, and there is not game enough in their country to feed them 2 years. The district between the Missouri river and the western line of the state of Missouri, relinquished by these Indians to the U. States, is a very valuable one. There are, or were, many squatters upon it, even in defiance of law. The Ioway Indians, once a powerful tribe, now a mere handful, are staying on it also; having sold all their lands, they now live at the mercy of Heaven.

The SAC and FOX nation, inhabiting chiefly along the Des Moines and the Ioway, contains only about 1,700 persons, of whom about 700 are Sacs. They live in 4 villages, the Sacs on the former river, the Foxes on the latter. Keokuks village contains 450, Opanoose's 350, Wawpello's 250, and Poisheik's [Poweshiek] 650 inhabitants, according to the best information to be obtained on the ground. In consequence of the great destruction of warriors in the war of 1832, the whole nation could not muster more than 300 fighting men. An inspection of the map [the sketch upon which his published map was based], with the preceding remarks in this paper, will show the extent and diversified character of their country, much of which is indeed very desirable. Such is their wan-

ton destruction of game, and their neglect of agriculture, that their subsistence has become so precarious that they will be forced, in a few years, to sell a portion of their lands for the means of living.

That part of the State of Missouri included in this map, owing to an excess of prairie and want of water, can never support a dense and regular population, though there is much rich land along the rivers and smaller streams. Many emigrants are establishing themselves along these fertile strips, and devoting themselves successfully to producing stock for distant markets.

The Half Breed Tract contains about a score of families, very few of whom are of mixed blood. They are chiefly emigrants who have purchased claims of the original grantees, and are not different from the usual frontier population. This Tract, together with Scott's Purchase [the Black Hawk Purchase], is attached to Michigan [Territory] for judicial purposes.

Scott's Purchase, or the New Purchase, as it is usually called, contained a very few families 2 years ago; but during the past, and especially the present year, multitudes of emigrants from contiguous, and even from the eastern States, have hurried into it. Its population is now about 12,000, excluding the transitory population about Dubuques' Mines [10,531 according to the census

taken in 1836 and including the Dubuque settlement]; and its numbers are hourly increasing, notwithstanding the country has not yet been surveyed, and consequently no titles to lands can be obtained. Much of this population is of that floating kind always found on the extreme frontiers, but it contains also many respectable and sober citizens. The district is capable of supporting, and of supporting well, an immense population compared with its extent; and those who have already settled upon it, have only made easy the entrance to others.

The materials, from which this map [which accompanied the report] has been constructed, are derived from personal observation, from oral information, from public documents and from other maps. The Missouri river is taken wholly from Tanner's Map of the United States, as also the St. Peter's river; the Mississippi is taken from the same map, except in places known to be inaccurate. No deviation has been made from Tanner, except on good authority. The Indian Boundaries have mostly been taken from Treaties; but the maps of the surveys of these routes, by order of Government, would afford accurate information not within my reach; these maps may be found in the Bureaus at Washington.

The route of the Detachment was surveyed by taking the course at every change, with a pocket compass, and by *estimating* the distance. These estimates, as tested by actual measurement, have proved to be wonderfully accurate. Much of the matter either shown on the map or expressed in this paper, has been given by Captain [Nathan] Boone of the Dragoons: he is probably better acquainted, personally, with the country included in this map, than any other person whatever.

Respectfully submitted.

A. M. Lea, of Tenn.
2d Lt. Dragoons.

Fort Des Moines

Nov. 4, 1835.

To/

Lieut. Colo. S. W. Kearny,
U. S. Dragoons,
Commanding.

Comment by the Editor

HISTORICAL NAVIGATION

Below the Raccoon Fork, reported Albert M. Lea, the Des Moines River was "a succession of rapids and eddies", obstructed by "numerous bars of loose white sand", and full of snags. In many places the water was so shallow that his canoe, requiring a depth of only twelve inches, could not pass freely. Keelboats, he thought, would have difficulty in clearing the sudden bends. And yet, if "a few loose rocks at various rapids" were removed, navigation would be possible in the spring when the water was high. The Des Moines, he remarked in conclusion, "is the most beautiful stream that I have ever traversed" and "destined soon to become the outlet of great mineral and agricultural wealth."

In a figurative sense, Lieutenant Lea's observations concerning the Des Moines River might be applied to the history of the country through which it flows. The first pioneers, who came to explore the land and discover potential resources, found the channel of their course filled with innumerable obstacles.

During the century that has passed since settle-

ment began, the people of Iowa have occasionally lost fortunes in the rapids and eddies of business; they have been stranded now and again on the shifting sandbars of social, economic, and political opinion; they have encountered treacherous snags of disease and sharp rocks of prejudice. Some of the most dangerous perils to safe navigation have been removed, but general welfare still depends upon the depth of experience in the stream of life.

Navigation of the course of events has been thrilling as well as arduous for the pilots and crew of this Commonwealth. There have been discouragements, but no major disaster. Perhaps the natural barriers to progress have added zest to ultimate achievements. Iowans may be proud of their history. It is, indeed, "the most beautiful stream that I have ever traversed".

J. E. B.

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