

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Great Plains Quarterly

Great Plains Studies, Center for

Winter 1984

Mapping The Missouri River Through The Great Plains, 1673-1895

W. Raymond Wood

University of Missouri-Columbia, woodw@missouri.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/greatplainsquarterly>



Part of the [Other International and Area Studies Commons](#)

Wood, W. Raymond, "Mapping The Missouri River Through The Great Plains, 1673-1895" (1984). *Great Plains Quarterly*. 1817.

<https://digitalcommons.unl.edu/greatplainsquarterly/1817>

This Article is brought to you for free and open access by the Great Plains Studies, Center for at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Great Plains Quarterly by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

MAPPING THE MISSOURI RIVER THROUGH THE GREAT PLAINS, 1673-1895

W. RAYMOND WOOD

For decades, "the Way West" referred not to any kind of overland trail but to the channel of the Missouri River. St. Louis became famous as the gateway to the West because it was the port of entry to the vast western domains drained in part by this mighty stream. Considering the extensive scholarship devoted to such land routes as the Oregon, Santa Fe, and Overland trails, it is curious that the equally important role of the Missouri River as an artery of exploration has been neglected. Only three works have made any real attempt to offer such a history, two of them popular.¹ The third, by Abraham Nasatir, is a short but heavily documented history of the river from its discovery in 1673 until 1805, when the course of the stream was finally explored in its entirety by Lewis and Clark.² Even so, the emphasis in Nasatir's study is on the two decades spanning the years 1785 to 1804.

An article by Raphael Hamilton is the only

A professor of anthropology at the University of Missouri-Columbia, W. Raymond Wood served as editor of Plains Anthropologist. In 1982 he published "William Clark's Mapping in Missouri, 1803-1804" in Missouri Historical Review.

[GPQ 4 (Winter 1984): 29-42.]

general study that describes and illustrates the history of the mapping of the Missouri River, but a host of published papers significantly augment Hamilton's work.³ Our purpose here is to draw these scattered sources together in a brief narrative for the period from 1673 to 1895. By the latter date the entire course of the river was known and accurately mapped in detail.⁴

From first to last the mapping of the river was inspired principally by commercial interests. For the first century and a half of the Missouri's modern history, Indian trade, especially for furs, dominated the reasons for map-making. Maps made during the next seventy-five years, on the other hand, were stimulated in large part by the needs of those using the steamboat to trade with and settle the West. The latter period ended about 1902, with the dissolution of the Missouri River Commission, a federal unit charged with improving the navigational capabilities of the river.⁵

This study of the mapping of the Missouri River requires that we consider the entire reach of the stream from the time of its discovery by European explorers. The first crude maps of the Missouri, as well as most later general maps, depicted Native American tribal

locations and other details on the Great Plains proper. These details extended well to the north and west of the mouth of the Kansas River, which, in some cultural schemes, marks the approximate eastern boundary of the Great Plains on the lower Missouri River. We are not concerned here with the precision of such details as Native American tribal locations, but rather with the developing exactness of the representation of the river itself through nine generations, or general stages, of Missouri River mapping. Each generation depicted a basic design of the river's configuration, and each ended as new data permitted significant refinement of that particular conformation.

THE FRENCH PERIOD: 1673-1770

The first-generation maps are those of Marquette and Jolliet. Although there are hints that the Spanish in the Southwest had learned from Indians of the existence of the Missouri River as early as 1541, Europeans did not actually lay eyes upon the stream until more than a century later.⁶ In late June 1673, Father Jacques Marquette and Louis Jolliet and their party passed the mouth of the Missouri on their way down the Mississippi River. Marquette, a Jesuit, and Jolliet, a frontiersman, provided a graphic description of the mouth of the Missouri River as they passed it—not surprisingly, since it would have been discharging its spring floodwaters into the Mississippi at the time. They named the Missouri the *Pikistanouï*, a name that survived in various spellings (and, no doubt, pronunciations) for several decades.⁷

The cartographic documentation of the Missouri by this expedition included only the position of the mouth of the river. Unfortunately, the originals of Jolliet's map were lost at Lachine Rapids, a few miles from Montreal, on his return home in 1674. He produced a copy of the map from memory, however, and his superiors sent it on to France. It too has been lost, although it was copied by several European cartographers before it disappeared. Father Jean Delanglez has reconstructed a prototype of the lost map (called the Jolliet "X" map) using five

such copies.⁸ On these maps, as well as on the autograph map Marquette produced in 1673-74, the Missouri is shown simply as a short stub of a stream entering the Mississippi from the northwest.⁹ The relationships between the various Marquette and Jolliet maps and their derivatives (as reconstructed by Father Delanglez) illustrate the kind of "genealogy" that must be prepared as the basis for a critical interpretation of these early maps.

For decades, Marquette and Jolliet's speculation that the Missouri River would provide a route to New Mexico fueled French interest in that stream as a means of reaching Mexico and its silver. As Bernard DeVoto said, "This idea was to confute government, diplomacy, and military strategy till the Great Valley became American, and to confuse geographical thinking till Lewis and Clark got home."¹⁰

The stublike depiction of the Missouri River persisted on copies of the lost Jolliet "X" map and on derivatives of the Marquette map produced by the French mapmakers Franquelin, Randin, and Bernou as late as the 1680s.¹¹ On a few maps of the period (such as the Coronelli 1688 map), the Missouri bears the name *Riv. des Ozages*, after one of the principal tributaries of the lower Missouri River and the important Indian tribe living along it in what is now western Missouri.¹² A few maps made as late as 1700 continued to show no real improvement over the Marquette and Jolliet sketches, in spite of the passage of time and the increasing number of French explorers, traders, and priests living near the mouth of the Missouri, some of whom penetrated a short distance up the river.

Less than a decade after Marquette and Jolliet's passage, René Robert Cavelier, Sieur de la Salle, also explored the Mississippi River, this time between the mouth of the Illinois River and the Gulf of Mexico. Assisted by his lieutenant, Henry de Tonti, La Salle and his party arrived at the mouth of the Missouri on 14 February 1682 as they moved downstream. Near the mouth of the Mississippi, La Salle took possession of the basin of the Mississippi River in the name of Louis XIV, naming the country *Louisiane* in his honor.¹³

After his return, La Salle produced a sketch of his impressions of the country of New France, apparently based in part on information obtained from a boy who is believed to have been a Wichita Indian slave.¹⁴ This information was probably augmented by data from other French explorers and priests who were familiar with the area of his map. Frenchmen were certainly in the Missouri valley by this time, for according to Pierre Margry, two French *coureurs de bois* were captured by the Missouri Indians and taken to their village in 1680 or 1681, about a year before La Salle's visit to the mouth of the Missouri River.¹⁵

La Salle's map (now lost) was passed along to Jean Baptiste Louis Franquelin in Paris when Franquelin served La Salle as a draughtsman in 1684 (fig. 1).¹⁶ This map provided the second generation of Missouri River charts and continued to be produced by Franquelin for many years. Although they were never published, Franquelin's maps became widely

known, for by 1686 he had become the royal hydrographer in Canada. The maps based on La Salle's data are readily identifiable by a distinctive and bizarre rendering of the lower reaches of the Missouri River, best described as "braided," with three immense "islands" depicted between what appear to be the lands of the Missouri and the Kansa Indians. The Kansas River was apparently mistaken for the Missouri proper, for the Pawnees (*Panimaha*) are shown on one of three northwesterly affluents of what is called, on the 1684 map and some other versions, *La Grande Riviere des Emissourittes*. The rider . . . *ou des Ozages* appears on the 1699 version.¹⁷

North of and parallel to the *Grande Riviere*, or Kansas River, is a stream that John Champe identified as the Platte River, with affluents to the north that he believed to represent the Loup forks, since these streams bear village symbols for the Pawnee. French information of the time obviously did not extend much

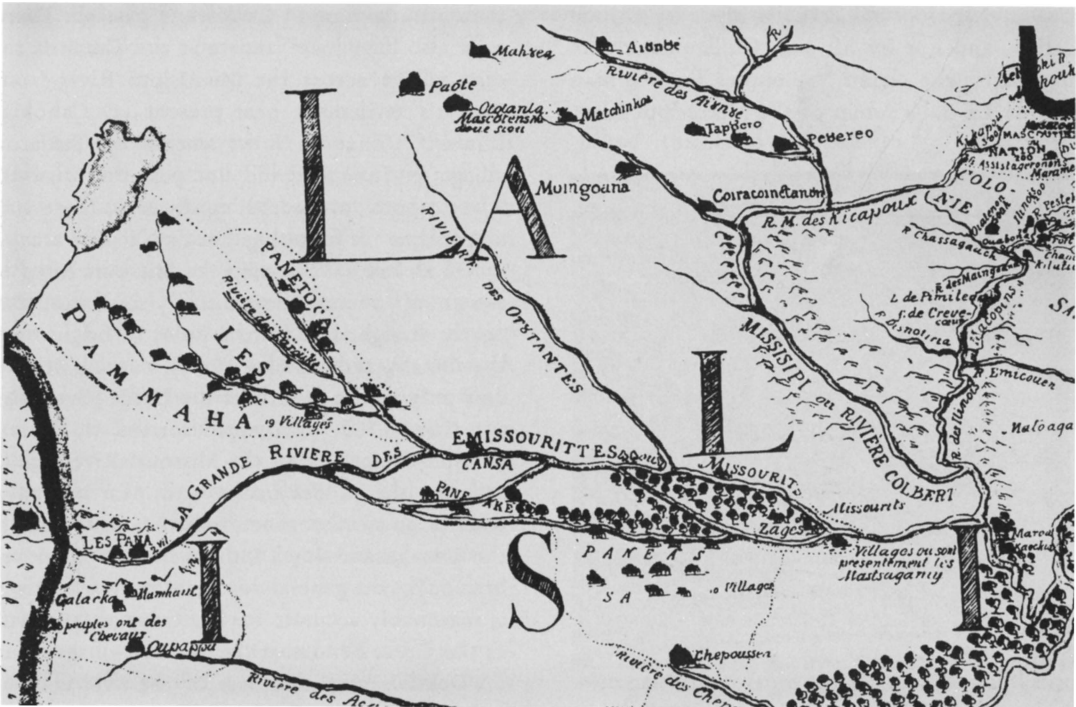


FIG. 1. Detail from the Franquelin 1684 map, based in part on La Salle's explorations. (From Temple, Supplement to Atlas: Indian Villages of the Illinois Country)

farther upriver than the Platte, because the river divides north of that stream (as identified by Champe): the west fork may represent the Niobrara, and the right fork, the Missouri.¹⁸

Other contemporary maps duplicate Franquelin's distinct configuration for the lower Missouri River. One of them is a chart by Minet, a French engineer who accompanied the La Salle expedition to the vicinity of the mouth of the Mississippi in 1685. Minet obviously used a La Salle map for the Mississippi and Missouri rivers.¹⁹

The next, and third, stage in representing the Missouri River is the 1703 Delisle map of North America, which shows the area of concern to us more realistically than any preceding attempt.²⁰ The map is a landmark in the history of mapping the river if for no other reason than that the sources Delisle used for the map are listed in a document in the Archives Service Hydrographiques in Paris; in most cases there is no record of the actual sources used to produce a given map of this period. The map in question was actually made by Claude Delisle, and not by his son, Guillaume, as the map cartouche claims.²¹ Sources for this map include La Salle's map of the Mississippi River

as copied by Franquelin in 1684, and Louis de la Porte de Louvigny's 1697 map of the Mississippi.²²

The 1703 Delisle map is based in large part on the explorations of Pierre-Charles le Sueur. In 1702, under Le Sueur's guidance, Delisle prepared a set of five maps entitled *Carte de la Riviere de Mississipi Sur le memoires de Mr. le Sueur*.²³ These five sheets were basic to the development of the Delisle 1703 map. The data came from Le Sueur's 1700 ascent of the Mississippi River. He traveled up the river from its mouth as far as the Minnesota River, thence to found a trading post, Fort l'Huillier, on the Blue Earth River. Le Sueur reached the mouth of the Missouri on 13 July 1700; the source for his data on the Missouri is uncertain but was probably derived from local traders or priests living near its mouth. Father Gabriel Marest, a French Jesuit, had settled at the mouth of the Des Pères River (now within the city limits of St. Louis), accompanied by a band of Kaskaskia Indians, in about 1700, and he may have been there at the time of Le Sueur's passage. There may also have been traders at the Tamaraoa Indian village across the Mississippi River from Marest's settlement near present-day Cahokia, Illinois.²⁴ Since Le Sueur reached the Tamaraoa village in June and did not pass the Missouri River mouth for another two weeks, there was ample time for him to gather data on the area.

On Delisle's 1703 map the Missouri River is shown as flowing almost directly southeast, in a nearly straight line from a point of origin near the Omaha Indians (*les Maha*), curving to the east only at the mouth of the Osage River (fig. 2). The 1702 prototype carried no detail beyond the course of the Missouri River itself, save for the *R. des Ozages* and, near its upper reaches on another sheet, two streams on which the Omaha and Iowa Indians lived.²⁵ Curiously enough, the general configuration of the river is reasonably accurate for its course as far north as the Great Bend near the Mandan villages, but on Delisle's map this part of the river is compressed by about half, so that it is shown as beginning at a point west and south of the headwaters of the Des Moines River.

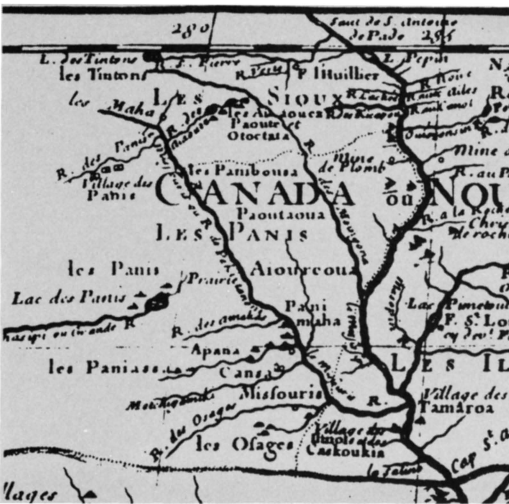


FIG. 2. Detail from the Delisle 1703 map, based in part on Le Sueur's explorations. (From Tucker, *Indian Villages of the Illinois Country*)

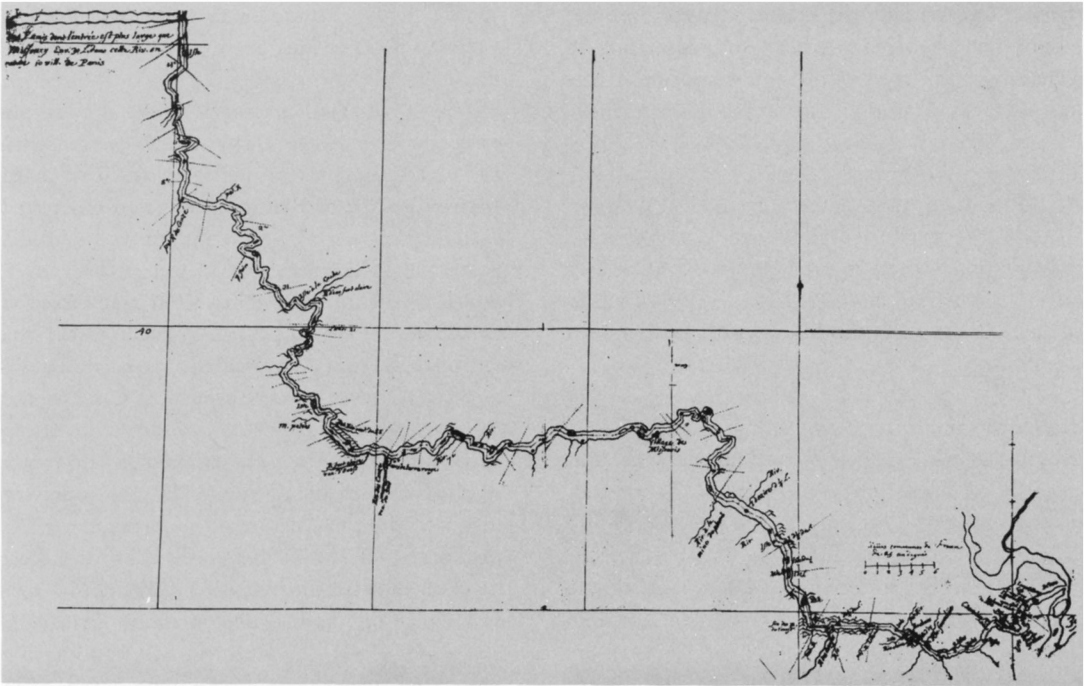


FIG. 3. *The Delisle map illustrating Bourgmont's explorations in 1714. (Service Historique de la Marine, Chateau Vincennes)*

The fourth-generation maps are those of Delisle and Mitchell. The finest map of the lower Missouri River to be produced prior to the late 1700s was a product of the exploration of the Missouri by Etienne Vèniard de Bourgmont in 1714. The map illustrates his explorations of the Missouri from its mouth to the Platte River. This manuscript map, although drawn by the famous French mapmaker Guillaume Delisle, did not have the impact one might expect, even on later maps by Delisle himself.²⁶ In any event, the chart is the earliest map resulting from the observations of a traveler on the Missouri, but it was made almost a half century after the river's discovery by European explorers (fig. 3).

The most important and influential map of the French period was the 1718 *Carte de la Louisiane* by Guillaume Delisle. The draft version, dated May 1718, was not changed for the Missouri and its tributaries when it was pub-

lished the following month.²⁷ Bourgmont's 1714 data permitted Delisle to delimit the lower reaches of the Missouri River more accurately, and in fact, the course of the stream is well represented as far upriver as the present Nebraska-South Dakota boundary, although the Kansas and Platte rivers are badly distorted (fig. 4).

Delisle's map was plagiarized and reproduced essentially in its original form in several languages from the time it was issued until the 1790s.²⁸ Though John Mitchell's map of 1755 introduced numerous refinements and an improved configuration for the Missouri River below the Kansas River, Mitchell's famous chart illustrates little that is new for the Missouri valley.²⁹ A great number of maps followed Mitchell's map from the date of its publication until the end of the century, sometimes vying in popularity with variants of the Delisle map of 1718.

CARTE DE LA LOUISIANE ET DU COURS DU MISSISSIPI *Dressée*



THE SPANISH PERIOD: 1770-1804

France ceded Louisiana to Spain in the secret Treaty of Fontainebleau in November 1762, although residents of Louisiana did not learn of the transaction until late in 1764. The first Spanish officials did not arrive in lower Louisiana for another two years, and it was 1767 before the Spanish actually made their presence felt in upper Louisiana, with the construction of Fort Don Carlos near St. Louis. French control of upper Louisiana was not surrendered to Spain formally until 1770.³⁰

St. Louis had been founded by the French in mid-1764, a century after the discovery of the mouth of the Missouri. The first settlement on the Missouri River itself, St. Charles, was made in 1769, and the small town of La Charette was founded almost thirty years later, in 1797. Although it was only a few miles from St. Charles, La Charette remained the settlement that was farthest upstream until the time of Lewis and Clark.

Informal trade with tribes on the Missouri continued, although the Spanish made efforts to limit trade to those who were licensed for the purpose. In 1794, the Baron de Carondelet, Louisiana's governor-general, and Jacques Clamorgan oversaw the founding of the Company of Discoverers and Explorers of the Missouri (better known as the Missouri Company). This company of local merchants was intent on exploiting the fur resources of the upper Missouri River. Clamorgan, the director of the company, planned a series of forts on the river and hoped eventually to extend the chain west to the Pacific Ocean. The first exploration of the river by the new company took place in the fall of 1794, when Jean Baptiste Truteau ascended the Missouri as far as present-day central South Dakota.³¹

No maps of the region he was to explore, however, were available to him. As late as 1785,

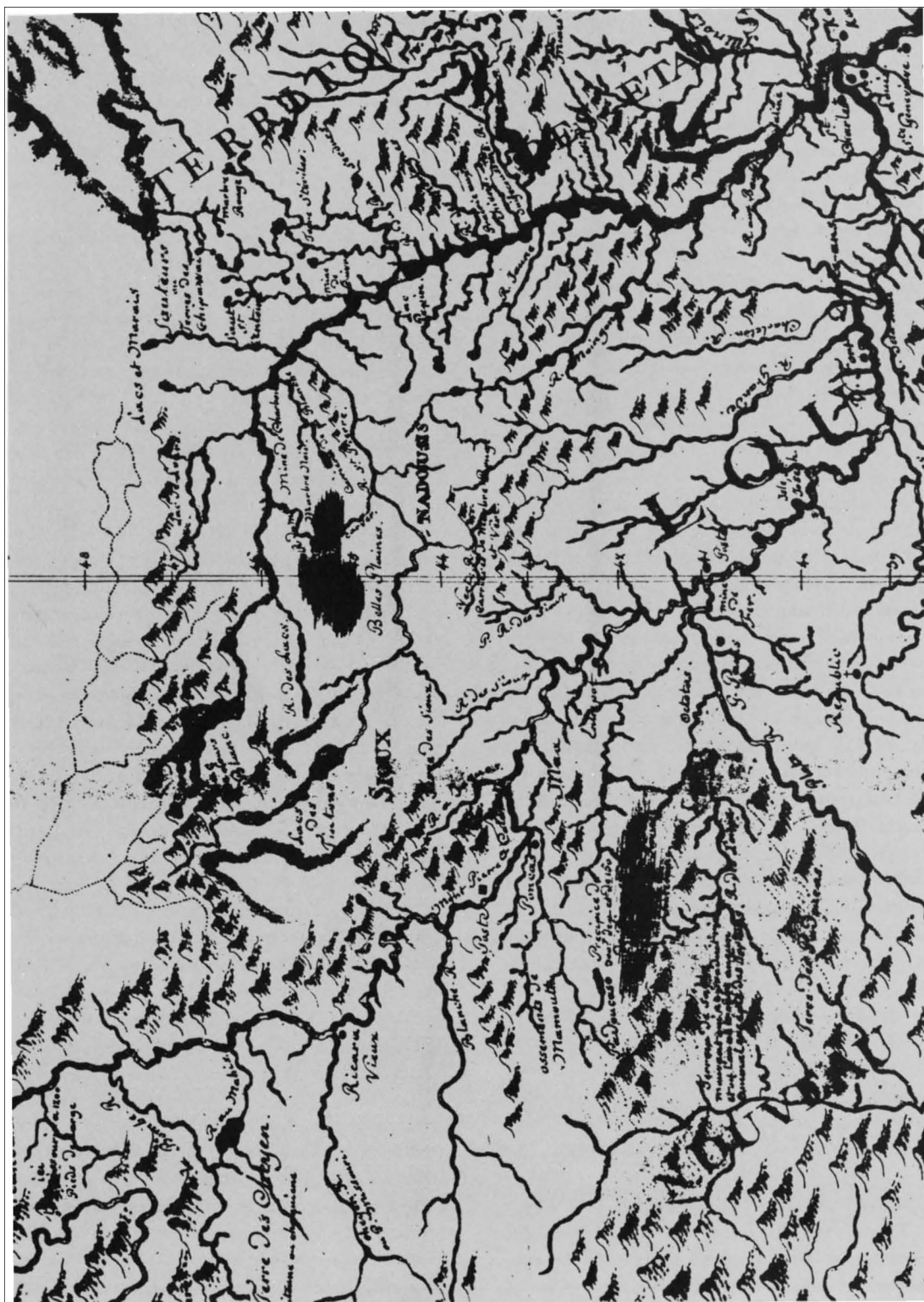
Esteban Miró, the Spanish governor-general of Louisiana in New Orleans, had no general maps of Spanish Louisiana.³² Nine years later, in November 1794, it was his successor, Governor-General Carondelet, who found it necessary to order "a wholly new map prepared for the information of Jean Baptiste Truteau's expedition up the Missouri River." This chart, drawn by Antoine Soulard, provided the fifth generation of Missouri River maps. Although the original map has been lost, no less than three copies of it are still extant.³³ Aubrey Diller has observed that the map was "virtually the first original and independent map of the river since Delisle's famous" map of 1718.³⁴ The chart owes a great deal to Canadian traders, one of whom appears to have been James Mackay, for the characteristics shown on the upper reaches of the Missouri.³⁵

The Soulard map is distinguished by its characterization of the "Grand Detour" of the Missouri River in present central South Dakota as an immense U-shaped bend many times its actual size, below which the river is charted relatively precisely. Above the bend, however, the river is almost wholly speculative. Maps based on the Soulard chart carry the distinctively exaggerated Grand Detour and are easily recognized. The Samuel Lewis map of 1804 and, in turn, its derivatives (such as the maps used to illustrate Patrick Gass's account of the Lewis and Clark expedition) are thereby identifiable as such.³⁶

Truteau's travels, which may have carried him to modern central South Dakota above the Grand Detour, resulted in no maps of his own. Data from his expedition were, however, incorporated into the narratives and maps of others. The account and maps of General Victor Collot dating to 1796, for example, owe a great deal to Truteau.³⁷

Except for the Soulard map, the Spanish produced no significant charts of the Missouri River during the time they ruled upper Louisiana—that is, until 1797. Furthermore, the Soulard map was inaccurate, even for the lower Missouri River, which by now was well traveled. The sixth-generation maps were based on the

←
FIG. 4. *Detail from the engraved Delisle 1718 map. (From Paullin's Atlas of the Historical Cartography of the United States)*



explorations of James Mackay and John T. Evans. In 1795, Mackay and Evans were sent up the Missouri by the Missouri Company to help open the area to Spanish traders. A map usually referred to as the "Indian Office map," but almost unanimously credited to James Mackay, was produced in St. Louis in 1797 following the return of the Mackay-Evans expedition.³⁸

The Indian Office map is a very exact rendering of the river from St. Charles, Missouri, to the Mandan villages. The person responsible for the lower part of the map is unknown, but it is certain that a map produced by John Evans in 1796-97 of the river from the mouth of the Big Sioux River to the Mandan villages was the basis for the upper part of the chart. It is in fact possible that Evans supplied the sketches for the entire map.³⁹ In any event, the Indian Office map and the map produced by John Evans were used in the construction of no less than ten secondary maps in French, Spanish, and English.⁴⁰

One such map was produced in Paris in 1802 by a French merchant of New Orleans, James Pitot, on the basis of sketches he received from Barthélemy Lafon. Several variants of this map, originally described by Carl I. Wheat simply as "The Mississippi, 1802," have been published.⁴¹ The Missouri River as far upstream as the Mandan villages is well represented. A Soulard-type Grand Detour was retained, but it was pushed upriver into terra incognita, so that the Mandan and the nearby Arikara villages are shown on its eastern or downstream margin (fig. 5). This general area marks the locale where the Missouri River makes the great turn to the south that later led to its designation as the "Great Bend," a term sometimes confused with "Grand Detour."

Louisiana was secretly transferred from Spain to France in 1800, but before any effective French control could even be contemplated,

Napoleon resold the territory to the United States in May 1803. It was not until the following March, in 1804, that the Spanish formally relinquished control of upper Louisiana to the French, and the next day the United States took possession of the region.⁴²

THE AMERICAN PERIOD: 1804-1895

The seventh generation of maps are those produced by Lewis and Clark. Our knowledge of the maps generated by the two captains during their 1804-1806 expedition has been significantly updated by several recent studies.⁴³ Before the expedition left Camp Dubois near St. Louis, the captains had accumulated the latest and most reliable charts of the Missouri River then extant anywhere, including copies of those by Soulard, Evans, and Mackay. During the expedition itself, Clark (occasionally assisted by Lewis) produced maps of their entire route across the continent. There was no public release of these maps until 1814, with the publication of Nicholas Biddle's *History of the Expedition* (fig. 6).⁴⁴ The general map in that volume, engraved by Samuel Lewis, was prepared from an 1810 chart by William Clark that synopsized the expedition's many detailed route maps.

No less than four members of the Lewis and Clark entourage kept journals that have survived. Only one of them (Gass's) was illustrated by a map, and it was no more than a version of the pre-expeditionary Samuel Lewis map of 1804—a map showing no improvements for the upper Missouri over its predecessor from the Spanish era, the 1795 Soulard map. One original map was prepared with the assistance of Robert Frazer, a member of the expedition, for a book that was never published. This curious map leans heavily on the 1796-97 Evans map, apparently having been drawn by a French cartographer in St. Louis in 1807.⁴⁵

The Clark map engraved by Samuel Lewis remained the standard chart of the Missouri River for more than forty years after its publication by Biddle. The advent of steamboat navigation on the river, however, brought on an avalanche of new and improved maps.

←

FIG. 5. Detail from the Pitot/Lafon 1802 map. (*Service Historique de la Marine, Vincennes*)



FIG. 6. Detail from the Samuel Lewis engraving of William Clark's map of 1810. (From Biddle, *History of the Expedition*, 1814)

A craft called the *Yellowstone* was the first steamboat to ascend the Missouri River as far as the Yellowstone River, completing the round trip in 1832. Not long after this memorable voyage, charts of the river by military passengers began to appear as steamers made more and more frequent trips upstream. These charts provide the eighth generation of Missouri River maps.

One of the first of this group was a map

prepared by Joseph N. Nicollet and his assistants for the Corps of Topographical Engineers. It was made in 1839 during an ascent of the river on the steamboat *Antelope* from the Gasconade River, in present-day Missouri, to Fort Pierre, in central South Dakota. Nicollet's detailed sectional map includes geological data, the tortuous path of the steamboat up the river channel, Indian camps along the river, and nightly stopping places along the route.⁴⁶

One of Nicollet's fellow passengers for part of this journey was a Jesuit, Father Jean-Pierre DeSmet. This priest, later to become famous on the western frontier, boarded the boat at a point near modern Council Bluffs, Iowa, for an excursion of about 360 miles upstream. His destination was a Dakota Indian camp at the mouth of the Vermillion River, near present-day Elk Point, South Dakota. Father DeSmet left a detailed map of this thirteen-day expedition. The precision and detail of this chart, far more elaborate than any of his other manuscript maps, is easily explained: it is a close copy, although not a tracing, of part of Nicollet's map of this part of the Missouri.⁴⁷ DeSmet's map, however, is more useful historically than Nicollet's charts in that he added data to his version that were ignored by Nicollet—the locations, for example, of many Indian camps and villages of the period near present-day Omaha, Nebraska.

In the next fifteen to twenty years, military cartographers produced several general maps that brought the mapping of the river to a higher standard of precision. Isaac I. Stevens's three-part map appeared in 1855: sheet 2 shows the Missouri River from Fort Pierre to its headwaters.⁴⁸ In 1853, Lieutenant A. J. Donelson, a member of Stevens's party then exploring a railroad route from St. Paul to the Pacific Ocean, surveyed the Missouri River from its mouth to a point just west of Fort Union (near the modern boundary between North Dakota and Montana), where he met with Stevens's main party. Unfortunately, Donelson's maps were "mostly lost afterwards on the Isthmus of Panama, and [Stevens's] map was made from incomplete notes."⁴⁹ Stevens's map west

of Fort Union, however, was more accurate; with its more precise rendering of the Missouri's route through what is today Montana, it represents an important contribution to the mapping of the river.

In 1855 and 1856 Lieutenant Gouverneur K. Warren mapped parts of the Missouri River on charts that were basic to the production of his general map of 1857, which showed the Missouri from its mouth to its source. The latter map was based on all previous surveys and explorations known to Warren, and was acclaimed by Wheat as superior to all of its predecessors in detail.⁵⁰ Warren's 1856 manuscript map of the Missouri River from the Big Nemaha to the Big Muddy River, sixty miles west of Fort Union, was the first significant

eyewitness map of that portion of the river to be produced since Clark made his own charts, since most of Donelson's charts made three years earlier had been lost. Made to the same scale as a fifteen-minute United States Geological Survey quadrangle, Warren's manuscript maps show many details of historic significance, such as those in the vicinity of Fort Clark, North Dakota (fig. 7). Many of these details were deleted from his general map of 1857.⁵¹

The surveys of Captain W. F. Reynolds and Lieutenant H. E. Maynadier of the topographical engineers in 1859 and 1860 charted western South Dakota and southern Montana. Their "Map of the Yellowstone and Missouri Rivers," published in 1860, set a new standard for the

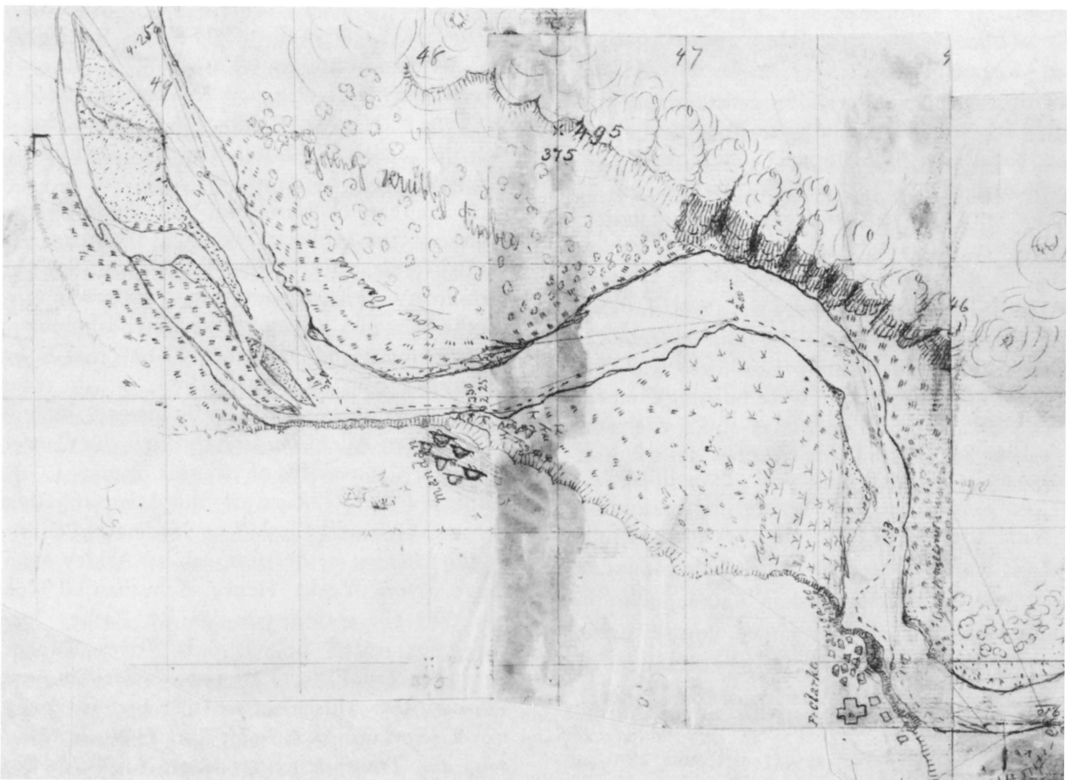


FIG. 7. Detail from the Warren 1856 manuscript map of the Missouri River, showing Fort Clark and its environs. (National Archives)

upper Missouri River.⁵² The stage was now set for the next step in mapping; modern cartographic standards were about to arrive.

The ninth-generation maps were engraved sectional charts. In the 1860s, sectional maps were made for the upper Missouri River, illustrating the channel and valley of the river in great detail and designed expressly for the use of steamboat pilots. One of the first such charts, made in 1867 by Major C. W. Howell, was a manuscript map in seventeen sheets showing the Missouri between the Platte River and Fort Benton, Montana. His sketches, "made from the Pilot House of a steamboat, while in motion," were collated and arranged on the basis of Raynolds's 1860 map.⁵³

By 1890 the Missouri River Commission had completed the task of secondary triangulation for the Missouri River. Modern mapping had arrived, and the river was now mapped with precision from its mouth to Three Forks. Two important sets of maps date from this period: the Missouri River Survey maps, dated 1892, and the Missouri River Commission maps, published in 1892-95 in eighty-four individual sheets. Engineer O. B. Wheeler described some of the conditions the surveyors faced in completing the secondary triangulation near Fort Benton, Montana, in 1889:

The season was unusually dry, and the river never known so low. The smoke from the mountain forest and prairie fires was very dense, for the Indians were burning the prairies that the buffalo bones could the more easily be secured for market at the railroad stations.⁵⁴

With the publication of these beautifully and delicately engraved charts, the Missouri River was at last revealed in detail, including channel depths, for its entire course. Later mapping made only minute improvements on these maps, principally in recording its ever-changing channel and in documenting the destruction of the river as a free-flowing natural stream in the post-World War II period. The Pick-Sloan construction program created six massive earthen dams across its valley that

flooded nearly eight hundred miles of the river through the Great Plains states of North and South Dakota and Montana, transforming a once-proud river into what has been called a "federal canal."

This abbreviated account of the mapping of the Missouri River does little justice to the richness of the historical data available. Such a survey nevertheless permits us to envision the major steps by which the stream was gradually revealed to the world by the explorers and surveyors who charted this part of the American West.

NOTES

The author thanks Robert E. Karrow, curator of maps at the Newberry Library, Chicago, Illinois, for his patience in providing access to the Karpinski map collection.

1. Phil. E. Chappell, "A History of the Missouri River," *Transactions of the Kansas State Historical Society for 1905-1906* 9 (1906): 237-94; and Stanley Vestal, *The Missouri* (New York: Holt, Rinehart & Winston, 1945).

2. A. P. Nasatir, *Before Lewis and Clark*, 2 vols. (St. Louis: St. Louis Historical Documents Foundation, 1952).

3. Raphael N. Hamilton, "The Early Cartography of the Missouri Valley," *American Historical Review* 39 (1933-34): 645-62. See also Hamilton's Ph.D. dissertation, "A Cartography of the Missouri Valley to the Establishment of 'La Compagnie d'Occident', 1717" (St. Louis University, St. Louis, 1931).

4. Basic sources for this history include John Logan Allen, *Passage through the Garden* (Urbana: University of Illinois Press, 1975); Aubrey Diller, "Maps of the Missouri River before Lewis and Clark," in *Studies and Essays in the History of Science*, ed. by Ashley Montague (New York: Henry Schuman, 1946), pp. 505-19; various studies by Father Jean Delanglez, cited below; Sara Jones Tucker, *Atlas: Indian Villages of the Illinois Country*, Illinois State Museum Scientific Papers, vol. 2, no. 1 (Springfield, 1942); Carl I. Wheat, *Mapping the Transmississippi West: 1540-1861*, 5 vols. (San Francisco: Institute of Historical Cartography, 1957-1963); and citations following.

5. U.S. War Department, "Supplement to the Report of the Chief of Engineers," *Annual Report of the War Department for . . . 1902* (Washington, D.C.: GPO, 1902), pp. 175-83.

6. Bernard DeVoto, *Course of Empire* (Boston: Houghton Mifflin, 1952), p. 52.

7. Francis Borgia Steck, "The Jolliet-Marquette Expedition, 1673," *Catholic University of America Studies in American Church History* 6 (Chicago: Catholic University of America, 1928).

8. Father Jean Delanglez, "The Jolliet Lost Map of the Mississippi," *Mid-America*, n.s., 17 (January 1946): 67-144.

9. The Marquette "autograph map" is reproduced in Tucker, *Indian Villages*, pl. 5; the original is in the Archives de la Compagnie de Jésus (Québec).

10. DeVoto, *Course of Empire*, pp. 121-22.

11. Father Jean Delanglez, *Hennepin's Description of Louisiana* (Chicago: Institute for Jesuit History, 1941), pp. 108-9.

12. Wayne C. Temple, *Supplement to Atlas: Indian Villages of the Illinois Country*, Illinois State Museum Scientific Papers, vol. 2, no. 1 (Springfield, 1975), pl. 60, contains a legible reproduction of this map.

13. Father Jean Delanglez, *Some La Salle Journeys* (Chicago: Institute for Jesuit History, 1938), p. 78.

14. Mildred Mott Wedel, "The Identity of La Salle's Pana Slave," *Plains Anthropologist* 18 (August 1973): 203-17.

15. Gilbert J. Garraghan, *Chapters in Frontier History* (Milwaukee: Bruce Publishing Co., 1934), pp. 56-57; Garraghan cites Pierre Margry, *Découvertes et Établissements des Français dans l'Ouest et dans le Sud de l'Amérique Septentrionale, 1614-1754*, 6 vols. (Paris, 1879-86), 2: 203, 325-26.

16. Father Jean Delanglez, "Franquelin, Map-maker," *Mid-America*, n.s., 14 (January 1943): 34.

17. Temple, *Supplement to Atlas*, pl. 59.

18. John L. Champe and Franklin Fenenga, "Notes on the Pawnee," in *Pawnee and Kansa (Kaw) Indians*, ed. by David Agee Horr (New York: Garland Publishing, 1974), p. 49.

19. Tucker, *Indian Villages*, pl. 7.

20. *Ibid.*, pl. 13.

21. Father Jean Delanglez, "The Sources of the Delisle Map of America, 1703," *Mid-*

America, n.s., 14 (July 1943): 276-77.

22. *Ibid.*, pp. 285-87; and Tucker, *Indian Villages*, pl. 14.

23. The activities of Le Sueur have been confused by a long and tangled publication record. For a review of his activities and a clarification of that record, see Mildred Mott Wedel, "Le Sueur and the Dakota Sioux," in *Aspects of Upper Great Lakes Anthropology*, ed. by Elden Johnson (St. Paul: Minnesota Historical Society, 1974), pp. 157-58.

24. Gilbert J. Garraghan, "The First Settlement on the Site of St. Louis," *Mid-America*, n.s., 9 (October 1927): 342-47; and Nasatir, *Before Lewis and Clark*, 1: 6.

25. The original map is in the Archives Service Hydrographiques, Paris, cataloged as 138BIS 3-2; a photocopy is in the Karpinski collection in the Newberry Library, Chicago.

26. The map was first recognized in 1979 by Mildred and Waldo Wedel in the Service Historique de la Marine, Vincennes, catalog number 4040 C. 21. A description of the map by Elizabeth R. P. Henning may be found in W. Raymond Wood, *An Atlas of Early Maps of the Midwest*, Illinois State Museum Scientific Papers, vol. 18 (Springfield, 1983), p. 1, pl. 1.

27. The draft version was published by Tucker, *Indian Villages*, pl. 15; the published version is available in many sources, including Charles O. Paullin, *Atlas of the Historical Cartography of the United States*, ed. by John K. Wright (New York: Carnegie Institution of Washington and American Geographical Society of New York, 1932), pl. 24.

28. Hamilton, "Early Cartography," p. 655.

29. *Ibid.*, p. 658; and Temple, *Supplement to Atlas*, pl. 70.

30. William E. Foley, *A History of Missouri* (Columbia: University of Missouri Press, 1971), 1: 14.

31. Nasatir, *Before Lewis and Clark*, 1: 84-91.

32. *Ibid.*, p. 119.

33. *Ibid.*, 2: 253; Wheat, *Transmississippi West*, 1: 157, and maps 234-235a.

34. Aubrey Diller, "A New Map of the Missouri River Drawn in 1795," *Imago Mundi* 12 (1955): 175-80.

35. Nasatir, *Before Lewis and Clark*, 1: 96; and Wheat, *Transmississippi West*, 1: 158, note 5.

36. The Lewis 1804 map may be found in

reproduction in Paullin, *Historical Cartography*, pl. 28; and in Patrick Gass, *A Journal of the Voyages and Travels of a Corps of Discovery under the Command of Capt. Lewis and Capt. Clarke* . . . (Philadelphia: Matthew Carey, 1810); see also Wheat, *Transmississippi West*, 2: 14–15, and map 300.

37. Victor Collot's map of the upper Louisiana region was not published until 1826 in *A Journey in North America*, 2 vols., one atlas (Paris: Arthur Bertrand, 1826), although the data on the map relate to the year 1796.

38. Although circumstantial evidence favors Mackay as the original author, the actual draftsman of the Indian Office map is unknown; see Diller, "Maps of the Missouri River," pp. 513–16; and W. Raymond Wood, "Notes on the Historical Cartography of the Upper Knife-Heart Region," Report prepared for the Midwest Archeological Center, Lincoln, Nebraska (Lincoln, 1978), pp. 26–31. John Francis McDermott, in a telephone conversation with the author in 1979, said that he knew who the draftsman was, but he was not prepared to reveal his identity. The answer may therefore be among McDermott's archives; he died in 1981.

39. Gary E. Moulton, *Atlas of the Lewis and Clark Expedition*, vol. 1, *The Journals of the Lewis and Clark Expedition* (Lincoln: University of Nebraska Press, 1983), p. 6.

40. W. Raymond Wood, "The John Evans 1796–97 Map of the Missouri River," *Great Plains Quarterly* 1 (Winter 1981): 51, note 1.

41. Henry C. Pitot, *James Pitot (1761–1831): A Documentary Study* (New Orleans: Louisiana Landmarks Society, 1968), pp. 47–52, details the origins of this map. Various versions may be found in reproduction in the Pitot study, p. 47; in Nasatir, *Before Lewis and Clark*, vol. 1, opposite p. 110; and in Wheat, *Transmississippi West*, vol. 1, map 255.

42. Foley, *History of Missouri*, pp. 63–71.

43. The most recent summary is that of Moulton, *Atlas of Lewis and Clark Expedition*, and the sources cited therein.

44. [Nicholas Biddle, ed.], *History of the Expedition under the Command of Captains Lewis and Clark . . . 1804–5–6*, prepared for the press by Paul Allen, 2 vols. (Philadelphia: J. Maxwell, 1814).

45. Wheat, *Transmississippi West*, 1: 46–48, map 286.

46. Edmund C. Bray and Martha Coleman Bray, *Joseph N. Nicollet on the Plains and Prairies* (St. Paul: Minnesota Historical Society, 1976), pp. 135–69; and the Joseph N. Nicollet Papers, vol. 2, part 2: sheets 354–418, in the Manuscripts Division, Library of Congress.

47. Hiram Martin Chittenden and Alfred Talbot Richardson, *Life, Letters and Travels of Father Pierre-Jean DeSmet, S. J., 1801–1873*, 4 vols. (New York: Francis P. Harper, 1905), 1: 179–90. The original maps are in the Jesuit Provincial Archives, St. Louis; they are cataloged as C-8, Atlas, item 11, in the microfilm copy in the Vatican Film Library, Pius XII Library, St. Louis University, St. Louis.

48. Wheat, *Transmississippi West*, 4: 71–72, map 865.

49. Lt. Gouverneur K. Warren, *Memoir to Accompany the Map of the Territory of the United States from the Mississippi River to the Pacific Ocean*, 33d Cong., 2d sess., H.R. Exec. Doc. 91, vol. 11 (1855), p. 67.

50. Wheat, *Transmississippi West*, 4: 84–91, map 936.

51. National Archives, Record Group 77, Q579/140.

52. Wheat, *Transmississippi West*, 4: 183–87, map 1012.

53. National Archives, Record Group 77, Q137.

54. U.S. War Department, *Annual Report of the Chief of Engineers*, part 4 (Washington, D.C.: GPO, 1890), p. 3398.