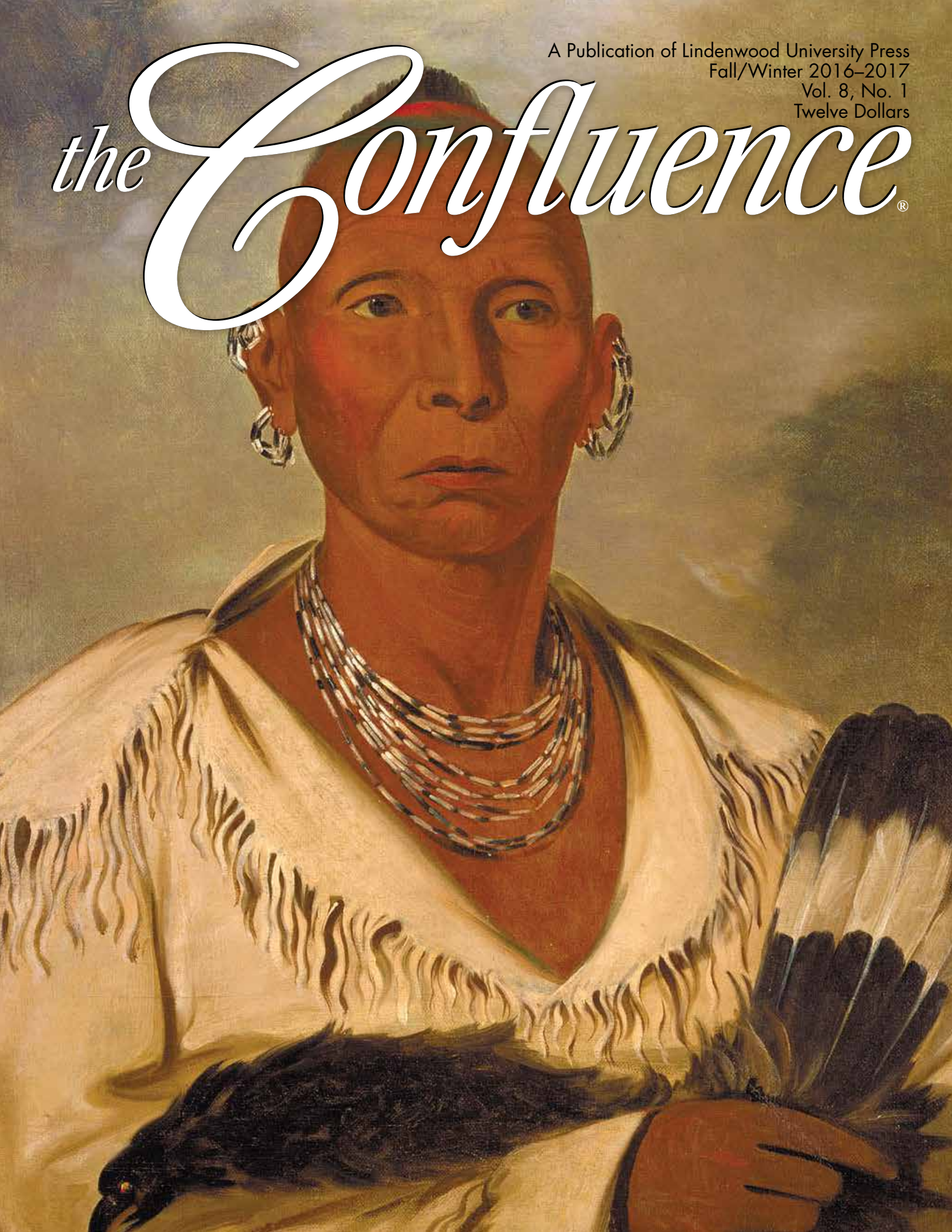


A Publication of Lindenwood University Press  
Fall/Winter 2016-2017  
Vol. 8, No. 1  
Twelve Dollars

# *the Confluence*<sup>®</sup>



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## C O V E R   I M A G E

Black Hawk (1767–1838) was a Sauk war leader in present-day northwestern Illinois, southwestern Wisconsin, and eastern Iowa. He opposed the cession of tribal lands in Illinois, and questioned the validity of a series of treaties signed by the Sauk and Fox starting in 1804. For more on this Sauk leader and his legacy, see Jeffrey Smith, “William Clark, Black Hawk, and the Militarization of Indian Removal.” (*Image: National Museum of American Art*)

C O N T E N T S



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William Clark, Black Hawk, and the Militarization of Indian Removal  
By Jeffrey Smith

What became known as Black Hawk's War pointed to the problems with treaties signed between the United States government and native tribes. Misunderstandings, cultural differences, and changing demands for land contributed to Indian removal, which erupted into warfare between the Sauk and Fox tribes and the United States Army. Former explorer William Clark was in the center of it.



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So Much to Learn: The Ozark National Scenic Riverways and Its Karst Landscape  
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Emerging from Lyndon Johnson's Great Society, the Ozark National Scenic Riverway profoundly changed both the long-term landscape in the region and the ways people used that land, as Quinta Scott's elaborately illustrated article suggests.



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Over the Santa Fe Trail to Mexico: The Diaries and Autobiography of Dr. Rowland Willard, 1825–1828  
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Rowland Willard's journey to Mexico is more than a travel account. He gives us insights into the nature of medicine, the ways people interacted with the land, and the nature of a new emerging blended culture of Americans, Mexicans, and native peoples in what became the American southwest.

*The Confluence* is a regional studies journal published by Lindenwood University and dedicated to the diversity of ideas and disciplines of a liberal arts university. It is committed to the intersection of history, art and architecture, design, science, social science, and public policy. Its articles are diverse by design.

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## ACKNOWLEDGEMENTS

An undertaking like *The Confluence* doesn't happen without the help of many people, both within Lindenwood University and beyond. We owe particular thanks to President Michael Shonrock, Provost Marilyn Abbott, and the Board of Directors at Lindenwood for supporting this venture. We'd like to take this opportunity to extend our gratitude to the following people, institutions, and companies for their contributions to this issue of *The Confluence*; we could not have done it without you.

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## FROM THE EDITOR

In an age of instant information, 'round-the-clock news cycles, and fast travel, it's easy to lose track of how our sense of time has changed. It's happened fairly quickly; my mother was born the same year Charles Lindbergh crossed the Atlantic, and she saw us fly across the continent, for example, in a matter of just a few hours—all in the matter of just one lifetime. I bring this up because the articles in this issue deal with our sense of time and place, and the time getting from one place to another.



Consider William Clark, the subject of our first article. Clark was the ninth of ten children when he was born in 1770; his two brothers served in a Continental Army that moved troops and materiel in a similar way to Julius Caesar, on wheeled or floating vessels pulled by animals or people, riding large animals, or on foot. When he and the Corps of Discovery left Camp DuBois in May 1804, their travel technology was ancient—a keelboat with a sail and oars, some smaller boats, and horses. Yet by the time of the article in this issue just a generation later, steamboats dominated the Mississippi and Missouri rivers. Troops traveled north to intercept Black Hawk and his followers in a matter of days thanks to steam power rather than having to tow vessels against the current upriver. In a little over a decade, Clark had to reconsider and adjust his entire view of time and place—and his relationship to it. And it shaped national events.

In a similar way, Joy Poole's excerpts of Dr. Rowland Willard's writings on his journey along the Santa Fe Trail and time in the southwest expand notions of the nation itself. When the Trail opened, it completely altered the relationship between the new state of Missouri and the trade in northwestern Mexico centered in Santa Fe. The commercial implications were profound, as the trade between Missouri towns along the river and Santa Fe burgeoned from St. Louis to Westport (the future Kansas City). Willard's impressions give a valuable insight into the changing contours of both place and economy.

Quinta Scott offers a different perspective on the land and our relationship to it, focusing on the natural world in the late twentieth and early twenty-first centuries. Instead of seeing the natural world as a series of commodities to be used and exploited, Scott traces the notion of landscape and view as a sort of commodity in and of itself as a place we preserve for people to use, enjoy, and rejuvenate.

Imagine how profound the changes were that Clark and Willard witnessed, and those suggested by Scott's work. In an age of rapid change, these articles suggest the need to understand the power of change in our perceptions of time and place.

Jeffrey Smith, PhD  
Editor

# William Clark, Black Hawk, and the Militarization of Indian Removal

BY JEFFREY SMITH



When William Clark stepped off a steamboat at Jefferson Barracks, just below St. Louis, in September 1832, he figured he had finally won. Clark, Indian Commissioner for the region, took the Sauk chief Keokuk and his entourage to the barracks prison to visit the latest arrivals, Black Hawk and a half-dozen of his fellow leaders. Clark and Keokuk knew they were in the midst of a new era of relations between the native peoples and the expanding United States. All three leaders—William Clark, Keokuk, and Black Hawk—thought they were promoting the best interests of Native Americans, too. During the 1820s, Clark had come around to the view that proximity to whites was hindering the process of “civilization”—making the Indians in the white man’s image—and that clearly the Indians needed to relocate away from the corrupting influences of white society where they could grow and evolve—become “civilized”—at their own pace. American officials like Clark and Lewis Cass held that the federal government was obliged to provide everything needed to facilitate the process; Clark believed the move should come of mutual consent, whereby the Indians agreed to move and to an agreeable location.

Thanks to William Clark, Keokuk had risen to a position of prominence and leadership among the Sauks. Clark supported the rising Sauk leader with gifts and supplies that he could take back to the tribe, solidifying his position there. He was among the Native American leaders Clark took back to Washington to meet the president. There, Keokuk became convinced that American expansion was inevitable, that whites were too numerous to resist, and that survival depended on figuring out how to accommodate them. By decade’s end, the Sauk leader was squarely in the American camp and held substantial (but not total) control within his community. Black Hawk, by contrast, held fast to traditional views. He had a strong connection to the land in northwestern Illinois, distrusted the Americans, and felt that the Sauk should never succumb to American lifestyles, alcohol, clothes, or dictates. Yet these three men came together in 1832 at the prison at Jefferson Barracks as symbols of fundamental changes under way. When they stood at the barracks on that fall day, they represented a critical change in the relations between the United States and the Native American tribes it had pushed farther and farther west, as proof that the United States government would stop at nothing to spread its



By the time George Catlin painted this portrait, William Clark had been overseeing relations between western tribes and the United States government for almost a quarter of a century. In Washington, officials generally thought of Clark and Secretary of War (and former Michigan territorial governor) Lewis Cass as perhaps the most knowledgeable federal officials on tribal affairs. *(Image: National Museum of American Art)*

wings and people across the continent. How did they get here, how did it end up like this, and what did it mean for future relations between the United States and the tribes?

The roots of the problem stretched to the “three flags ceremony” in St. Louis in March 1804. It really wasn’t much, as ceremonies go, although the impact of the transfer of Louisiana to the United States was profound. Spain symbolically transferred the territory to France, which then transferred it to the United States the following day. Among the highest-ranking American military officials on hand were Captains Meriwether Lewis and William Clark, co-commanders of the Corps of Northwest Discovery. But Lewis and Clark weren’t the only foreign dignitaries in town when the transfer took place. Also on hand was a delegation of Sauk and Fox Indians, most likely including a warrior named Black Sparrow Hawk, in town to settle a dispute over the murder of some white settlers by four Sauk hunters the previous

Left—Black Hawk came to symbolize the fight over land ownership between the tribes and the United States government and the problems with former treaties. *(Image: Missouri History Museum)*



When the United States purchased Louisiana from France, a ceremony in St. Louis in March of 1804 symbolized the land transfer in upper Louisiana. Often referred to as the “three flags ceremony,” the land was transferred from Spain to France, then from France to the United States. Black Hawk was almost certainly on hand for it, as was Capt. Meriwether Lewis, Clark’s co-captain in the Corps of Discovery, which was encamped across the river in Illinois. (Image: Missouri History Museum)

year.<sup>1</sup>

The event historians call “Black Hawk’s War” was the culmination of almost three decades of strained relations with the Sauk and Fox tribes in northwestern Illinois and eastern Iowa; for most of that time, William Clark was a central player representing the interests of the United States. It was a relationship that tested not only Clark’s natural patience but everything he had learned as well. Clark had signed more treaties with Native Americans than perhaps any other white American—some negotiated with tribal leaders, others imposed upon them—and had generally opposed using force. By the time Andrew Jackson took office in March 1829, Clark had a long-standing reputation for civil firmness in dealing with western Indians, and as the one man they were most likely to trust and listen to. Indeed, a main reason he lost the gubernatorial election in Missouri in 1820 was the perception outside St. Louis that he was “soft” on Indians. Yet Black Hawk never trusted the Americans, and that included the Red-Headed Chief in St. Louis, no matter what Keokuk and others said. The two men—and their respective peoples—had a turbulent relationship for a quarter of a century that grew more so after 1822. Black Hawk and his so-called “British band” challenged the United States at decade’s end, ultimately leading Clark to support attacking the troublesome subset of Sauks and chasing them down like dogs as they sought to retreat west across the Mississippi. Black Hawk’s War represents one of the great paradoxes

of William Clark: How and why could and did he come to his position in 1831 and 1832? Ultimately, it brings to sharp focus the fact that Clark found himself truly straddling two worlds and two sets of priorities—his belief in progress and the advance of civilization as white settlers moved westward into the frontier and the government’s duty to facilitate a peaceful transition, while at the same time wrestling with his own views about handling the native peoples living there.

Part of the issue is that Black Hawk—and the federal government’s response to his actions of 1831 and 1832—speaks to the different views of Indians held on either side of the Appalachians. Easterners (and especially northeastern thinkers), now largely distanced from direct and regular experience with indigenous peoples, had come to see them as “noble savages,” childlike victims who required care and patience from the United States government. So long as easterners from the New England and the mid-Atlantic states like James Monroe, John Quincy Adams, and their administrations dominated the executive branch, federal policy and actions would reflect a desire to continue acquiring Indian lands in the West while providing tools and mechanisms to “civilize” the Indians in their new western homes. But Andrew Jackson represented a completely different mindset that was more typical of westerners. He saw Native Americans as “morally depraved, diabolically cruel killers of innocent white women and children, and brutish, subhuman obstacles to the advancement of republican civilization.” William Clark was one of the few men straddling this intellectual chasm. He thought more like an easterner, but he lived and had extensive experience in the West. This hybridization of lessons learned, vast experience, and regional viewpoints led Clark to recommend and support a military solution to the “Black Hawk problem.”

The relationship between the Sauk and Fox and the United States got off on the wrong foot almost immediately. Changes in political status, Americans cozying up with the dreaded Osage, a dubious land purchase, and a potential threat to the Sauks’ lucrative fur trade with Europeans made tribal leaders uneasy.

Now, Indiana governor William Henry Harrison imposed a new treaty on the Sauks. At the time of the treaty, the allied tribes claimed substantial territory on both sides of the Mississippi River spanning present-day southwestern Wisconsin, northwestern Illinois, and eastern and central Iowa.<sup>2</sup> Their main settlement was at Saukenuk, just up the Rock River from the Mississippi in Illinois, where women grew



corn and other agricultural products and chiefs orchestrated hunts, commerce, and foreign relations. Exactly what transpired (and why) remains open to conjecture, and whether it included Harrison's liberality with promises and liquor or the chiefs' thinking that they were merely normalizing economic relations with the new Americans, the resulting treaty turned out to become a source of misunderstanding and, ultimately, Black Hawk's War.<sup>3</sup>

To us looking back at 1804 from today, it seems like a formula for disaster. The problem all stemmed from the land boundaries. The Sauks gave to the United States all their land east of the Mississippi. But Article VII permitted the Sauks to live on the land "as long as these lands remained the property of the United States." To the Americans, this meant the Sauks could live there as long as it was *federal* land, but once the government surveyed it and sold tracts to homesteaders (as it did in fall 1829), the Sauks and Fox would have to move across the Mississippi River to present-day Iowa and never return.<sup>4</sup> It seems unlikely that the chiefs fully understood the implications of this clause; while they had extensive dealings with whites for more than a century, those relations with Europeans had never pertained to land ownership, and they probably saw this as "a purely formal gesture of extending United States protection over a substantial party of their territory."<sup>5</sup> Regardless, when the delegation returned to Saukenuk, they continued to live on the land, plant and harvest corn, and bury their dead, just like they always had. The relationship became stormy in subsequent years. Like a number of western tribes, the Sauks joined the British in the War of 1812. At war's end, Secretary of War (and State as well, temporarily)<sup>6</sup> James Monroe appointed Clark, along with Illinois Territorial governor Ninian Edwards and St. Louis fur czar Auguste Chouteau, to bring together the pro-British tribes and lay down the law in new treaties. But Black Hawk's group of Sauks didn't show up. Clark was furious, fuming to Washington that "[t]he conduct of those savages, in the cold indifference with which they received several communications in regard to the late treaty, . . . together with the suggestions and admonitions of the British officers themselves, to be on our guard against them, leave no doubt on our mind that it is the intention of those tribes to continue the war, and that nothing less than a vigorous display of military force can change their disposition."<sup>7</sup> Threats and ill-will finally led to their coming to St. Louis to sign the treaty with the Red-Headed Chief the following year.<sup>8</sup> In the 1816 treaty, the Rock River Sauks "do hereby unconditionally assent to recognize, re-establish,



John Reynolds (1788–1865) became governor of Illinois in 1830. He was responsible for calling out the Illinois state militia and took active command of it in Black Hawk's War. To reward his efforts, President Andrew Jackson named him a major-general. He resigned as governor in 1834 when he was elected to the U.S. House of Representatives. (Image: *Portrait and Biographical Album of Whiteside County, Illinois, 1887*)

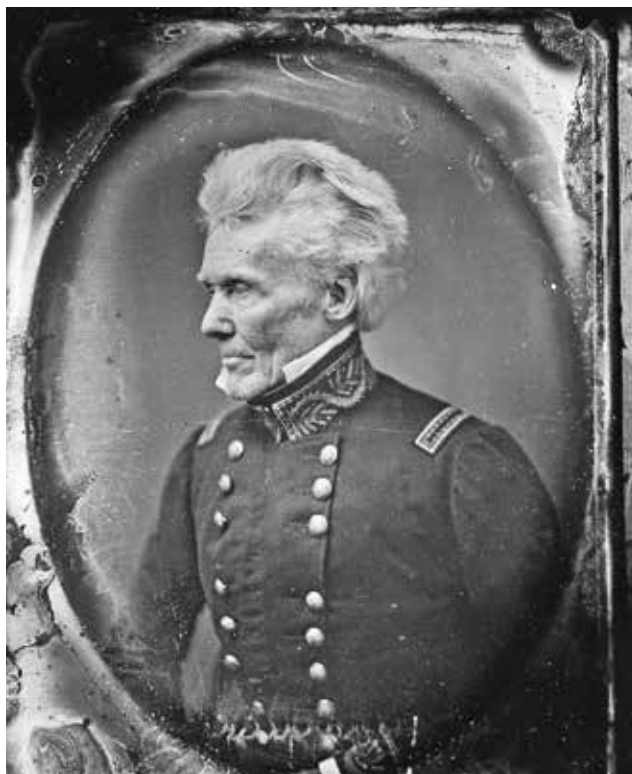
and confirm the treaty" of 1804, but without any reference to its terms.<sup>9</sup> As far as the Americans were concerned, the Sauks were merely guests on the land along Rock River until white folks moved in.

Some, like Keokuk and most of the Mesquakies, saw the writing on the wall in the 1820s and began migrating westward across the Mississippi. Others, like Black Hawk, refused to recognize the land cession and remained, saying that the original treaty was signed without the consent of the tribe; besides he argued, by not accepting annuities, they were not giving up their homeland. American expansion pushed more Native Americans westward so that more Indians were living in and competing with more Indians in less space, leading to heightened competition with both one another and with tribes farther west like the Sioux. The United States saw this competition as a low-budget way to control the tribes, keeping any one from getting too large and

strong, since the army was shrunken so small that it could not police the frontier itself.<sup>10</sup> So, when whites began moving to northwestern Illinois to farm and mine lead on the same land, the situation became even more volatile.

By decade's end, Clark made sure that the Sauks knew it was time to move; some did so as ordered, others did not. Clark was still exhibiting his typical patience in 1829, telling Indian Superintendent Thomas McKenney that the Sauks who remained held "the opinion that they have been defrauded of an immensely valuable Country," and that being removed with such a small annuity "produces unfriendly feelings, particularly among those who are under British influence," which was bound to create problems with the fast-encroaching whites. Perhaps, Clark suggested, the United States should meet with the chiefs and try to work out a new treaty with a timetable for moving that both sides found workable.<sup>11</sup> After all, he told war secretary John Eaton, "no power is vested in me to stop the progress of settlements on ceded land, and I possess no other means of enticing the Indians to move than persuasion," which would require substantial presents. Worse yet, Clark said, the hard feelings were unnecessary since "[t]he encroachments of the whites in this instance is to be regretted, as the removal of those Indians would have most probably been effected in the course of the next year. Other Tribes complain of the encroachments of the whites and on that subject, a general discontent appears to prevail among the Tribes of the state of Illinois."<sup>12</sup>

Federal land around Saukenuk went up for sale in September 1829, and settlers began moving in. Keokuk proved unable to persuade Black Hawk and his followers to vacate as they continued to farm the land themselves. About three dozen settlers wrote to Illinois governor John Reynolds for help. Some six or seven hundred Sauks from "the Black Hawk's party" were nearby, reportedly destroying fences and wheat, taking land, threatening settlers trying to plant spring crops, and accusing settlers of stealing tribal lands.<sup>13</sup> Reynolds apprised Clark of the predicament and suggested "perhaps, a request from you to them for them to remove to the west side of the river would effect the object of procuring peace to the citizens of the State."<sup>14</sup> Or, Clark responded, perhaps not, saying that "every effort on my part has been made to effect the removal from Illinois of *all* the Tribes who have ceded their Lands."<sup>15</sup> The same day, Clark wrote to Gen. Edmund Gaines, commander in the region, to say that it was time to make good on the threats of military intervention against the recalcitrant bands.<sup>16</sup> Clark remained committed to the idea of civilizing



Gen. Edmund P. Gaines (1777–1849) was a veteran of the War of 1812 and, later, commander of the Western Military Department at the time of Black Hawk's War. He was perhaps most famous in his lifetime for having arrested former vice president Aaron Burr and testified in his treason trial. (Image: National Archives)

cooperative Indians, though, and told Gaines to take care to not harm those who "have constantly and zealously cooperated with the Government Agents."<sup>17</sup>

Within a week, Gaines met with Sauk leaders over the issue. Illinois land was not theirs and had not been since 1804, Gaines explained (echoing the arguments Clark sent him). Jumping Fish said he had sold enough to free a brave in 1805, but certainly not such a swath as that.<sup>18</sup> Gaines's meeting with the volatile Black Hawk went even less smoothly. The Great Spirit placed the Sauk on the land, the warrior said, and he intended to stay, then exploded, "You asked, 'Who I am'—I am a Sauk; my fathers were great men, and I wish to remain where the bones of my fathers are laid."<sup>19</sup> Later, Black Hawk tried to argue that the Sauks received nothing for their cessions in treaties. With exasperation clearly mounting, Clark reported to Cass that Black Hawk didn't have a leg to stand on this time. "The treaties referred to [1804, 1816, and 1824] have been frequently explained to the Sacs and Foxes," Clark fumed, "and [one] of which (the 13<sup>th</sup> of May 1816) was signed by Black Hawk himself, the principal



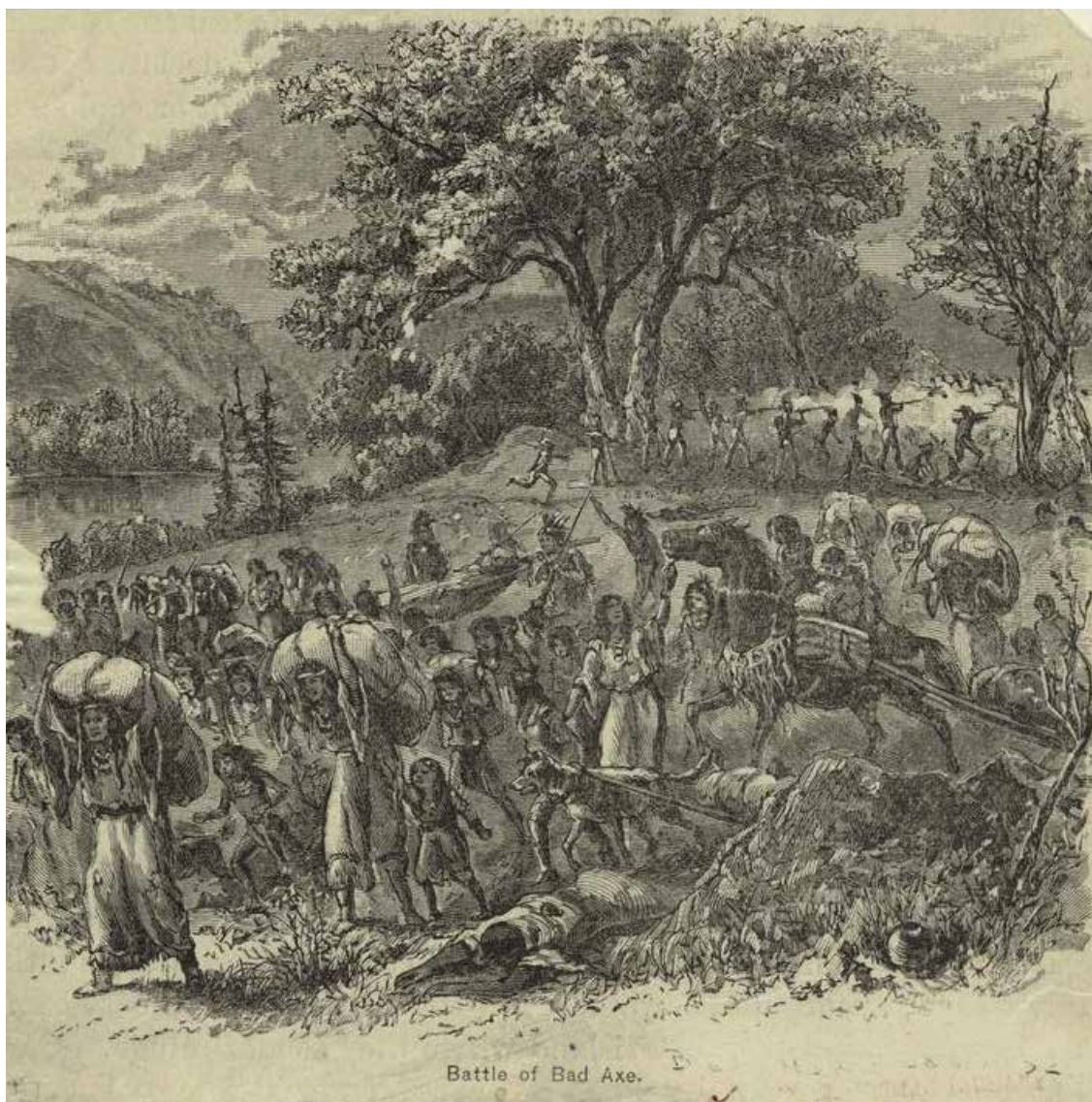
Prince Maximilian of Wied-Neuwied (1782–1867) was a German prince who had a great interest in ethnology and the natural world. He had explored in South America in the 1820s and published his findings, and he traveled to the United States in 1832 to explore and describe the upper Missouri River. Before leaving for the upper Missouri in March 1833, Maximilian sat in on the negotiations between Clark and Keokuk at Clark’s meeting house; his description of the summit is the most complete record of the meeting extant. After returning to St. Louis in the spring of 1834, he traveled back to Germany and wrote his *Travels into the Interior of North America*. Artist Karl Bodmer, who Maximilian hired to join him, painted some 88 illustrations for it. (Image: *Qualitat fur Menschen*)

Man of the party who signed the treaty. They have been frequently told by myself and their Agent, that they must move to their own land on the West side of the Mississippi and assured that if done so peaceably that assistance would be offered them. They however persisted in their refusal to move and settled within their own Country.”<sup>20</sup> Keokuk tried to smooth things over the following day, but Gaines wanted none of it; the Sauks had to leave right away, and abandon the corn they had planted. In fact, he said, he would even replace the harvest, but Keokuk had to get his people out of Illinois or suffer the consequences. The arrival of some 1,400 Illinois Militia in late June made it easier for Gaines to bully the Sauks into

signing “Articles of Agreement and Capitulation,” filled with language designed to leave Native Americans feeling both defeated and humiliated: They had tried to destroy settlers’ homes and farms and tried to orchestrate other tribes in the region to fight removal, but their “being convinced that such a war would tend speedily to annihilate them, they have voluntarily abandoned their hostile attitude and have sued for peace.” The terms of the agreement read as those that could only have been dictated by vengeful victors: permanent submission to American authority, ending any communication with British or unlicensed traders, allowing the Americans to build and use roads through their lands whose boundaries were ostensibly guaranteed. Left with little choice, Black Hawk touched the quill to the paper.<sup>21</sup> Clark supported—even applauded—Gaines’s approach, saying the Sauks had been “insolent,” but “[t]his show of force, with the cool and determined course pursued towards this disaffected Band of Sacs has produced the desired effect, and I have no doubt will tend to convince the disaffected parts of Tribes on this frontier of the folly of their opposition to the U. States without a just cause.”<sup>22</sup> When the Sauks traveled west for their annual winter hunt, many hoped that none would return to Saukenuk.

Reports in late winter of 1832 suggested otherwise. Clark received word from the region that much was happening. Still, as late as early April, Clark thought a war could be averted; Gen. Henry Atkinson had already left for Rock Island via steamboat in hopes of intercepting the Sauks crossing the river to convince them to return west.<sup>23</sup> But such was not to be; Black Hawk had mustered together some 600 warriors, and “the arrival of the Troops seems to have considerably affected on the friendly Indians, but it appears, that nothing short of force of Arms, will deter the British band from their purpose.”<sup>24</sup> That was it; Clark was ready to settle the issue once and for all, seething to War Secretary Lewis Cass, “I am fully of the opinion that a very considerable force, and properly concerted measures, will be indispensably necessary to drive those hostile bands from the lands they have invaded. . . . I am inclined to the belief that those Indians have well merited a severe chastisement; and would respectfully recommend the adoption of such measures as would ensure to the offenders such a degree of punishment as might be not only useful to themselves hereafter, but which would serve as a warning to others.”<sup>25</sup>

Events accelerated quickly. Keokuk denied responsibility for Black Hawk’s actions to Atkinson, then skedaddled to St. Louis to express fear to Clark



Hundreds of Sauk and Fox men, women, and children died at the Battle of Bad Axe on August 1 and 2, 1832, many in the river trying to escape. It ended conflict between the United States military and the tribes in the Michigan and Illinois territories. Most historians today characterize it as a massacre. (Image: Wikimedia Commons)

that the Americans would take out their anger on his peaceful—and cooperative—people. Relying on reports from both military leaders and Clark, Lewis Cass threatened “a general Indian war,” saying that no one less than Andrew Jackson himself had authorized war against Black Hawk and his followers. Clark agreed heartily, telling Cass that “it [is] highly gratifying, inasmuch as it develops the determination of the Government in relation to the war in which we are now involved with blood thirsty and ferocious savages. The faithless and treacherous character of those at the head of our Indian enemies appears now to be so well known and understood,

as to permit an expression of the hope, that their wanton cruelties will eventually result in their own destruction; and as they have afforded sufficient evidence not only of their entire disregard of Treaties, but also of their deep-rooted hostility, in shedding the blood of our women and children, a War of *Extermination* should be waged against them. The honor and respectability of the Government require this:—the peace and quiet of the frontier, the lives and safety of its inhabitants *demand it*.”<sup>26</sup>

But Clark also covered for his ally, Keokuk, assuring Cass the problem was an isolated one, and that once Black Hawk was out of the way, removal



Gen. Henry Atkinson (1782–1842) had a long career working with western tribes as an emissary of the United States government. He led two expeditions to the Yellowstone River (in 1819 and 1825) and signed treaties of friendship with a number of tribes in the upper Great Plains. Given his experience, Atkinson was named to the general command of the army during Black Hawk's War, for which he was criticized. (Image: Abraham Lincoln Presidential Library and Museum)

and civilization of the Sauks could proceed. At last, the hunger for land forced the two men—who reputedly knew and cared more about western Indians than any other whites—to resort to force.<sup>27</sup> Jackson himself gave the final orders to end the problem once and for all in mid-June.<sup>28</sup> The army spent the next two months chasing Black Hawk and his followers around northwestern Illinois and southeastern Wisconsin until finally cornering them at Bad Axe Creek, slaughtering hundreds, and capturing Black Hawk and his fellow leaders for return to the prison at Jefferson Barracks.

While all this was taking place, Clark and Cass worked to cement the loyalty of the rest of the Sauks in Iowa. Clark authorized 40,000 rations of provisions for “friendly Indians as may seek protection within the Indian agencies” in early July.<sup>29</sup> Soon after, he asked the war department to sign off on giving a blacksmith, gunsmith, and “assistance for Agriculture” to the friendly Sauks, Mesquakies, and Ioways who complied with American wishes, since they “will imperiously require some assistance in early preparations for agriculture.”<sup>30</sup> A month later, Clark wrote to Lewis Cass with preliminary

reports from the war; it appeared to be almost over.<sup>31</sup> Soon after, Clark left St. Louis for Rock Island to provide “aid of his advice and experience in certain contemplated arrangements with the Indians in that quarter” in preparation for the treaty talks scheduled for that fall.<sup>32</sup>

It is often hard to tell when one is standing on the precipice of change. If William Clark thought so, he never wrote it down. Black Hawk returned from Washington defeated and convinced that Jackson was right—the Americans were as many as the leaves in the forest. From Keokuk's standpoint, a new *realpolitik* was emerging where he would not be challenged by the likes of Black Hawk as he sought ways to work in the emerging order with the Americans. Now, though, the United States confirmed that it would do most anything to facilitate westward expansion—even bring out the military against Native Americans—and that a more Jacksonian view of Indian removal had become the order of the day. But when they stood in that prison at Jefferson Barracks, they all straddled a time of great change.

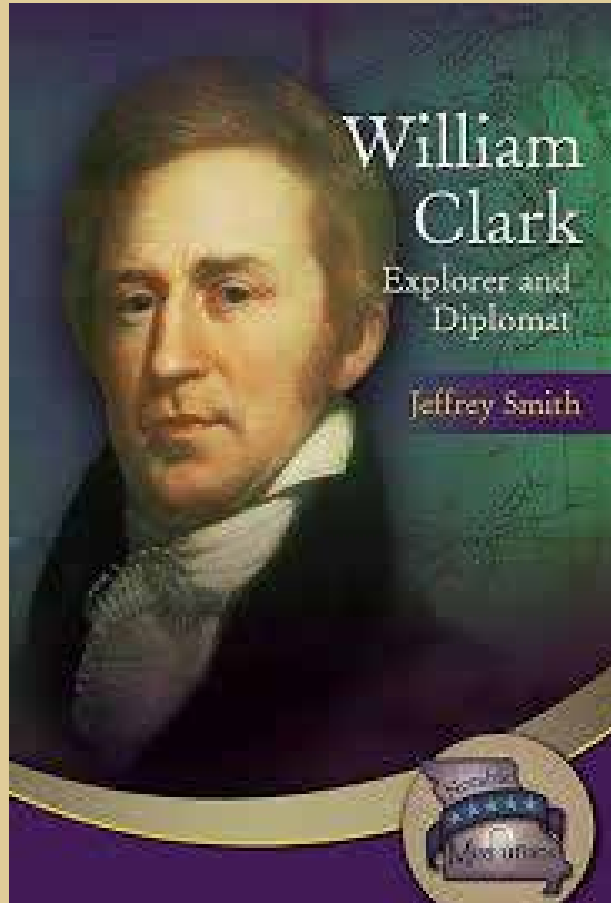
Keokuk (1767–1848) was a Sauk leader in Illinois and the Iowa Territory. Unlike Black Hawk, Keokuk was willing to work with American officials. In September 1832, Keokuk headed a delegation that traveled to St. Louis to try to negotiate Black Hawk's release from imprisonment at Jefferson Barracks. (Image: National Museum of American Art)



## ENDNOTES

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- <sup>1</sup> Anthony F. C. Wallace, *Prelude to Disaster: The Course of Indian-White Relations Which Led to the Black Hawk War of 1832* (Springfield: Illinois State Historical Library, 1970), 19.
- <sup>2</sup> William Thomas Hagan, *The Sac and Fox Indians* (Norman: University of Oklahoma Press, 1958), 228, for map of Sauk and Fox land cessions.
- <sup>3</sup> Wallace, *Prelude to Disaster*, 20–21.
- <sup>4</sup> Charles J. Kappler, *Indian Affairs: Laws and Treaties* (Stillwater: Oklahoma State University Electronic Publishing Center); Wallace, *Prelude to Disaster*, 17.
- <sup>5</sup> Wallace, *Prelude to Disaster*, 20–21.
- <sup>6</sup> Monroe, already Secretary of State, took over the War Department when Madison fired John Armstrong after Great Britain's attack and sacking of Washington, D.C. He only held the job until early March 1815; William Crawford became Secretary of War the following August.
- <sup>7</sup> Extract of a [second] letter from Messrs Clark, Edwards, and Chouteau, Commissioners for treating with the Indians, dated St. Louis, 22d May 1815; MHS, Native American Coll, b1 f4.
- <sup>8</sup> A delegation of Sauks did attend and sign a treaty in September 1815, which was signed by (among others) Quashquammee (Jumping Fish), who also signed the 1804 treaty. See Kappler, 121.
- <sup>9</sup> "Treaty with the Sauk, 1816," Kappler, 127.
- <sup>10</sup> Kerry Trask, *Black Hawk: The Battle for the Heart of America* (New York: Henry Holt, 2007), 24–27.
- <sup>11</sup> William Clark to McKenney, 20 May 1829, Kansas Historical Society, Records of the United States Superintendency of Indian Affairs, St. Louis, MO; v. 4, KHS Sup. Letterbook, 9–11. Hereafter KHS Sup. Letterbook. In fact, Clark reported that the British were responsible for sowing the seeds of discontent by convincing the Sauks that their annuity was far too small for the vast territory they were ceding.
- <sup>12</sup> William Clark to sec of war 1 June 1829, KHS Sup. Letterbook, 12–13.
- <sup>13</sup> Citizens of Rock River to John Reynolds, 30 April 1831, *The Black Hawk War, 1831–1832*, vol. 2: Letters and Papers, Part I, Collections of the Illinois State Historical Library, vol. 36; compiled and edited by Ellen M. Whitney (Springfield: Illinois State Historical Library, 1973), 3. Hereafter Whitney, *Black Hawk War*.
- <sup>14</sup> Reynolds to Clark, 26 May 1831, Whitney, *Black Hawk War*, 13.
- <sup>15</sup> Clark to Reynolds, 28 May 1831, *ibid.*, 19–20.
- <sup>16</sup> Clark to Gaines, 28 May 1831, *ibid.*, 16–17.
- <sup>17</sup> Clark to Gaines, 28 May 1831, *ibid.*, 16–17.
- <sup>18</sup> Memorandum of Talks between Edmund P. Gaines and the Sauk, Rock Island, June 4, 5, 6, 7 1831, *ibid.*, 27–28, quote on 28. The original meeting in 1804 was instigated to settle the matter of a Sauk brave murdering a white settler, who had then been captured. Ironically, the brave was never released; American soldiers shot him in an escape attempt in 1805. See Territorial Papers 13, 165.
- <sup>19</sup> Memorandum of Talks between Edmund P. Gaines and the Sauk, Rock Island, June 4, 5, 6, 7 1831, Whitney, *Black Hawk War*, 29.
- <sup>20</sup> William Clark to Lewis Cass Sec of War, 12 August 1831, KHS Sup. Letterbook, 248–49.
- <sup>21</sup> "Articles of Agreement and Capitulation between the United States and the Sauk and Fox," 30 June 1831, Whitney, *Black Hawk War*, 85–87.
- <sup>22</sup> William Clark to John Eaton, 6 July 1831, *ibid.*, 102.
- <sup>23</sup> Clark to Herring, 10 April 1832, *ibid.*, 85–87; William Clark to John Eaton, 6 July 1831, *ibid.*, 244.
- <sup>24</sup> Felix St. Vrain to William Clark, 18 April 1832, *ibid.*, 277–78.
- <sup>25</sup> William Clark to Lewis Cass, 20 April 1832, KHS Sup. Letterbook, 356–57.
- <sup>26</sup> William Clark to Lewis Cass, 8 June 1832, Whitney, *Black Hawk War*, 550.
- <sup>27</sup> William Clark to Lewis Cass, 8 June 1832, *ibid.*, 550.
- <sup>28</sup> "John Robb to Andrew Jackson and Jackson's reply," 12 June 1832, *ibid.*, 579–80.
- <sup>29</sup> William Clark to Lewis Cass, 2 July 1832, KHS Sup. Letterbook, 385–86. Cass ltr of 19 June notifying him of congressional act "for the relief of such friendly Indians as may seek protection within the Indian Agencies." Passed June 15, section 4 allocating \$20K; see Register of Debates in Congress, 22d Cong, 1st session, v. 8, pt. 3, app., p. xviii; in *ibid.*, 630.
- <sup>30</sup> William Clark to Elbert Herring, 19 July 1832, KHS Sup. Letterbook, 393–94.
- <sup>31</sup> William Clark to Lewis Cass, 9 August, 1832, *ibid.*, 404.
- <sup>32</sup> John Ruland (Sub Agent Indian Affairs) to Elbert Herring, 24 August 1832, *ibid.*, 406–7.



## Know a young reader who would be interested?

Jeffrey Smith is author of the 2016 book *William Clark: Explorer and Diplomat*, a biography for fifth- and sixth-grade readers. It is part of the Notable Missourians series, published by Truman State University Press. To acquire yours, visit <http://tsup.truman.edu/product/william-clark-explorer-and-diplomat/>

# So Much to Learn:

The Ozark National Scenic Riverways  
and Its Karst Landscape

BY QUINTA SCOTT





Paddle the spring-fed rivers of Ozark National Scenic Riverways, the Current and its tributary, the Jacks Fork. Montauk Spring, Welch Spring, Cave Spring, Pulltite Spring, Round Spring, Blue Spring, and Big Spring are also Current tributaries. A second Blue Spring and Alley Spring feed the Jacks Fork. Put in below at Akers, below Welch Spring, where it is the sixth largest spring in the state and turns the Current from a lazy Ozark stream into a first-class float. Don't forget the Eleven Point, the Wild and Scenic River that flows through Mark Twain National



Forest south of Winona. It has two major tributaries: Greer Spring and Hurricane Creek, a classic Ozark losing stream.

Use your imagination to understand the subterranean drainage of the three rivers. Consider Hurricane Creek, the losing stream with a topographic watershed of 116 square miles. Yes, it's a tributary to the Eleven Point River, but only its last mile carries surface water to the river. The rest seeps into a subterranean system that carries water under the drainage divide between the Eleven Point and the Current to deliver water to Big Spring. The same holds true for Logan Creek, a losing stream that is a tributary to the Black River. Rain falls on Logan Creek, spills into the subterranean system, crosses under the surface divide between the Black and the Current, and delivers water to Blue Spring. Alley Spring draws from an amazing system of sinkholes and losing streams, including Spring Valley Creek, which becomes a tributary of the Current, once it passes through Round Spring.

When Missouri established its conservation department in 1937, agency scientists began learning how to manage the Ozark landscape for wildlife, beginning with Irwin Bode, its original director, and his team of young biologists. In 1937 Missouri's geologists had only begun to learn about the Ozark's karst landscape.

Not until 1912 did Thomas Jacob Rodhouse measure the flow of the Current River above and below Big Spring to come up with the discharge figure for the spring. From that beginning, geologists began to learn from which rock formations springs appear and to understand and trace the subterranean systems that feed the springs. That work culminated in the early 1970s with the Hurricane Creek Barometer study, in which Thomas Aley tied land management at the surface to the quality of springs and created a model for understanding subterranean systems that could be applied to any Ozark spring.

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Left—Current River, Round Spring Access, Shannon County



### **Current River: Log Yard Landing**

On August 27, 1964, President Lyndon Johnson signed the bill that created the nation's first scenic riverway, the Ozark National Scenic Riverways. The bill created a long, thin, 80,000-acre national park that features the limestone bluffs and floodplain of the Current River and the Jacks Fork.

The National Park Service (NPS) began studying the possibility of a Wild and Scenic river park in the 1950s. First, the NPS proposed including two-thirds of the Current River, Jack Fork, and Eleven Point watersheds in a national recreation area with the purpose of preserving the streams and springs that fed them. After the U.S. Forest Service nixed the inclusion of 350,000 acres of Forest Service land in an NPS project, the NPS proposed a national monument that would preserve the wild character of the rivers over 113,000 acres. Two bills went before Congress in 1960, one for the Forest Service project, preserving the rivers, and the other for the Park Service Project.

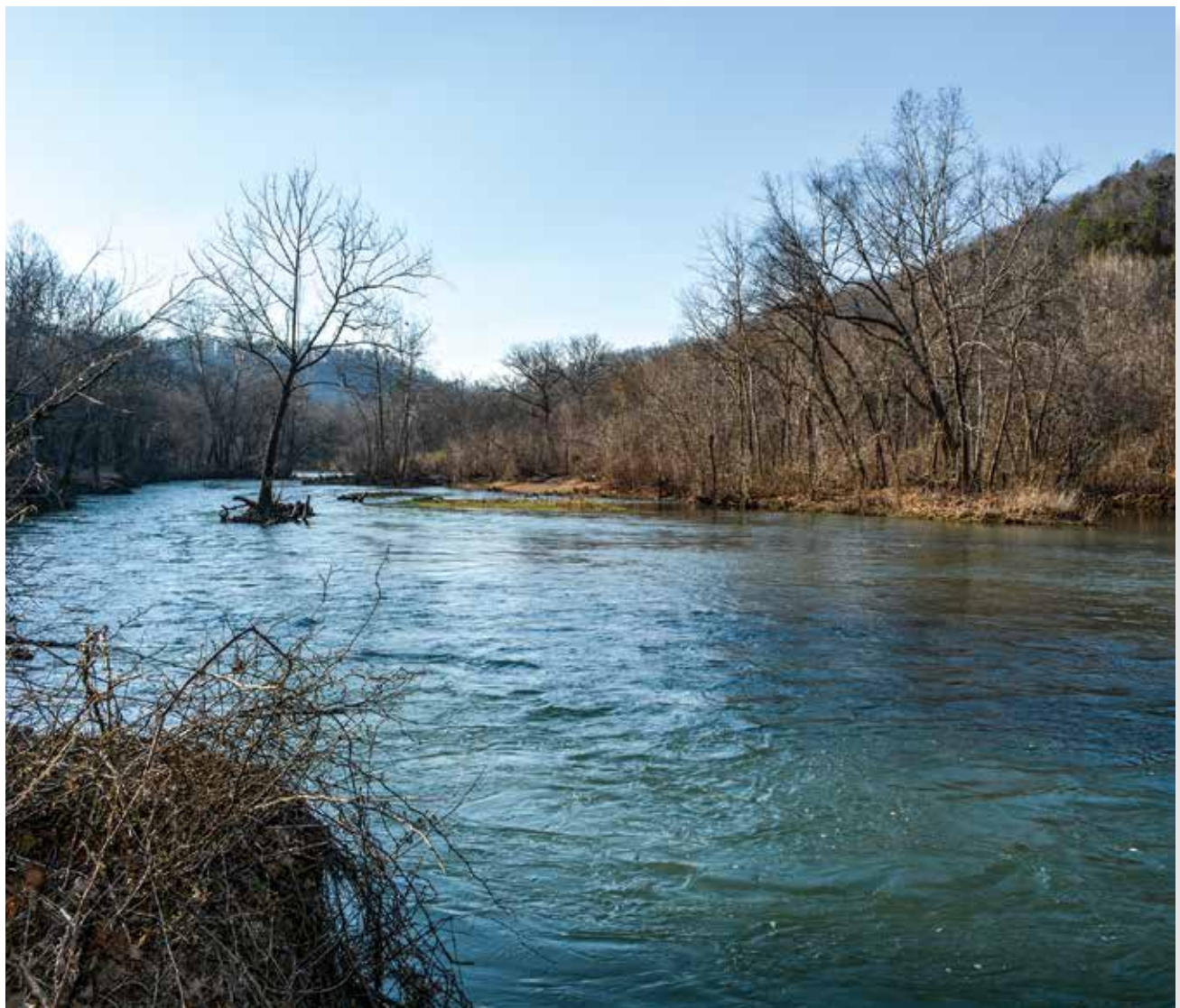
## Multiple-Use Sustained Yield Act

In a third bill, passed in 1960, Congress created the Multiple-Use Sustained Yield Act, stipulating that America's National Forests "shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes" for the benefit of the American people. In light of this guarantee, Leo A. Drey, a major landowner along the Current and Jacks Fork, favored the Forest Service proposal. Ozarkers had come to know and trust the Forest Service over the twenty-five years since it had purchased cut-over lands in the Ozarks. He trusted the Forest Service proposal would promote multiple use of the watershed and protect the rivers with scenic easements, without impinging on private lands. On the other side, journalist Leonard Hall, from Caledonia, Missouri, shifted back and forth on the issue, first siding with Drey and then to the NPS proposal as recreation on the rivers increased year by year. He concluded that because recreational growth was inevitable, the NPS, which had a long history of managing landscapes for recreation and tourism, should manage its growth on the rivers.

Interior Secretary Stewart Udall settled the issue after floating the Current with Hartzog and Hall. Hartzog became its first superintendent.

## Eleven Point River: Turner Mill Access

Although Congress left the Eleven Point, which runs through the Mark Twain National Forest, out of the bill, the river did not go unnoticed. Congress included it in the 1968 National Wild and Scenic Rivers Act and put it under Forest Service management. It also dropped the lower Current south of Big Spring, where the agricultural floodplain was more productive and the residents more resistant to government interference. Congress appropriated \$7 million to the National Park Service for the purchase of 65,000 acres, which it acquired through eminent domain or scenic easements, measuring 300 feet from the rivers' edges. The process embittered 200 landowners who objected to the low government appraisals on their property and went to court.<sup>1</sup>





### Alley Spring Mill, Shannon County

In 1970 Missouri agreed to include Alley Spring, Round Spring, and Big Spring State Parks in the project, adding 15,000 acres and bringing the total to 80,000 acres. The Riverways encompassed 134 river miles with gaps where the Jacks Fork runs through Eminence and the Current through Van Buren.

In creating the park, Congress charged the National Park Service with protecting the rivers' sensitive floodplain habitats while inviting increasing numbers of tourists to float and fish the rivers; equestrians to ride 14 miles of designated horse trails and any unpaved roads in the park; and campers to park their trailers on the floodplain. They did. Between 1968 and 1979, the number of canoeists jumped from 40,000 to 300,000. By the beginning of the new century, 1.5 million people visited the park annually.<sup>2</sup>



### **Karst and Current River Country Spring Valley**

“Suddenly, there was a roar of water and the previously dry bed of Spring Valley, by which we had camped, was filled with a rushing torrent 4 to 10 feet deep and 30 to 100 feet wide. In about three days the water had disappeared except for occasional small pools. The explanation of this is to be found in the fact that the ground, which is largely of limestone formations, is honey-combed with caves and sinkholes, the latter sometimes a hundred feet deep. Springs appear only to disappear as suddenly a few feet below. The water is of a greenish blue color on account of the great amount of lime which it contains in solution.”—Edward Seymour Woodruff, 1908<sup>3</sup>

## Round Spring, Shannon County

Edward Seymour Woodruff, an ornithologist from New York, learned one night just how dangerous camping next to a dry, losing stream could be. Pounding rains or even a mild thunderstorm can create torrential floods that can wash away a campsite and possibly the campers. After the storm clears, the creek may continue to flow for a few days and then disappear into the underground system. In the case of Spring Valley Creek, underground channels deliver water to both Alley Spring to the south and Round Spring to the east.

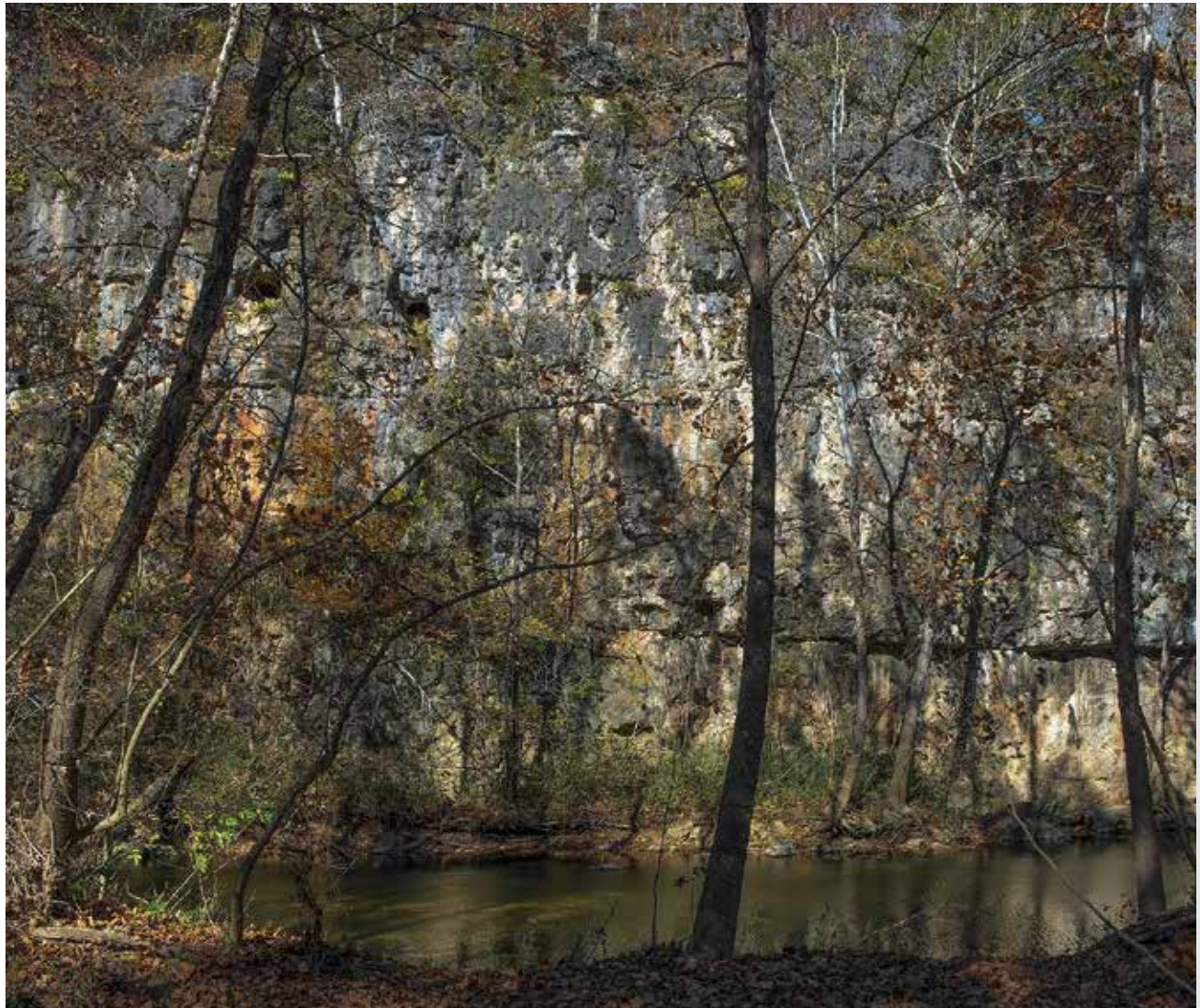


## **A tall bluff in Eminence Dolomite rises out of Spring Valley Creek, where it becomes a flowing stream just short of Round Spring.**

Those who have explored the Ozarks know the Eminence Formation even if they don't know they know it. They certainly know the famous springs—Big Spring and Blue Spring, which emerge from under bluffs of Eminence Dolomite. They see it when they float the Ozark Rivers, the Current, the Meramec, and their tributaries, where massive bluffs rise out of the streams. They experience it when they crawl through caves, where underground streams hollowed out rocks in the formation.

The Cambrian Era ended 485,000,000 years ago with the deposition of the Eminence formation, a sandy dolomite 350 feet thick and filled with chert. The sandy layers in the formation suggest that an uplift to the north and west exposed older sandstone formations to erosion. At the beginning of Ordovician times, some 48,000,000 years ago, the seas withdrew, leaving Missouri above water for

a brief time. The returning seas deposited a thin layer of sandstone, Gunter Sandstone, only twenty-five feet thick, but important, for this layer of sandstone confines underground streams to the Eminence below. The Gasconade Formation, several hundred feet of limestone, followed the Gunter as the seas deepened. In the shallows that followed, a pair of sandstones alternated with carbonate covered the region, the Roubidoux Formation. Again the seas deepened and layer on layer of carbonate sediment accumulated on the sea floor, interlayered with thin sandstones and shales, creating the Jefferson City formation. These are the rock formations that form the karst landscape and the Ozark Aquifer that feeds the springs of Current River Country and their recharge areas.







### The Jacks Fork: Blue Spring Access

Uplift created the deep bluffs of Eminence Dolomite along the Current River and those of Gasconade Dolomite along the Jacks Fork. Geologists have proposed several explanations for this. Maybe before the uplift, the rivers meandered across a fairly flat plateau, a peneplain. At the beginning of late Pennsylvanian Era, 320,000,000 years ago, a slow uplift pushed up the peneplain, and the rivers downcut through the flat rock formations underneath, while maintaining their original meanders. Or maybe the Ozark Plateau never was a peneplain but a highland that stretched from Maine to Oklahoma. And maybe the landscape experienced repeated uplifts and downdrops as continents collided. Maybe they are even younger and they uplifted during the Pliocene Era, only 12,000,000 years ago.<sup>4</sup>

## Layers of the Ozark Landscape

The Ozark landscape comes in layers: the residuum, a mix of soil and rock, the result of the weathering of the rocks, which can be deep or shallow; the water table, which can rise or fall; and groundwater, found in the layers of bedrock underneath the Ozark Aquifer. The aquifer lies under Jefferson City Dolomite, which caps the Salem Plateau. Underneath Roubidoux Sandstone, Gasconade Dolomite, Gunter Sandstone, Eminence Dolomite, and Potosi Dolomite hold the water in the rest of the aquifer and sit on top of Derby-Doerun shale, the confining unit of the St. Francois Aquifer below. The Ozark Aquifer, 1,000–2,000 feet of dolomite, capable of holding tremendous amounts of water, is the source of springs on the Salem Plateau.<sup>5</sup>

## Early Research into Ozark Springs

Josiah Bridge, in his 1930 study of the Eminence and Cardareva Quadrangles, noted that geologists had come to Shannon County in search of copper, not rivers and springs. They focused on the Slater Copper Mine, east of Eminence. In 1840 E. O. Hodge visited and described the mine, shortly after Joseph Slater abandoned it. Others followed sporadically. Dr. C. P. Williams looked at the Slater Mine in 1875; H. Foster Bain and Edward O. Ulrich recorded its history in their 1905 Copper Deposits of Missouri. As for looking at stratigraphy, the layers of rock along the Current River, Frank L. Nason in his 1892 Report on Iron Ores discussed the Gasconade and Roubidoux formations, which form the uplands in the Eminence region. Bain and Ulrich separated the Eminence formation from the Gasconade above it and added to Missouri's geological column in their 1905 report.<sup>6</sup>



**Greer Mill: Samuel Greer built his second mill in 1870 on the hill above the spring after bushwackers destroyed the 1859 mill during the Civil War.**

Before the U.S. Geological Survey began collecting stream-flow records for Missouri's rivers in 1903, little official attention had been paid to the power of rivers and springs to operate mills, even though pioneers had been building mills since the days of early settlement. Samuel W. Greer, a carpenter and a millwright, built the first mill next to Greer Spring in 1859. John Dougherty and Ira Barksdale, a blacksmith, built the dam and mill at Alley Spring in 1870. In 1912, Thomas Jacob Rodhouse, a professor of hydraulics at the University of Missouri, turned to the flow of Ozark streams to gather data to harness their power to run mills. On August 30, 1912, the Current River at low water flowed past Van Buren at 680 cubic feet per second, but at Club House south of Big Spring the river flowed at 1,135 cubic feet per second. Rodhouse concluded that Big Spring had delivered water to the Current at the rate of 345 cubic feet per second, which equaled the measured discharge at

Big Spring on August 27. He proved that Big Spring is a tributary of the Current River.<sup>7</sup>

In 1921 the Missouri Senate passed a bill that required a survey of the state's water resources, "to show locations where power can be generated, and the amount and Character of lands that would be inundated by the erections of dams to secure water power." Working with the U.S. Geological Survey, Missouri geologists began to measure the flow of the state's major streams, including the Current River. In 1927 hydraulic engineer Henry Claus Beckman reported on the work done.<sup>8</sup>

## Lake Taneycomo formed behind the Ozark Power and Water Company dam on the White River.

Beckman's work over the next fifteen years reflects our growing knowledge of the role of groundwater in feeding Missouri's streams, and the changes in our attitude toward springs. In 1927 Beckman recognized Ozark streams as a source of waterpower to generate electricity. He pointed to the hydroelectric plant at Taneycomo, where the Ozark Power and Water Company had dammed the White River and built a plant. Beckman turned to the Current River and

its chief tributaries—the Jacks Fork, and Welch, Blue, and Big Springs, where the underground storage capacity of the springs maintains the river's uniform flow, except when it rains. Otherwise, ordinary rains do not produce floods. Beckman concluded that the Current's uniform flow and the presence of good dam sites made it a suitable candidate for the development of waterpower, particularly south of the mouth of the Jacks Fork. Similarly, the presence of decent dam sites at Greer Spring, with its average flow of 209,000,000 gallons a day to maintain the Eleven Point's uniform flow, made it a candidate for waterpower development.<sup>9</sup>



**Blue Spring draws its water from Logan Creek, a losing tributary to the Black River, but delivers it to the Current River.**

Josiah Bridge, with the Missouri Bureau of Geology and Mines, enlarged on Beckman's studies of springs when he mapped the geology of the Eminence and Cardareva Quadrangles in Shannon County. He began his work the summer of 1922. He concluded that other than the Jacks Fork, most of the Current River tributaries are springs, giving

it the largest low-water flow of any river its size in the state.<sup>10</sup>

In discussing its physical characteristics, Bridge observed that the Eminence Formation is highly soluble along bedding planes, which creates the caves that litter the 450- square-mile Current watershed. Such solubility also produces systems of subterranean drainage capable of storing huge quantities of water. These systems come to the surface as springs, particularly Big Spring and Blue Spring, two of the largest.<sup>11</sup>





### **Logan Creek, Reynolds County: A Classic Ozark Losing Stream**

Bridge detailed the elements that contribute water to subterranean systems. Rainfall disappears into streams paved in highly porous rock and cobbles, which is sometimes hundreds of feet deep and absorbs all but the most extreme storms. He speculated, correctly, that Blue Spring in Shannon County reaches under the divide that separates the Current and Black River watersheds, and draws from Logan Creek, a dry stream except when it rains. In examining other large springs along the Current and Jacks Fork, he concluded that these dry streams tended to be adjacent to large springs. For example, Round Spring rose inevitably after heavy rains in the Spring Valley drainage basin adjacent to it.<sup>12</sup>

## Round Spring: Shannon County

Bridge observed that sinkholes contribute to the underground systems. He described Round Spring: "This spring occupies a large, circular sinkhole of Eminence dolomite." The rest are circular depressions underpinned by porous soil and rubble. They dot the upland of the Eminence Quadrangle. Where the soil is impervious to water, ponds form. Otherwise, surface runoff drains to them and into the underground system quickly. He gave the example of Alley Spring, where its flow ceased one day. When flow resumed

12 hours later, the spring spewed muddy water. At the time observers guessed that a sinkhole had formed in the uplands about 15 miles northwest of the spring, dropped rock and soil into the underground system, and blocked flow to Alley Spring.<sup>13</sup>







### Alley Spring: Shannon County

In 1917, Missouri established its state park system and allocated five percent of the funds collected from the sale of hunting and fishing licenses to the purchase and maintenance of well-watered land. Governor Arthur M. Hyde and his fish and game commissioner, Frank Wielandy, looked at the Ozarks and saw land was cheap, the natural landscape intriguing, and the interest great. Big Spring, Missouri's first park, opened in 1924. Negotiations began on the purchase of Round Spring, Montauk Spring, and Deer Run on the Current River and Alley Spring on the Jacks Fork.<sup>14</sup>

In 1944, Henry Claus Beckman turned from waterpower to tourism and collaborated with Norman Shreve Hinchey, a geologist, on Large Springs of Missouri. Beckman drew on the 20 years he had spent measuring the flow of springs; Hinchey supplied the data on their geology. They directed their book to tourists who visited the state parks centered around springs, local residents who used them for their water supply, teachers in public schools across the state to educate children about the state's waterways, and scientists who advance knowledge of Missouri's springs.



**Big Spring, a high storage spring, rises in a distinctive boil from the base of a bluff of Eminence Dolomite. It draws its water from a 426 square-mile-recharge area.**

To come up with his template, of the 34 successful traces Aley conducted within the Hurricane Creek surface watershed, which drains to the Eleven Point, none arrived at Greer Spring, the major tributary to the Eleven Point. All arrived at Big Spring and confirmed Bridge's supposition that Big Spring drew its water from as far away as Pike Creek at Winona, in the Eleven Point surface watershed. Of those he conducted in the larger Eleven Point watershed, all arrived at Big Spring proving the great extent of its recharge area. Two arrived at Greer Spring.

## Dye Tracing Groundwater

“Dropping dye in a sinkhole or a losing stream is like a cold call. You ring the number and see who answers.”<sup>16</sup> To understand how groundwater moves through a karst terrain, hydrogeologists use dye tracing, an art that had been developing since the nineteenth century, when most of the work was done in Europe. Researchers dropped large quantities of dye in a sinkhole or losing stream and then searched every well and every spring where the red or green water might spill out. Unfortunately, domestic wells also turned red or green, upsetting local citizens who used them for drinking and cooking. In 1906, American geologist R. B. Dole described the use of sodium fluorescein tracer tests in the U.S, but geologists did few tests before the 1950s. Until then, amateur cavers contributed most to our knowledge of the movement of underground streams.

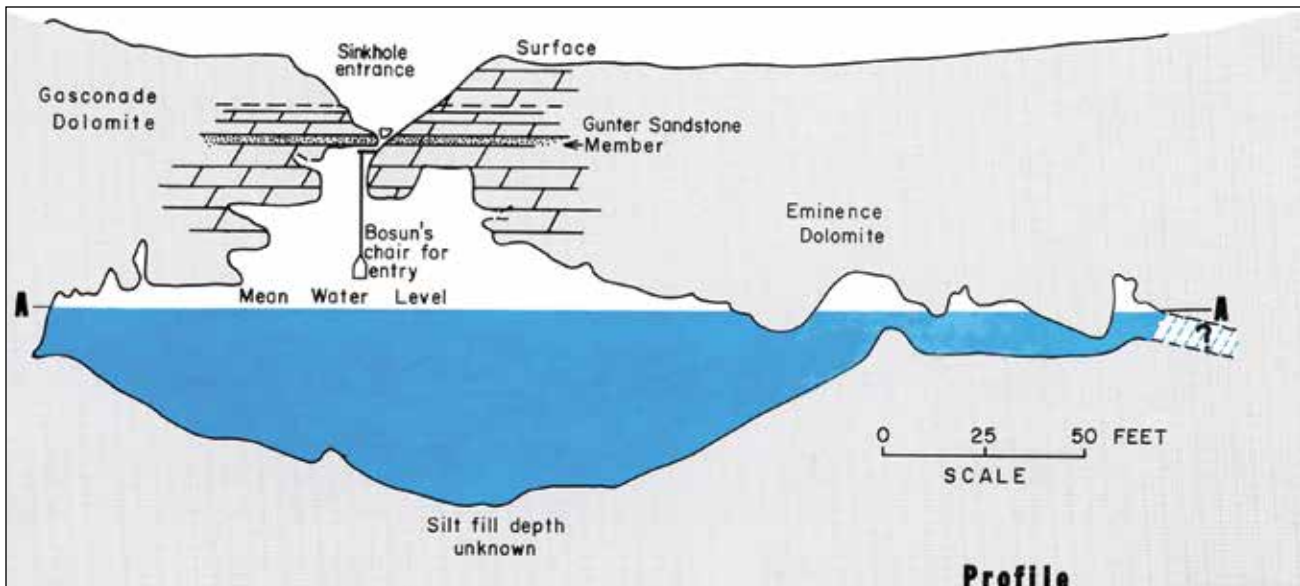
In 1957, J. R. Dunn flipped the process with the Dunn Bug, a small packet of activated coconut charcoal placed in a spring. Then dye was injected into a losing stream or sinkhole. If hydrogeologists selected the correct injection site, they returned to the spring several days or weeks later, retrieved the packet which had absorbed the dye in spite of repeated washings in the spring, and took the bug to the lab to test it for sodium fluorescein. The process still involved a lot of legwork. Select the wrong losing stream or sinkhole and the package could languish for weeks until found.



## Davis Creek

The first known trace in Missouri happened inadvertently in 1920. The Mid-Continent Iron Company didn't inject dye in Davis Creek, a losing stream filled with sinkholes. The Company disposed of its waste isopropyl alcohol in the creek, located ten miles west of Big Spring. It sunk into the underground system and delivered it to Big Spring, which carried it to the Current River. Residents of Doniphan on the Current River, 30 miles south of the spring, noticed their

drinking water, drawn from the Current, had acquired a foul taste. To learn its source, Newt Cockran poled his john-boat up river and found Big Spring gushing the foul tasting water into its spring branch. Cockran inadvertently discovered that Big Spring drew water from Davis Creek. Based on this information Josiah Bridge, who was doing his research into Current River country at the time of the dump, speculated, correctly, that Big Spring also draws water from Pike and Sycamore Creeks, all losing streams in the Eleven Point watershed.<sup>18</sup>



**Graphic of Devils Well, *From Springs of Missouri* (Image: Jerry Vineyard)<sup>18</sup>**

In 1961, Jerry Vineyard conducted the first dye trace in Missouri, using a Dunn Bug to test his theory that Devils Well, an open sinkhole, is connected to Cave Spring, a tributary of the Current River.

Devils Well opens onto a vast underground lake. In 1954, Bill Wallace, its owner, and his brother lowered a small boat into the lake at the bottom of the well and rode 100 feet down into the well on a bosin's chair—dangling on the end of a steel cable operated by a crank. They went exploring. They found the lake to be 400 feet long and 100 feet wide. Four springs splashed into the otherwise still lake. Two years later Jerry Vineyard, working on his master's thesis in geology, made the same trip down into Devils Well.

In December 1961, Jerry Vineyard secured his Dunn Bug in Cave Spring, dropped his fluorecein dye in Devils Well, and tested his theory that underground streams connected the two. A week later water, he retrieved his bug from Cave Spring and confirmed his theory.<sup>19</sup>

“Most caves in limestone or dolomite are, or have been, subterranean water courses.” Those are the opening words of the second paragraph of J. Harlen Bretz’s 1956 book, *Caves of Missouri*. He summed up Bridge, Beckman, and Hinchey about the role of the erosion of river valleys in the development of springs and their evolution into caves. He drew on Bridge to speculate that Big Spring’s water comes from surface streams that lose water to underground conduits and added Bridge believed that Big Spring drew its water from Davis, Pike, and Sycamore creeks. Thomas J. Aley would work on that theory a decade later.<sup>20</sup>

In 1962, Congress added the McIntire-Stennis Act to the 1960 Multiple-Use Sustained Yield Act. The first stipulated that surface activities such as outdoor recreation, timber, watershed, and fish and wildlife should be managed for the benefit of the American people. The McIntire-Stennis Act funded the Cooperative Forestry Research Program, focusing on forestry research by state-supported colleges and universities offering studies in it by the federal government. Forestry research included the “management of forest and related watershed lands to improve conditions of waterflow and protect resources against floods and erosion.” Within the U.S. Forest Service this act funded the Watershed Barometer Study.<sup>21</sup>

Byron Beattie, who directed the Division of Watershed Management within the Forest Service, and Edward Dortignac, Branch Chief of Water Resources of the Forest Service national office in Washington, D.C., proposed a study of watersheds within the national forest system to improve water yield, the amount of water delivered to a stream after precipitation. To measure water yield, the U.S. Forest Service would send out hydrologists, soil scientists, geologists, and natural resource managers, most of whom were recent graduates in their fields, to inventory and appraise 24 experimental watersheds within different national forests. They hoped the scientists would assemble enough information about the soil, vegetation, climate, and hydrological behavior of individual watersheds to predict how individual watersheds would respond to rainfall or drought.



**Pine River, one of the Barometer Watersheds, flows between tall sand dunes in the Manistee National Forest, Manistee County, Michigan.**

Their choice of watersheds varied from “semiarid to humid landscapes; from alluvial valleys to rocky hillsides, geological formations from soft sandstone and shale to hard granite; soils from coarse sand and gravel to fine-textured clays; and vegetation from semi-desert shrub to alpine tundra. Each watershed is a separate entity.” They called their experimental watersheds “barometer watersheds.”<sup>22</sup>

In 1966, the U.S. Forest Service hired Thomas J. Aley, stationed him at Winona, Missouri, and assigned him to a Barometer Watershed—Hurricane

Creek, a tributary of the Eleven Point River. Aley received his bachelor of science and master’s degrees in forestry, both from the University of California-Berkeley. For his master’s degree, he studied wildland hydrology in forests. He continued at Berkeley in the Department of Geography, where he studied hydrology and geology. He went on to the University of Arizona at Tucson in the Department of Watershed Management, again with a focus on wildland hydrology. However, much of what he learned about karst landscapes came through his work with the Cave Research Associates, a Berkeley-based nonprofit focused on cave research.<sup>23</sup>



### Mark Twain National Forest: Turner Mill Access Road, Eleven Point River

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Aley published a series of articles in *Cave and Karst*, the organization's publication. He laid out a method to measure water balance, defined as the amount of water that finally flows to a spring after rainfall or snow melt. First, delineate the extent of a watershed, both the surface and subsurface areas. Locate precipitation stations in the watershed. Calculate the loss of rainfall to interception, evapo-transpiration, and soil moisture storage. Rain falls on the trees and soaks into their leaves and bark—interception. How much is lost to interception depends on the density and species of the trees and other vegetation. Soil absorbs rainfall, some of which is lost when trees and other vegetation draw water from the soil through their roots and evaporate it through their leaves—evapo-transpiration. Such loss is dependent on regional temperatures; generally, the higher the temperature, the greater the loss. What is left is water available for surface or subsurface runoff. But surface runoff only happens on saturated soil, which depends on the character, texture, depth, and rock content of the soil. Measure surface runoff with gauges in streams, subtract that from what is left after interception, evapo-transpiration, and soil-absorption and you have the amount of water that slips into the underground stream.<sup>24</sup> He rounded out his water balance study with a study of Greer Spring.

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In 1965, Aley purchased Tumbling Creek Cave in Protem, Missouri, with the intention of setting up an Underground Laboratory. But first, he went to work for the U.S. Forest Service and the Hurricane Creek Barometer study. Between 1966 and 1973, Aley directed the study of the watershed and its larger region. That done, he returned to Protem, opened his underground lab, and completed his project report in 1974, while under contract with the Forest Service. The report provided a template for understanding and managing a karst watershed.

He laid out a method. First, collect basic data on the geology of a watershed, its geomorphology, its climate, and its land use.<sup>25</sup>

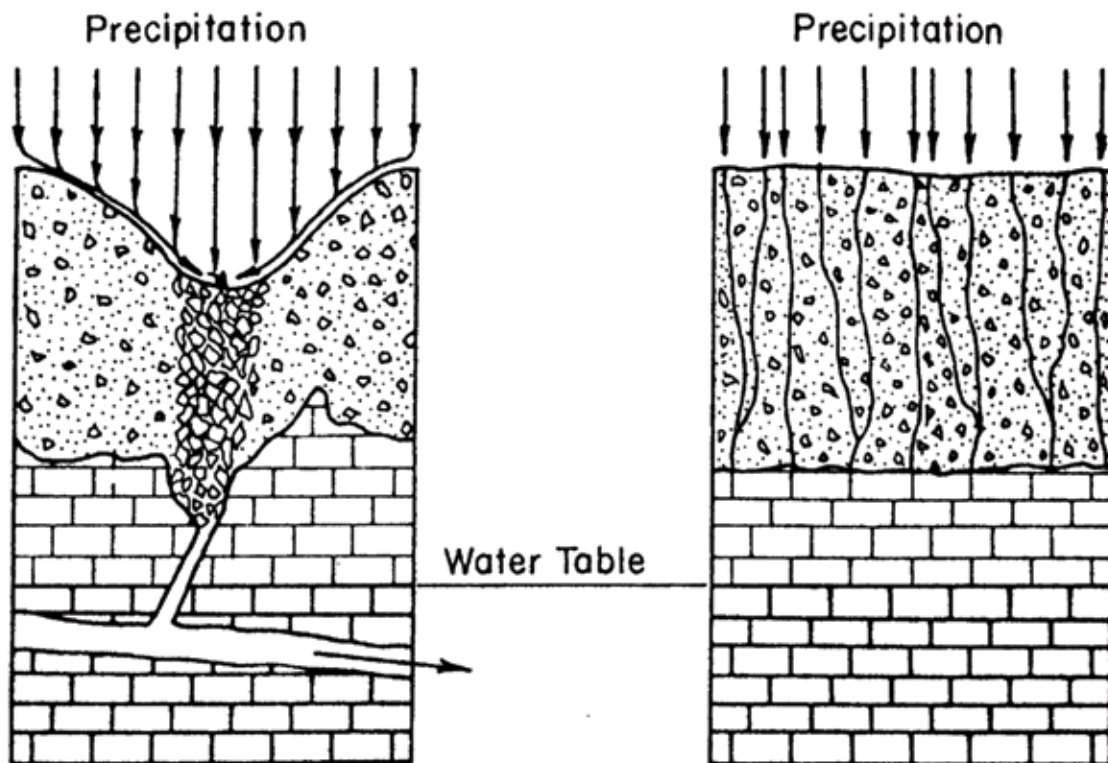


Figure 5-1. Comparison between discrete and diffuse recharge.

Discrete Recharge:

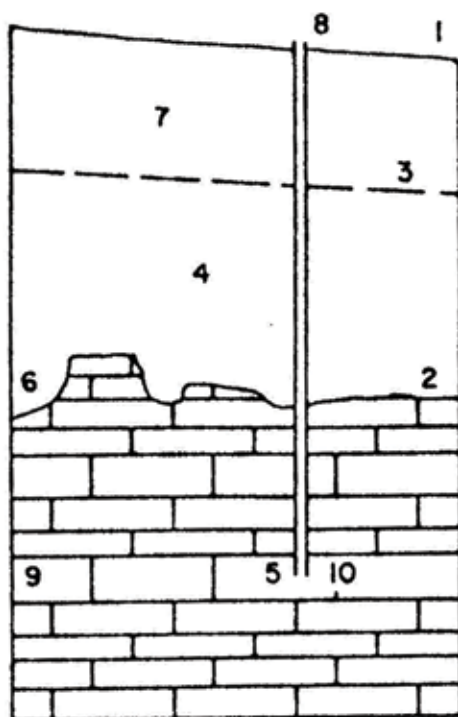
Diffuse Recharge:

**Thomas Aley illustrated groundwater recharge with this drawing. (Image: Thomas Aley)<sup>26</sup>**

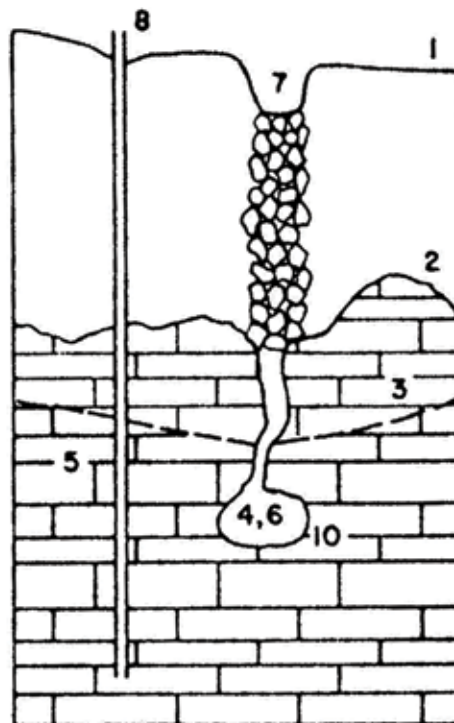
Then, distinguish between discrete groundwater recharge and diffuse groundwater recharge. Discrete recharge pours directly from the surface into sinkholes and losing streams, through solution-widened joints and into underground channels. Diffuse groundwater discharge seeps down through the soil in the uplands, on the hillsides, and through floodplains in river valleys to the water table and the rock formations underneath.<sup>27</sup>

Manage the landscape with the understanding that the surface and subsurface are intimately connected. Contaminated water can enter the underground system through both discrete and diffuse recharge.<sup>28</sup>





**Water in Storage  
(5-10-A)**



**Water in Transit  
(5-10-B)**

**1 A/B Ground; 2A/B Contact between Residuum and Bedrock; 3 A/B Water Table; 4A Storage Water in Residuum, 4B Transit Water in Conduits; 5A Storage Water in Bedrock; 5B Some Storage Water in Bedrock; 6A Slow-moving Storage Groundwater; 6B Fast-moving Transit Groundwater; 7A Both Discrete and Diffuse Recharge; 7B Mostly Discrete Recharge; 8A/B Wells; 9A High levels of minerals; 10B Subject to High Levels of Contamination (Image: Thomas Aley)<sup>29</sup>**

Distinguish between water-in-storage and water-in-transit. Pores in residuum in aquifers hold water-in-storage. So do solution-widened joints in bedrock and bedrock itself, particularly sandstone. Water-in-storage draws from both discrete and diffuse recharge areas; water-in-transit draws only from discrete recharge areas and moves through conduits at speeds greater than one-foot an hour. Water-in-storage hardly moves at all, less than one-foot an hour. Water-in-storage leaches more calcium and magnesium from the rocks that store it than water-in-transit. Water-in-storage is less subject to contamination and therefore has lower levels of bacterial pollution than water-in-transit. Bacteria sit so long in water-in-storage they die. However, should pollution get into water-in-storage, it will stay a very long time. Water-in-transit moves so fast it does not give bacteria a chance to die and speeds it to the spring.<sup>30</sup>



**Big Spring, a high storage spring, rises in a distinctive boil from the base of a bluff of Eminence Dolomite. It draws its water from a 426 square-mile-recharge area.**

Of the 34 successful traces Aley conducted within the Hurricane Creek surface watershed, which drains to the Eleven Point, none arrived at Greer Spring, the major tributary to the Eleven Point. All arrived at Big Spring and confirmed Bridge's supposition that Big Spring drew its water from as far away as Pike Creek at Winona, in the Eleven Point surface watershed. Of those he conducted in the larger Eleven Point watershed, all arrived at Big Spring, proving the great extent of its recharge area. Two arrived at Greer Spring.



**Falling Spring is a high transit spring, with 63.5 percent of its water coming from small intermittent valleys in the uplands above the spring. The rest comes from storage water in the residuum covering the uplands and the bedrock underneath.<sup>31</sup>**

Differentiate between high storage springs and high transit springs. High storage springs, Big Spring and Greer Spring, draw on great reserves of water stored in bedrock aquifers, deep under the large river valleys, the Current and the Eleven Point. Smaller, high transit springs, Falling and McCormack Springs, pirate from the shallow bedrock and residuum of large storage springs.<sup>32</sup>

Aley understood that the dolomites and sandstones under the Hurricane Creek watershed hold water, but hydrogeologists had yet to define the Ozark Aquifer. That did not come until after 1978 when Congress mandated the Regional Aquifer-System Analysis, "a systematic effort to study a number of the Nation's most important aquifer systems." The U.S. Geological Survey published the study that defined the Ozark Aquifer in 1994.<sup>33</sup>

## Hurricane Creek: Losing section south of Falling Spring Hurricane Creek: Losing sections south of Falling Spring

Aley measured losing sections of Hurricane Creek. Between Falling Spring and Blowing Spring downstream, Hurricane Creek loses 10 cubic feet per second (cfs) on a regular basis. A quarter of the loss comes in a 700-yard section of the creek, several yards downstream of the spring. The mill-pond at the spring can lose as much as 1.5 cfs.<sup>33</sup>





### Jam Up Creek: Mountain View

Jam Up Creek, a losing stream, flows directly behind the Mountain View Waste Treatment Plant and past an old sewage lagoon not far from the plant.

Understand how land use and management can degrade springs. There is no such thing as natural filtration that “can erase the mistakes of water quality management on the surface.”

Distinguish between point source and non-point source contamination. Never locate point sources of contamination—sewage lagoons, solid waste, or industrial waste—near discrete recharge zones—sinkholes and losing streams. Sinkholes are not dumps. Diffuse recharge is subtler than discrete recharge. Pesticides or herbicides, sprayed on pastures or in forests, diffuse slowly through residuum, but they still end up in the underground system. Be careful where you site feedlots and poultry farms. High concentrations of

manure can nourish bacteria, viruses, and algae that end up in the springs. Understand that unwanted sediment can reduce both discrete and diffuse recharge rates. Bulldozing forests to convert land to pasture can send sediment into streams. Stripping hillsides of trees can send vast quantities of sediment into streams and retard recharge. Understand that engineering losing streams changes their character. Floodwater retention dams on small streams increases recharge into the underground system. However, the poor quality of floodwater can degrade springs. Straightening the channels of losing streams speeds water through a narrower channel and decreases both discrete and diffuse recharge. Understand that sewage lagoons can increase recharge within their immediate surroundings. Nutrients spewing from sewage lagoons spawn algae and other plant growth that end up in streams. Solids released from lagoons settle and retard recharge in streams.<sup>34</sup>



### Mammoth Spring in Arkansas

When Aley dropped dye into the Middle Fork of the Eleven Point near Fanchon, 13 days later it showed up in Big Spring, 39.5 miles away. He checked out the sewage lagoon at Mountain View and found that its effluent disappeared into a losing stream within a mile of the lagoon and ended up in Big Spring, 38.1 miles away. He went off the grid, dropped dye in the Dora Sinkhole—used as a dump—and retrieved his bug in Hodgson Mill Spring on the North Fork, 5.6 miles away. He dropped dye in Renfrow Spring, near West Plains, way off the grid. It showed up in Mammoth Spring in Arkansas, just south of the Missouri border.<sup>35</sup>

Aley's work, particularly the Mountain View, Dora Sinkhole, and West Plains traces, "raised public awareness of the ease with which karst groundwater systems in the region could be contaminated." He intended for his template to be used to understand and manage karst landscapes similar to the Hurricane Creek Study area. It was. Aley himself went on to use it to do dye traces on springs that flow to the Jacks Fork and Current for the NPS. When hydrogeologists with U.S. Geological Survey and its Missouri counterpart began to study the impacts of lead mining on the Hurricane Creek

watershed and Big and Greer Springs two decades later, they turned to Aley's (A Predictive Hydrologic Model for Evaluating the Effects of Land Use and Management on the Quantity and Quality of Water from Ozark Springs.) When they expanded the work to study all the springs that feed the Current and Jacks Fork, they turned to Aley's later work for the National Park Service.

## ENDNOTES

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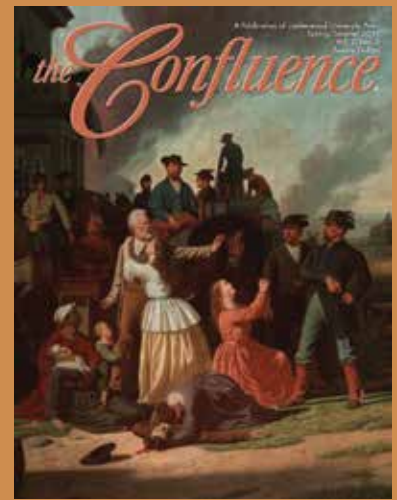
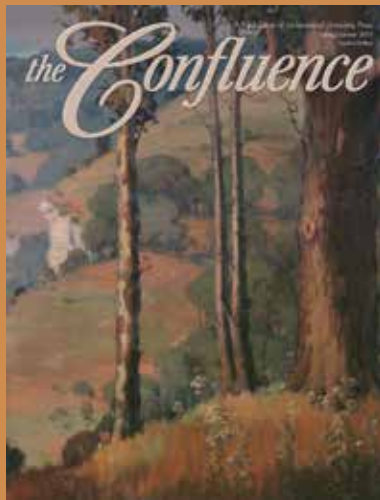
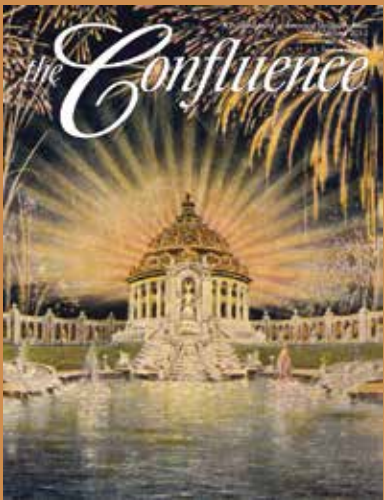
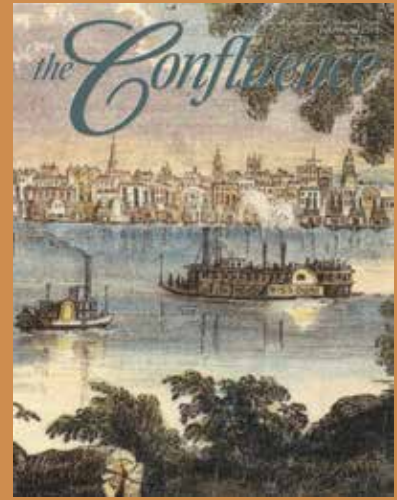
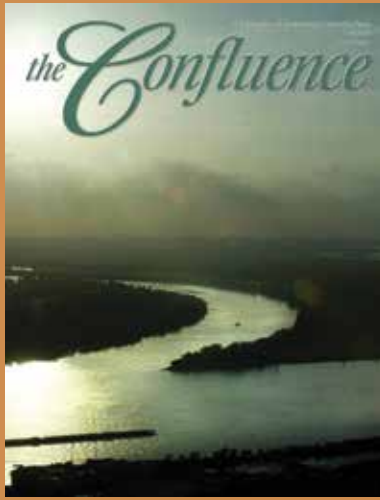
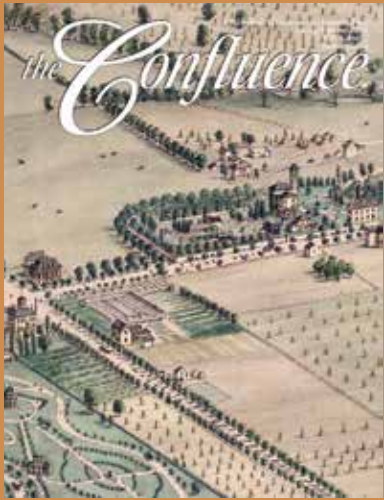
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This article would not have been possible without the help of Jerry D. Vineyard, retired geologist with the Missouri Geological Survey, and Thomas J. Aley with the Ozark Underground Laboratory.

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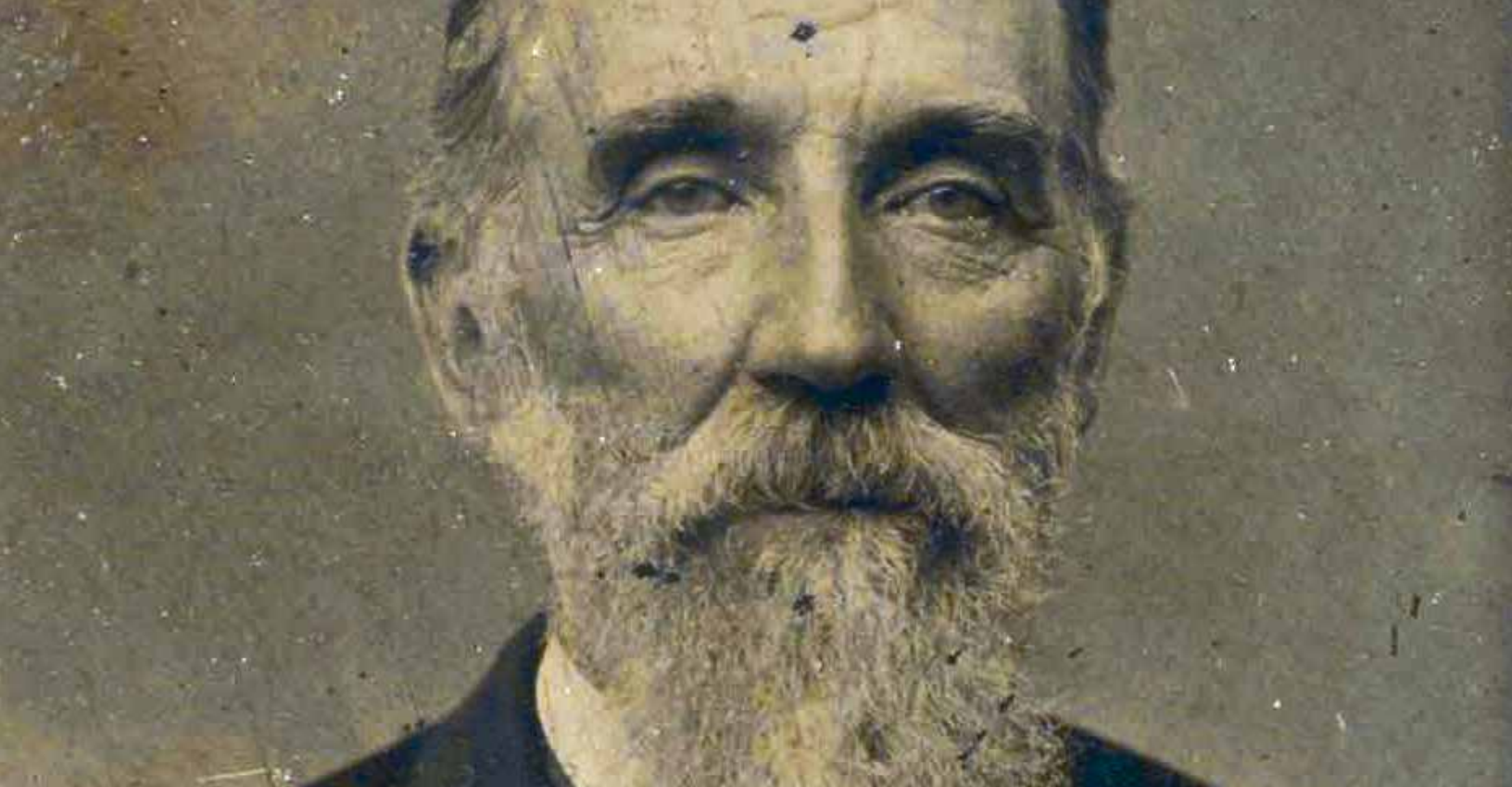
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# Over the Santa Fe Trail to Mexico: The Diaries and Autobiography of Dr. Rowland Willard, 1825-1828

BY JOY POOLE

informed that my efforts were  
at all together safe at his house  
having stood in the pillory  
the crime of stealing left  
house the next day which  
almost considered an insult  
by Spaniards, Commenced  
sailing Sunday 3<sup>d</sup> July.  
to Pablo Lucero at 12 P.M.  
at which place I put  
to rest, say it being the main  
the best house in town.  
a 2 balls for med. set sail  
Monday 3<sup>d</sup>. Appart to be but  
the regard to religious here  
they have a small church of  
incredible magnitude. I  
went service to day. The  
sold employed most of  
company in being business for  
company. Several Lang-  
angos in afternoon & evening

Manners extremely rude  
in coat - ladies tawny and  
of beauty or modesty. Com-  
giving Dr. Canal - medicine  
Monday 4<sup>th</sup>. This is an the  
sary ever bear to an and  
Am determined to commence  
it in some way - perhaps  
the company to go through  
giving evolutions, I also  
a play on which I placed  
resemblance of the American  
Eagle to show to the  
our national spirit and  
Several Langungos at  
New giving but many citizens  
midst the street scene of  
gambatory evolutions were  
a procession. Citizens & Am-  
not joined with music at  
head and marched to ev-  
part of the town with  
rejoicing of Viva La Repu-



Rowland Willard. 1794–1884

(Image: Rowland and Elizabeth S. Willard Papers, Beinecke Rare Book and Manuscript Library, Yale University)

In 1825, Dr. Rowland Willard—a carpenter by trade and physician almost by accident—arrived in Chihuahua, Mexico, after making the long journey from St. Charles, Missouri. The first American doctor ever to work in the new nation, his timing was fortuitous. A measles outbreak was under way, and the young doctor set to work to address the epidemic. Within two months, Mexico’s legislative body had granted him a license to practice, and Dr. Willard began treating all sorts of patients with all sorts of problems—gaining experience, earning the confidence of the people, and building a flourishing practice. He averaged about twenty patients per day and garnered enough respect to be offered the directorship of the local hospital, an offer he declined due to the demands of his private practice.

Unfortunately, despite his success, less than three years later the Mexican government decided to expel the country’s non-Mexican citizens. After deliberating his situation, Dr. Willard packed his tools, collected on his accounts, and prepared to make his way back to the United States. He traveled to the Texas coast and across the gulf to New

Orleans, where he booked passage on the Mississippi River steamboat *Cortland* to Missouri. He stated that he smuggled \$2,400 but deposited \$7,000 in the Bank of New Orleans—equivalent to \$170,000 in 2016.

Dr. Willard’s curious Mexican adventure might have been lost to history, had it not been for the pocket-sized travel journal he faithfully carried with him during his travels. In retirement, he used that journal and his other notes and diaries to compose an autobiography. Published as *Over the Santa Fe Trail to Mexico: The Diaries and Autobiography of Dr. Rowland Willard, 1825–1828*, Dr. Willard’s writings reveal more of his international adventures while providing us with a window to the times stimulates the imagination and brings us face-to-face with the rough realities of frontier living.

Dr. Willard’s story begins in Fort Ann, New York, where he was born on August 4, 1794. After becoming a skilled carpenter, in 1817, at the age of 23, he joined a group of friends who formed an exploration company to travel down the Allegheny and Ohio rivers. Most of the men left the company, staying behind in any one of the river communities

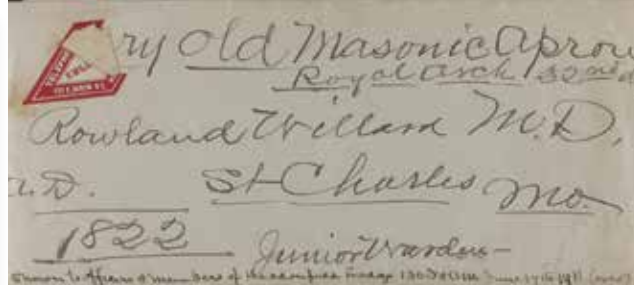
Left—Facsimile of Rowland Willard’s Diary. (Image: Rowland and Elizabeth S. Willard Papers, Beinecke Rare Book and Manuscript Library, Yale University)



Masonic Apron of Willard obtained in St. Charles, Missouri in 1822. Willard was a member of the Hiram #3 Lodge and served as a Junior Warden. The apron has the royal arch and keystone symbols. The first step in York rite free masonry is through the royal arch. The keystone is symbolic of Hiram the builder. From his autobiography Willard states, "I became a candidate & passed to the 3d degree, & was soon elected to the 3d office in the lodge which I had during my stay there. This station served greatly to introduce me to the notice of men of distinction. & especially during the session of the [Missouri] Legislature in the place which occurred during the last winter of my stay there. The lodge had the honor to initiate pass & raise, quite a number of the legislative members during that winter & most of the work devolved on me." (Images: Rowland Willard – Elizabeth S. Willard Papers, Beinecke Rare Book and Manuscript Library, Yale University)

along the way. Willard and two other men, however, navigated the rivers to St. Louis. There, he learned about two brothers, both physicians, who were looking for a carpenter to build them a house in St. Charles. Willard and his partner, a Mr. Postal, traveled on to St. Charles and met with Drs. Seth and Jeremiah Millington. Upon agreement, Willard and Postal sent for their tools in St. Louis. They

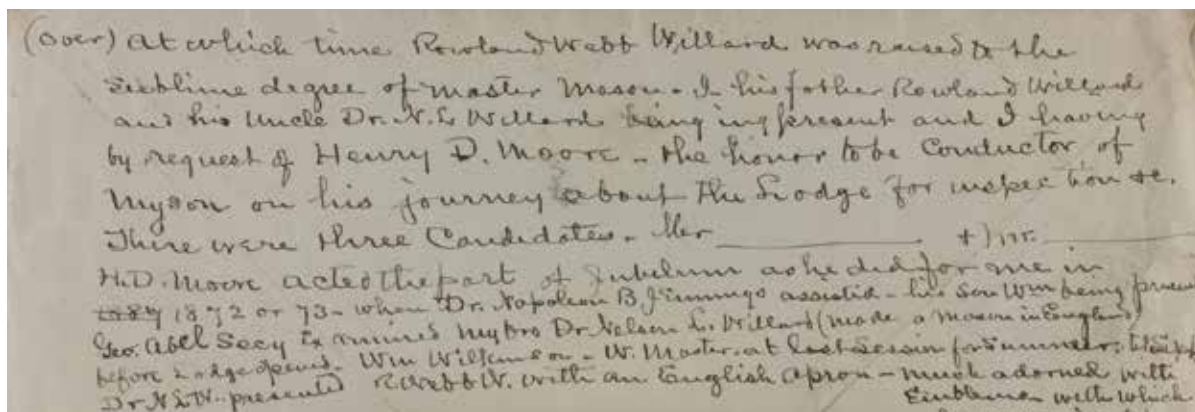
Rowland Willard, a carpenter, was a member of the Hiram No. 3 Lodge. He served as a junior warden in St. Charles, Missouri in 1822. The apron features a royal arch and keystone, both symbols of York Rite Freemasonry. (Image: Courtesy of the Author)



built a two-story house. During the next five years in Missouri, Willard continued to make a living as a carpenter.

Willard was active in St. Charles community events. He was a member of the Harmonic Society, a local band; the Presbyterian church; and the Hiram #3 Masonic Lodge. The lingering recession from the panic of 1819 brought his business to a standstill, causing him to rent his Main Street house for \$300 a month. In 1822, Dr. Millington, considered the principal physician, recognized Willard's dilemma and his potential talents. He invited Willard to serve as his medical apprentice, clerk in his apothecary, and live in its upstairs residence. Willard accepted the offer and began to study Millington's medical textbooks in his library and assisting him during medical appointments. He learned to mix drugs and potions. When a post office was established in the apothecary, Willard became the deputy postmaster. The apothecary and post office were located one block from the state capitol and served as a center for community gatherings. Politicians, traders, farmers, and residents collected their mail, lingering to gossip and exchange the news of the day. Willard undoubtedly engaged in conversations and heard that the burgeoning Santa Fe Trade with Mexico was proving lucrative not only to individuals in Missouri but to the nation as a whole. He may have also attended one of the organizational meetings in a tavern where men interested in joining the Santa Fe trade expedition could learn the requirements for the annual spring caravan.

By the spring of 1825, Willard had finished his





Dr. Millington's apothecary, post office, and upstairs residence on Main Street in St. Charles, MO. Construction was most likely started by Rowland Willard and Mr. Postal, both carpenters, upon their arrival in 1817. (Image: Courtesy of the Author)

medical studies. After eight years in St. Charles, he was ready for another expedition. Suffering from occasional episodes of fever (probably malaria), he decided to leave Missouri's unhealthy climate and depressed economy and go on a wilderness adventure to Mexico. William Pettus, a personal friend and Missouri's secretary of state, asked Governor McNair to provide Willard with a "recommendation letter, couched in form of Passport, bearing the impress of the great seal of the state." This laissez-passer "was of incalculable advantage" to him afterwards as he traveled and presented it to government officials. In preparation for the expedition, Willard ordered a portable pine chest with drawers to carry his medicines and made arrangements for a pistol to be manufactured. Soon, he threw his saddle over his horse and headed west to Fort Osage, the rendezvous site for the 1825 spring caravan. He left with a group of 33 packers for Mexico, in search of improved health, adventure, and financial fortune. Upon their arrival in the Taos valley, the word of an American physician quickly spread through the Hispanic villages. After the fall caravan of Missouri traders left New Mexico, he realized his goals for a lucrative



Willard's route from Missouri through Indian Territory to New Mexico, May 6–July 2, 1825. (Image: Santa Fe Trail Association)

practice in Taos were unrealistic and decided to travel further south into Mexico.

After his return to America following his medical service in Mexico, he lived for a time in Cincinnati, where he met and married Elizabeth Borland. Some of the Spanish expatriates also settled temporarily in Cincinnati. There, Dr. Willard reciprocated the kindness extended to him in Mexico by assisting them as a translator and advising his friends on their business and legal affairs in the United States. In 1834, Timothy Flint included an essay from an interview with Dr. Willard in the fur trade book classic *Personal Narrative of James O Pattie*. Willard gained some notoriety in his community from those who read about his adventures in Mexico. He and Elizabeth relocated to Indiana, where they raised three sons, all highly educated. Forty years later, Dr. Willard retired from his practice and various land and business speculations and moved to Haddonfield, New Jersey.

He passed away in Haddonfield on March 10, 1884, at the age of eighty-nine. Following is an excerpt from his diary and autobiography, capturing one young doctor on the eve of his unbelievable adventures adrift in a new land, among unfamiliar people, amid unimaginable conditions.

### Excerpt from the first diary: May 6, 1825–January 20, 1827

Left St. Charles [Friday] May 6 1825 at 3 Ock P.M. rode 9 miles Put up with Judg Farnsworth<sup>1</sup> Took a cold cut in the morning and rode to Pond Fort<sup>2</sup> & dined. Put up at Prices<sup>3</sup> having traveled 42 miles  
Sunday [8] Travelled From Prices to Col. Warners<sup>4</sup> next day, 28 miles Mare took lame day before consequent to tying hobbles to tight Heavy Shower at 3 reached Warners at dark.



When Willard left St. Charles for the Santa Fe Trail, it was just a hamlet hugging the Missouri River.

Monday [9] leave after breakfast Several Showers this day Swapt My Dory gave 5.00\$ to boot. passed Columbia<sup>5</sup> 4 miles put up at Mr. Atkins<sup>6</sup> 28 miles from Warners fared hard but well treated Started next morning early in the rain forded the Persia<sup>7</sup> and breakfasted with Judge

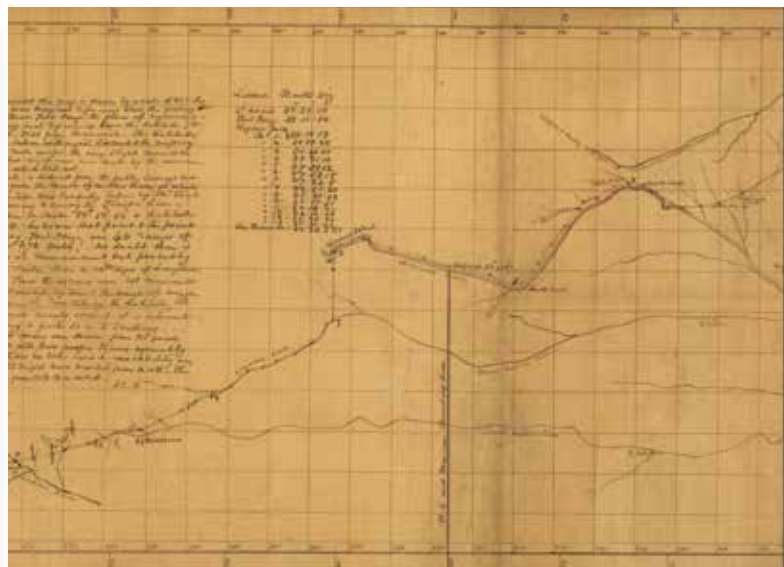
Lyntz<sup>8</sup>, fared sumptuously Reached Franklin<sup>9</sup> at sunset after Swimming 3 creeks and riding in alternate shower all day, dis 28 miles was overtaken by Marble<sup>10</sup> and Knight<sup>11</sup> next morning bound for St. Fe. Procured several necessaries 10 lbs crackers 5lb Beef canteens & ca<sup>12</sup> Left Franklin at 2 P.M. traveled 13 miles & put up at Reses<sup>13</sup> 1 mile from the Ferry.<sup>14</sup>

Thursday [12] Breakfasted at Mr. Smiths. Put up at Davises<sup>15</sup> where we turned our horses out to grass. rode 30 miles.

Friday [13] Breakfasted at Mr. Estes<sup>16</sup> from N. York well treated reached Lexington<sup>17</sup> at dusk. rained most of the day. rode 30 miles \_very muddy. People treated us with considerable attention Staid next day for Marble & Knight to purchase their goods & lay in such articles as was necessary for this tour 15 lb. bacon Tea, Shugar & c.

Left Lexington Sunday 15th and overtook the company at Sunset Some rain this day. Traveled 22 miles. Company in good spirits and consisting of about 90 men & 30 odd waggons, 33 men agree to start next day with pack horses and not wait for the waggons.<sup>18</sup>

Monday 16th Morning fine encamped last night under tent for the 1st time in my life Took leave of the company<sup>19</sup> and proceeded 10 miles to the blue Springs the place of rendezvous.<sup>20</sup> Some rain. Elected



George Sibley drew this map of his route travelling the Santa Fe Trail in 1825-27. Sibley was part of the Santa Fe Trail Commission, created by Congress to map and survey the trail, and to sign treaties with the tribes whose land the Trail crossed. (Image: Lindenwood University)

a Captain<sup>21</sup> & Lieutenant<sup>22</sup> R. W. Morris<sup>23</sup> the former & J. Fultcher<sup>24</sup> the latter, found a plenty of venison at this place killed by some of the company.

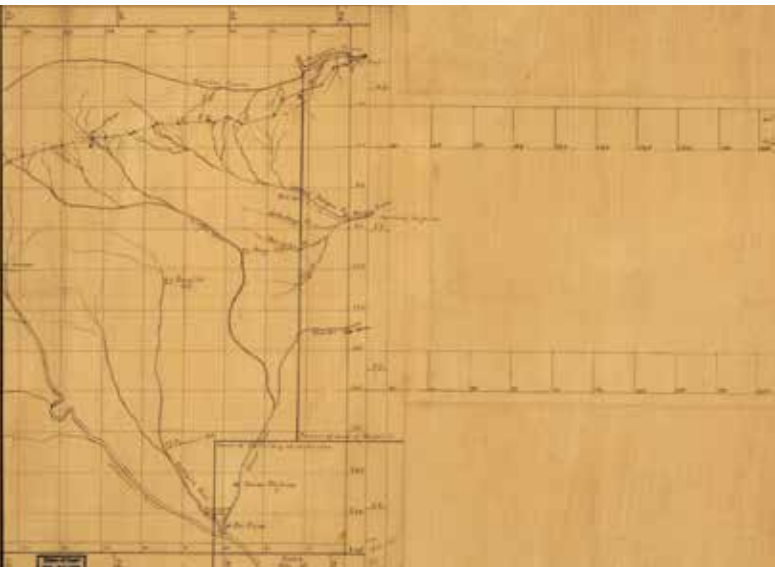
## Autobiography

Early in the spring of 1825 it was reported that quite a company of traders were fitting out for New Mexico, & were to start as soon as the spring should open. I was now tiptoe for adventure, & from what I could ascertain of the country & climate (of Mexico), I suddenly made up my mind to be one of the company.<sup>25</sup> The intermittent fever would throw me down every few days but I nevertheless persevered in making myself ready for the expedition. I ordered two portable trunks or cases of drawers, made exceedingly light of pine, and covered with buckskin. These could be thrown open so as to form a neat display of lay billed [labeled] drawers denoting the medicines within & which I found exceedingly convenient where ever I stoped.

I purchased two good horses, saddle & Bridle with other things necessary for a long wilderness trip or journey.

The friends were very kind in rendering me any assistance in their power & were the more officious as the company had passed through town some twelve days before.

We could still hear of them however as lingering in the upper settlements, that the grass might be



to come

sufficient to subsist our animals.

I had a good rifle, & having ordered a brace of rifle pistols was detained for the completion.<sup>26</sup> All things were at length in readiness, & I set off in company with a young man by the name of Albert Boon[e]<sup>27</sup> (a grandson of the celebrated Daniel Boone) he wishing to visit his Bro in law some four days travel on my way. My friends honored me with salutations of parting, & kindly invoked a protecting providence to accompany my process, considering it as they did, an adventure of some moment at that time.

I left St. Charles on 6th of May 1825 setting my face toward a foreign land, determined to overcome any obstacles that might impose themselves in my way, confident that with ordinary good fortune, I would make it pay something. After leaving Colonel Warners & my companion Boon, pressed forward in order to overtake my company before they should leave the settlements. The season was quite rainy, & the creeks & rivers high & some were passed with difficulty. I remember that when coming to the Sharriton,<sup>28</sup> I found it swimming. To swim my horses with their loads, would subject myself, clothes & medicines to injury at least if not to ruin, & I was at first at a loss how to surmount the obstacle. But having purchased a coil of small rope fearing I might need for something made it available this occasion. I saw that night was at my heels & the wilderness seemed unbroken & hence expedition alone could relieve me from present dilemma. I took my rope & tied one to my riding horses bridle & thru uncoiling my rope slung it a cross the stream, lodging the

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end upon the other bank, and stripping my horses of everything carried it over on my back a cross a tree which spanned the river, & when all was over, caught the end of my rope & pulled my horse into the stream the other followed swimming over to my embrace I soon had them saddled & on my way. I got to Franklin after dark having rode through alternate showers all day.

Put up with Captain Means with who I was some acquainted but more particularly with his daughter Eliza<sup>29</sup> who had spent the previous winter at St. Charles & with whom I had passed several convivial evenings.

Finding me on my way to Mexico, they proposed assisting me to my outfit. The Negroes were set to baking crackers for my journey which took them nearly all night.

In the morning early Mr. Marble & Mr. [Mc] Knight arrived they having chased me all the way from St. Charles. They were also destined for Mexico & needed the same outfit as myself & hence the poor Negroes had no respite, but forced to continue their cracker trade.

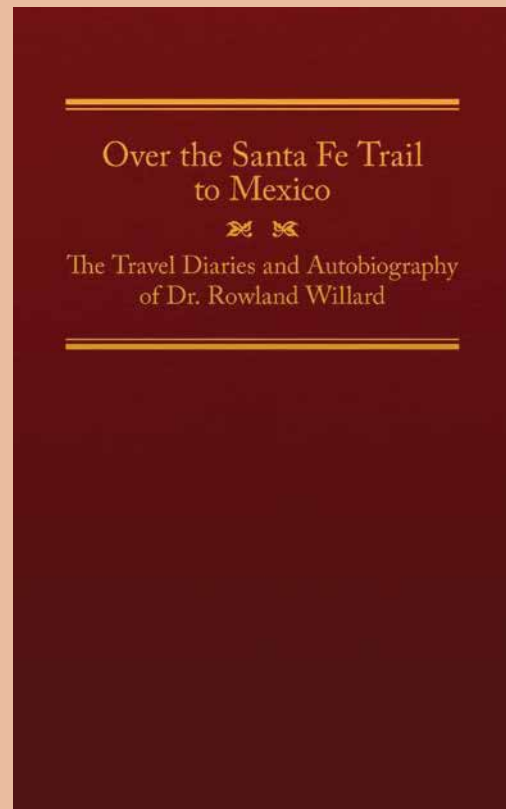
At this place I met with an old acquaintance by the name of Storrs a grocer. He professed to know what all we wanted. I told him to procure everything necessary, which he did with great clarraty. He went to the trimmers, & ordered for us six canteens for water, a pair of hobbles for each horse, Tea, Sugar, salt & etc. etc. etc.

The 2d batch of crackers having been baked, & everything in readiness, we were on our way, much relieved of my former loneliness. We arrived at Lexington<sup>30</sup> on the eve of the 13th where we tarried for one day for Marble & [McK]night to lay in their goods. The next day we left the settlement & struck out into the wilderness & travelled 30 miles where we overtook the main company.<sup>31</sup> Here I spread my tent for the 1st time.

The next morning was pleasant, & everything looked novel & interesting. Among the company I found several with whom I had been partially acquainted, & who greeted me with hearty welcome. After breakfast, the packers concluded that it would be expedient to separate ourselves from the main company & go forward believing we could out travel the wagons.

We accordingly took our leave & proceeded to the Blue Springs<sup>32</sup> some ten miles distant, and then halted to organize our company by choosing R. M. Morris for our Captain & J. Fultcher, as Lieutenant also Sargeants of the guards. At the Blue Springs we found in waiting 4 men whose names were Stone<sup>33</sup>, Glass<sup>34</sup>, March<sup>35</sup> & Andrews<sup>36</sup>, who desired to accompany us for the purpose of hunting & trapping on the head water of the Rio [Bravo] del Norte.

When we came up to them, they presented us with plenty of venison which they had killed, while laying there awaiting our arrival. It appeared that they had started with each a mule & an outfit of traps but in crossing a bad stream, lost three of their mules & many of their traps. And having but one mule left their remaining traps & baggage proved a load for it, & they obliged to walk. These men had been several trips among the mountains for Beaver. But it mattered little whether they got much or little, for when arriving to the settlement, would debauch until all was spent, & then off again, at least such I was told was the case with Stone, & Glass, the former a middle aged man, but Glass was quite advanced in life probably 75. He was by birth a Highland Scotch man, & still retained the kilts & cap of his native country. In his selection of Messrs, seemed rather inclined to fraternise with Mr. Rennisons mess, & the one I belonged to & hence his game, which he killed almost daily was mostly brought to our messes he being considered our hunter. On one occasion he went out just prior to coming to the Buffalo, & chanced to meet with an Indian horse, which he found had been ridden. He managed to make a bridle of bark, and succeeded in catching him, & who should come riding up at night but father Glass delighted with his game.



For a complete account see *Over the Santa Fe Trail to Mexico: The Diaries and Autobiography of Dr. Rowland Willard, 1825–1828*. 279 pp., \$29.95 hardcover

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## ENDNOTES

- <sup>1</sup> Judge Biel Farnsworth (1772–1847) was one of the original county judges of St. Charles County, Missouri, when Missouri was established as a state in 1821. St. Charles County was administered by a panel of three judges. As a county judge, he would have been responsible for decisions regarding such issues as taxes, road work, law enforcement, and schools. Judge Farnsworth had property nine miles west of St. Charles in Dardenne Township, on or near the Boone’s Lick Road near present-day Cottleville, Missouri.
- <sup>2</sup> Pond Fort was one in a series of private forts built as a line of defense during the Indian Wars of 1812. Pond Fort was built by a company of Missouri Rangers under the command of Captain James Callaway. John R. Bell, a member of the Long Expedition, wrote, “It was constructed of log & a square, whose sides are about 200 feet, having block houses at each of the angles, with the interior, and joining to the sides are erected cabins for the accommodation of families, when they resort to the fort for safety. It was named Pond Fort because of a large pond 200 hundred yards north of the fort.” John R. Bell, “The Journal of Captain John R. Bell: The official journalist of the Stephen H. Long Expedition to the Rocky Mountains, 1820,” edited by Harlan Fuller and Leroy R. Hafen, Vol. 6 of *The Far West and the Rockies* (Glendale, Calif.: A.H. Clark, Co., 1854–1861), 64.
- <sup>3</sup> Lemuel Price of North Carolina came to Missouri in 1814 and lived in a fort for a year. In 1815, he and others erected a cabin on the Boone’s Lick Road near Camp Branch, in Warren County, Missouri. George Sibley, in June of 1825, rested for a while at Price’s cabin. Sibley notes that the Loutre Prairie beyond Price’s cabin was infested with flies, and they waited until sunset before continuing on their journey across the prairie. William Smith Bryan and Robert Rose, *A History of the Pioneer Families of Missouri* (St. Louis: Bryan, Brand & Co. 1876), 222. Kate Gregg, *The road to Santa Fe: the journal and diaries of George Champlin Sibley and others pertaining to the surveying and marking of a road from the Missouri frontier to the settlements of New Mexico, 1825–1827* (Albuquerque: University of New Mexico Press, 1952), 50.
- <sup>4</sup> Wyncoop Warner was sheriff of Callaway County from 1820–1826. He opened a tavern west of Williamsburg on a variant route of the Boonslick Road, often referred to in Callaway County court records as the Columbia Road. By December of 1825, he was granted a patent as assignee of Nathan Boone for eighty acres about seven to eight miles west of present-day Williamsburg, Missouri. “Sheriff’s Office,” Callaway County, accessed June 7, 2014, from <http://www.callawaysheriff.org/content.php?cid=66>. “General Land Office Records,” U.S. Department of the Interior, Bureau of Land Management, accessed June 7, 2014, <http://www.glorerecords.blm.gov/details/patent/default.aspx?accession=0103-416&docClass=CV&sid=m3qk351b.zyn#patentDetailsTabIndex=1>.
- <sup>5</sup> Willard traveled the Boone’s Lick Road that was used after 1816 and went from St. Charles to Franklin, Missouri. Many of the settlers going west to the Boone’s Lick area used this road. Columbia, the present seat at Boone County, was begun in 1819 by a group of settlers as Smithton. It soon was moved a bit east in 1822 and renamed Columbia. The original Boone’s Lick Road went north of present day Columbia. By 1822, travelers headed southwest from Williamsburg along a longer route directly through Columbia since the growing community offered amenities. Hal Jackson, *Boone’s Lick Road: A Brief History and Guide to a Missouri Treasure* (Woodston, Kans.: Trails Press, 2012), 36–37.
- <sup>6</sup> Roland Adkins of Boone County obtained a patent on October 1, 1825, for eighty acres. His property was located where the Columbia Road crossed Perche Creek about four miles west of Columbia, Missouri. “General Land Office Records,” U.S. Department of the Interior, Bureau of Land Management, accessed June 7, 2014, [http://www.glorerecords.blm.gov/details/patent/default.aspx?accession=MO0440\\_.076&docClass=STA&sid=hxsduqed.jyc#patentDetailsTabIndex=1](http://www.glorerecords.blm.gov/details/patent/default.aspx?accession=MO0440_.076&docClass=STA&sid=hxsduqed.jyc#patentDetailsTabIndex=1).
- <sup>7</sup> Persia, the creek that Dr. Willard forded, is now Perche Creek. Roche á Pierce is a corruption of a phrase meaning “pierced rock,” which has been restored in the present name of the stream (Roche Percée). Persia was described as being on the main road leading from Franklin to St. Charles, about twenty-eight miles from Franklin close to Roche Perche creek. Rueben Gold Thwaites, *Early Western Trails, 1748–1846, Vol. XIV* (New York: AMS Press, Inc. 1966), 147. Walter Williams, *A History of Northeast Missouri, Vol. I* (Chicago: Lewis Publishing Co. 1913), 234.
- <sup>8</sup> “William Lientz (1775–1849) was born in Germantown, Pennsylvania. He and his wife, Mary Miller Ney Lientz, came to Missouri from Kentucky and by 1819 had homesteaded four miles northeast of present-day Rocheport. Lientz served as the foreman of the Boone Circuit Court grand jury of August 1821 and postmaster from 1828–1832. His home served as the post office before it was moved to Rocheport, in Boone County, Missouri.” *Missouri Intelligencer* dated January 1, 1825. “William Lientz,” Findagrave.Inc. accessed May 6, 2014, <http://www.findagrave.com/cgi-bin/fg.cgi?page=gr&GRid=38391467>
- <sup>9</sup> The original starting point of the Santa Fe Trail was Franklin, Missouri. Platted in 1816 on a low floodplain on the north bank of the Missouri River; it was named in honor of Benjamin Franklin. The town was the center of what was called the Boonslick Country, which stretched over several counties along the Missouri River. In 1821, the year that Missouri became a state, Franklin became the outfitting point for the Santa Fe Trail. In that year William Becknell departed for New Mexico. A flood in

1828 substantially damaged the principal commercial district area of Franklin. Consequently, businesses and many residents began moving to higher ground two miles away in what became New Franklin. Marc Simmons and Hal Jackson, *Following the Santa Fe Trail: A Guide for Modern Travelers* (Santa Fe: Ancient City Press, 2001), 21–22.

<sup>10</sup> On July 8, 1825, Joaquin R. Marble went to the Custom House in Santa Fe and presented a factura [invoice] dated May 14 from merchandise he obtained in Lexington. David J. Weber, *The Extranjeros: Selected Documents from the Mexican Side of the Santa Fe Trail 1825–1828* (Santa Fe: Stagecoach Press, 1967), 17.

<sup>11</sup> Robert McKnight (ca. 1789–1846), who was born in Virginia, was an experienced Santa Fe Trail trader. He joined his brother, John, and Thomas Brady at St. Louis in 1809 in a mercantile adventure. Attracted by Zebulon Pike’s published account, McKnight and nine others, including James Baird and Samuel Chambers, left for Santa Fe in May 1812. Despite their attempt to open trade with New Mexico, once they arrived in Taos, their \$10,000 worth of goods was confiscated, and they were arrested as spies. They were taken first to Santa Fe and then Chihuahua. Their goods were sold. They were assigned to families in Mexico and worked as indentured servants during their confinements in Chihuahua and Durango. A decree freeing the McKnight-Baird party arrived in September of 1820. McKnight’s brother, John, went to Durango in 1821 and returned with his brother Robert in 1822. Robert, upon his return to New Mexico, renounced his nationality, became a Mexican citizen, and married in Chihuahua. In May of 1825, Robert McKnight traveled west with the packers on the 1825 spring caravan from Missouri. McKnight—along with Elisha Stanley, Ira Emmons, and men named Thompson and Shackelford—drew up the company’s code of laws for traveling west. In 1828 he gained possession of the Santa Rita copper mine near present-day Silver City, New Mexico, where he made a fortune until frequent attacks by the Apache forced him to abandon the mining operation. Gregg, *Commerce*, 5–7, 12, 56, and Barry, *Beginning*, 119.

<sup>12</sup> & ca or & c is the equivalent of Etcetera.

<sup>13</sup> George Sibley states in his journal on Tuesday, July 5, 1825; “We crossed the Missouri at the Arrow Rock, and went onto Reece’s and Halted.... It is 12 miles from Franklin to Reece’s.” Lewis Rees entered on his quarter section in Miami bottom on June 10, 1819, and with others petitioned for the first road in Saline County, that leading from Arrow Rock to Grand Pass. Gregg, *Road*, 52, 249–50.

<sup>14</sup> The Arrow Rock Ferry, located at the narrowest point on the Missouri River a bit upstream from the present-day town of Arrow Rock, was owned in 1825 by Judge David Todd of Franklin (Todd’s Landing). In 1820, when the Long Expedition used the ferry, John R. Bell described it as “two canoes, arranged parallel to each other; on these was constructed a platform and a railing which was a flooring for our horses & prevented them

from going overboard.” George Sibley arranged for the team surveying the Road to Santa Fe to rendezvous on Tuesday, July 4, 1825, at the Arrow Rock Ferry site. Rich Lawson, “Arrow Rock Ferry Now on the National Register of Historic Places,” *Wagon Tracks* 27 (2013): 20–21. Maxine Benson, *From Pittsburgh to the Rocky Mountains: Major Stephen Long’s Expedition, 1819–1820* (Golden, Colo.: Fulcrum, Inc. 1998), 74.

<sup>15</sup> George Davis from Ross County, Ohio, settled in the Petite Osage Bottom of Saline County in 1816, a little north of the present-day town of Malta Bend. He is said to have planted the first orchard in Grand Pass Township, if not in the county. Missouri Historical Company, *History of Saline County Missouri* (St. Louis: Missouri Historical Co., 1883), 166–67, 187, 422, 433. Grand Pass, Missouri, is about thirty miles west of Arrow Rock, which coincides with the distance Dr. Willard records in his diary. George and his son Charles helped organize the Grand Pass Township of Saline County. Charles married in 1822 and returned by boat to the ferry near present-day Arrow Rock and then overland to Grand Pass township with his bride, Sallie Kennedy Davis of Chillicothe, Ohio. “Message Boards - Bodkin” Ancestry.com. accessed October 20, 2009, <http://www.boards.ancestry.com.uk/surnames.bodkin/139/mb.ashx>.

<sup>16</sup> This might have been the same William Estes who voted while residing in Miami Township during the first election of Cooper County when it was organized in August of 1819. One hundred thirty-eight men voted to elect a delegate to Congress from the territory of Missouri. National Historical Company, *History of Howard and Cooper Counties, Missouri: written and compiled from the most authentic and official and private source, including a history of its townships, towns and villages: together with a condensed history of Missouri, a reliable and detailed history of Howard and Cooper counties - - it pioneer record, resources, biographical sketches of prominent citizens, general and local statistics of great value, incidents and reminiscence* (St. Louis: National Historical Company, 1883), 736–37.

<sup>17</sup> Lexington was platted in 1822. The first significant business was the store and warehouse built by John Aull in 1822. His brothers, Robert and James, followed him in 1825. By 1830 the Aull brothers’ stores were selling a wide variety of merchandise to Santa Fe Traders. In 1820, they sold between \$8,000 and \$10,000 worth of goods to the caravans at 25 percent over Philadelphia prices with no interest for six months and then 10 percent interest until paid. Roger Slusher, “Lexington and the Santa Fe Trail,” *Wagon Tracks* 5 (1991): 6–9.

<sup>18</sup> On this date Dr. Willard arrived at Fort Osage approximately twenty-one miles from Lexington, Missouri. For a brief period Fort Osage was the westernmost outpost in Missouri. “Fort Osage National Historic Landmark,” Save America History, accessed April 19, 2014, <http://www.fortosagenhs.com/>, and Simmons, *Following the Santa Fe Trail*, 43–44.

<sup>19</sup> The *Missouri Intelligencer* newspaper published the following account on June 4, 1825, under Santa Fe Adventurers. “We received, the last Western Mail, the following letter, written by one of the Gentlemen composing the company which left this place a few weeks since, on a trading expedition to Santa Fe, in New Mexico.

‘Camp near Fort Osage, May 16, 1825

Dear Sir-

*We arrived here last evening after a pleasant journey to every respect. Except the rains.- We have been detained several days by different circumstances, mostly by the loss of some horses which we recovered by the badness of the roads, and by the necessity of, building bridges over the mire on each bank of the Big Suiabar [Sniabar]. This being the place of the rendezvous, the whole company assembled this morning, when the packers concluded, that their strength would justify their going on separately. They have already left us and the wagon company will proceed separately, and under a different organization. The company are in fine spirits, and I have no doubt that their arrangements and conduct will ensure safety. The company here this morning consisted of one hundred and five men, who have thirty four wagons, and above two hundred and forty mules and horses. – Among the packers who are in advance, are Messrs. Morris and Rennison, of Howlud, Mr. Barnes, of Boon, Dr. Willard of St. Charles, and two gentlemen from Natchez. Our code of laws have been prepared by Messrs. Thompson, Stanley Emmons, McNight [McKnight] and Shackelford, a committee for that purpose. – Augustus Storrs was elected Captain, with power, agreeably to the rules, to nominate the subordinate effects and arrange the subdivision of the company.’”*

<sup>20</sup> During the 1820s, there were two routes used when leaving Fort Osage. The first route left Fort Osage and forded the Little Blue River six miles west. The second route went south to Blue Spring camp group, which was an important rendezvous point. Other traders came to Blue Spring Campground directly from Lexington, and from Cooper, Saline and Howard counties. Simmons and Jackson, *Following*, 45–46.

<sup>21</sup> According to Josiah Gregg, the captain was expected “to direct the order of travel during the day, and to designate the camping-ground at night; with many other functions of a general character, in the exercise of which the company find it convenient to acquiesce.” Josiah Gregg, *Commerce of the Prairies* (Norman: University of Oklahoma Press, 1954), 31.

<sup>22</sup> The job of the lieutenant was to inspect every ravine and creek on the route, select the best crossings, and superintend what is called, in prairie parlance, the “forming” of each encampment. *Ibid.*

<sup>23</sup> Robert W. Morris (1800–post-1870), an experienced Santa Fe Trail expedition captain, is recorded as one of the American foreigners in the Custom House Records of Santa Fe for 1825. Weber, *Extranjeros*, 18. One learns how the expeditions were organized as evidenced by

this announcement the previous spring in an article titled “Santa Fe” from the newspaper *Missouri Intelligencer* dated 3/20/1824. It states: “Those persons who intend to join the trading expedition to Santa Fe this spring, are requested to meet at Mr. Shaw’s tavern, [in St. Charles, Missouri] on the first day of April next, at 2 o’clock, P.M. to determine whether it will be expedient to pack or convey their goods in small wagons; and to make such other preliminary arrangements as the company may deem proper. A meeting of this kind may be very useful, by creating unanimity with regard to the mode of conveyance and the course to be pursued, and producing uniformity of equipment, which is desirable so far as convenience will permit. I understand that apprehensions of danger from the Indians cause many to hesitate about going. All the information which a strict enquiry has furnished me with, goes to show that no fears need arise from this source. It has been rumored that there is an extensive combination of several Indian tribes against the whites. The naked truth is, that a small band of Osages, being irritated by the frequent intrusion of the people of Arkansas on their best hunting grounds, made an attack on one of these parties who were killing their buffaloe for the hides and tallow, because they could not check this encroachment in any other way. How far they were wrong, is not for me to determine. This however, I believe to be the fact and no circumstances, no other outrages authorize the inference that any tribe whose parties we shall be liable to meet; have a disposition to be at war with the Americans. It is perfectly unreasonable to suppose that they would willingly provoke a conflict, the consequences of which would involve them. In certain and immediate ruin; neither is there evidence that any of them intend it. It will, in my estimation, only be necessary to guard against their stealing, which judicious regulations will almost to a certainty prevent. ROBERT W. MORRIS.”

Robert W. Morris was also a licensed tavern keeper and retailer of spirituous liquors in Howard County in 1821. Louis Houck, *A History of Missouri, From the Earliest Exploration and Settlements until the Admission of the State into the Union, Volume III* (Chicago: R.R. Donnelly and Sons Co., 1908), 60–61.

<sup>24</sup> Jefferson Fulcher (1787–1859) was born in Amherst County, Virginia. He was a soldier during the War of 1812. He fought in the Battle of Thames in 1813, where the U.S. had a decisive victory over British troops and where Shawnee chief Tecumseh was killed. Fulcher moved to Missouri from Madison County, Kentucky, where he married Rachel Stephson on June 16, 1816. By 1821, he was commissioner of Boone County, Missouri. He made several trips to Santa Fe. By 1838 he had moved to Schuyler County, Missouri, where he died in 1859. *History of Adair, Sullivan, Putnam & Schuyler Counties, Missouri, Vol. 2* (Chicago: The Goodspeed Publishing Co., 1888), 1158.

<sup>25</sup> Word of mouth and articles were published in the *Missouri Intelligencer* about the trading expeditions to Santa Fe, New Mexico. In 1824 the organizing

meetings were held at Shaw's Tavern. It is likely the organizational meetings were also held at Shaw's Tavern in 1825 the year Willard decided to travel west.

<sup>26</sup> John Adams, of St. Charles, Missouri, placed an advertisement in the newspaper: "GUNSMITHING—The subscriber has commenced the Gunsmithing business in a shop opposite Collier's store in St. Charles where he would keep on hand a general assortment of GUNS, and make Rifles or Fowling Pieces to suit purchasers at short notice. All kinds of repairs in the time of his business executed with dispatch. Cash paid for old brass. John Adams." *The Missourian*, June 24, 1820.

<sup>27</sup> Albert Gallatin Boone (1806–1884), grandson of Daniel Boone, would have been about 19 years old when he traveled with Dr. Willard in 1825. A.G. Boone was born in Greensburg, Kentucky, and moved with the Boone clan to St. Charles County, Missouri. At age 17, he joined the second Ashley-Henry trapping party out of St. Louis traveling to the Upper Missouri. He worked for a while at the Fort Osage trading post in western Missouri, mastering the Osage language and learning several other native tongues. He later served as deputy county clerk of St. Charles County before moving to Callaway County, where he worked in his brother-in-law's tobacco business. In 1838 he established his own trading business in Westport. "Kansasboguslegislature.org," Charles Clark, accessed August 10, 2011, [http://kansasboguslegislature.org/mo/boone\\_a\\_g.html](http://kansasboguslegislature.org/mo/boone_a_g.html).

<sup>28</sup> The Chariton River is 218 miles long and has been called Missouri's Grand Divide as the streams east of it flow to the Mississippi River and the streams west flow into the Missouri River. Several origins of the name of the Chariton River have been suggested. The most plausible suggestion connects the name of the river with Joseph Chorette, a French fur trader of St. Louis. Trudeau, in his Journal of 1795, mentions Chorette as accompanying him on his expedition up the Missouri River and as being drowned on July 10 of that year while swimming in the river. The family name has the variants Choret, Care, and Carrette in old documents. "Missouri Secretary of State," accessed August 20, 2011, <http://www.sos.mo.gov/archives/history/counties.asp>.

<sup>29</sup> Eliza Ann Alexander Means, (1800–?) <http://trees.ancestrylibrary.com/tree/43840162/person/12745417333/print>.

<sup>30</sup> From the early 1820s until the Civil War, Lexington, located in western Missouri, was involved in almost every aspect of the Santa Fe trade. Lexington's first settler was probably Gillad Rupe, who came to the area around 1815 from Boonville, where he had operated a ferry. He may have started a ferry at the mouth of "Rupe's branch" on the Missouri, but by 1819 Captain William Jack was known to be operating the ferry. "Jack's Ferry Road" was the connection between the river and the early settlement centered about two miles to the east. Lexington was platted in 1822 in the area later known as "Old Town" and became the county

seat in 1823, with a log courthouse in a public square. Direct expeditions from the Lexington area started as early as 1822 when Strother Renick, whose family had settled seven miles west at Wellington, was hired by a Gen. McRea to "take a small stock of goods on pack mules over the trackless prairie to Mexico." Renick was only nineteen and afterward made several similar trips by himself. He is said to have specialized in trading for mules. For trail historians, the first really significant business in Lexington was the store and warehouse built by John Aull, who came from Delaware in 1822. He was followed by his brothers Robert and James Aull in 1825. "Lexington, Missouri and the Santa Fe Trail," Santa Fe Trail Research, accessed August 23, 2011, <http://www.santafetrailresearch.com/research/lexington-mo.html>.

<sup>31</sup> Willard rendezvous with the company at Fort Osage, Missouri.

<sup>32</sup> During the earliest period of the Santa Fe Trail from 1821–1827, one of the routes "left Fort Osage and went south following the road that connected Fort Osage to Harmony Mission. On this route, the Blue Springs Campground, which was an important rendezvous point. Other traders came to Blue Springs directly from Lexington, and from Cooper, Saline and Howard Counties" in Missouri. *Ibid*, 45-46.

<sup>33</sup> Solomon Stone was a partner with Alexander Branch in several fur-trapping expeditions. Stone applied for Mexican citizenship in November of 1826 through Governor Antonio Narvona. Weber, *Taos Trapper*, 122, 176.

<sup>34</sup> Hugh Glass (1760?–1833) was a mountain man. Little is known of Glass until he joined William H. Ashley's fur-trading expedition of 1823 as a trapper. Glass was wounded in the leg during the famous encounter between Ashley's party and the Arikara Indians in 1823, but he recovered sufficiently to join Major Andrew Henry's party, which set out overland for the Yellowstone River after the fight. While on their way Glass was severely mauled by a grizzly bear at Grand River, South Dakota. Howard Lamar, *The New Encyclopedia of the American West* (New Haven: Yale University Press, 1998), 431 and 432, accessed September 15, 2011, [http://en.wikipedia.org/wiki/Hugh\\_Glass](http://en.wikipedia.org/wiki/Hugh_Glass).

<sup>35</sup> On the entries for July 10 and 12, 1825, in the 1825–1827 pocket diary of Dr. Willard, he refers to Stephen Marsh. The Rowland Willard pocket diary of Dr. Willard's western journey to New Mexico and Mexico (1825–1827) is part of the Yale Collection of Western Americana at the Beinecke Rare Book and Manuscript Library - Rowland Willard - Elizabeth S. Willard Papers, WA MSS S-2512. Marsh was assigned to accompany Hugh Glass on an expedition to Fort Atkinson as ordered by Major Henry. Frederick Manfred, *Lord Grizzly* (Lincoln: University of Nebraska Press, 1983), 222-23.

<sup>36</sup> Dr. Willard's 1825–1827 pocket diary, he refers to a John Andrews in his September 16, 1825, entry.

<sup>37</sup> The *Franklin Intelligencer* published the following on

June 4, 1825: “Among the packers who are in advance are Messrs. Morris and Rennison, of Howlud, Mr. Barnes of Boon, Dr. Willard, of St. Charles and two gentlemen from Natchez.” *Santa Fe Adventurers*, June 4, 1825. A list of trail traders who paid fifteen percent importation duty and three percent excise tax at the Santa Fe Custom House indicated on July 8, 1825, that a John Remison [Rennison] from Franklin [Howard

County, Missouri] presented an original trade invoice dated April 30, 1825. Weber, *Extranjeros*, 17.

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Willard used this scarificator in his medical profession for blood-letting. The practice of drawing blood to treat illnesses dated to the ancient world. The idea was that “humors,” or fluids in the body, had to be in balance for good health; bleeding was designed to recalibrate those humors. The practice continued into the nineteenth century in the United States despite its having been disproved scientifically. (Image: Nancy Mathers)



## A B O U T T H E A U T H O R S

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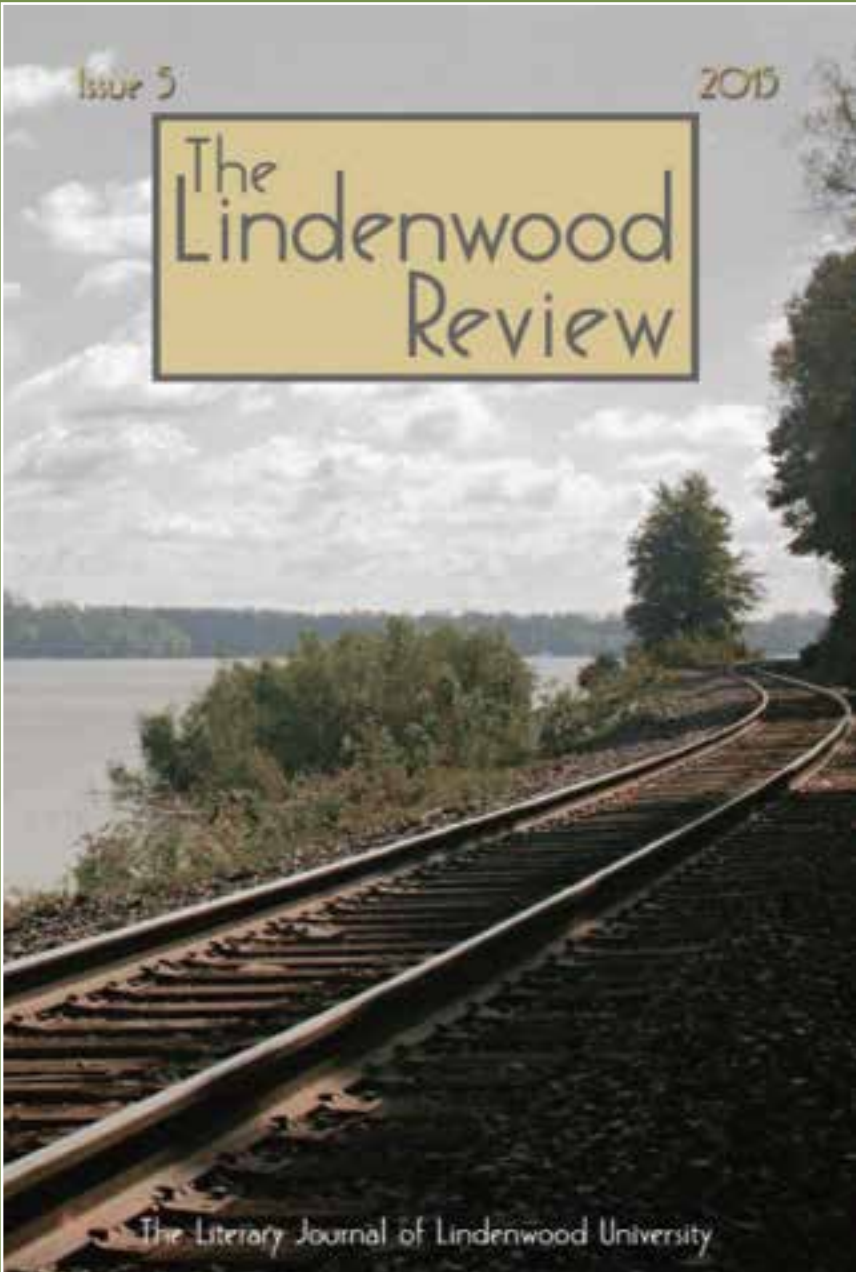
**Jeffrey Smith, PhD**, is Professor of History at Lindenwood University and editor of *The Confluence*. He is author most recently of *William Clark: Explorer and Diplomat*, a biography for young readers as part the Truman State University Press' Notable Missourians series. He is completing a history of the rural cemetery movement in the nineteenth century for Lexington Books (a Rowman Littlefield imprint), scheduled for release in 2017.



**Joy Poole** is currently the New Mexico Deputy State Librarian. An authority on western trails, she has discovered, researched and edited numerous travel diaries on the Santa Fe Trail and El Camino Real de Tierra Adentro. As a museum director, she founded the Santa Fe Trail Association in 1986. This and other activities resulted in the designation of the Santa Fe Trail as a National Historic Trail. Join the Santa Fe Trail Association at <http://www.santafetrail.org/>.



**Quinta Scott** is the author of *The Mississippi: A Visual Biography*. She is also the author of *Along Route 66: The Architecture of America's Highway*, a great read-aloud guidebook of the old road. She is the photographer/author of *Route 66: The Highway and Its People* with Susan Croce Kelly and of *The Eads Bridge: Photographic Essay by Quinta Scott; Historical Appraisal by Howard S. Miller*. She and her husband, Barrie, live in Waterloo, Illinois, close to the American Bottom and the great Mississippi River Bluffs.



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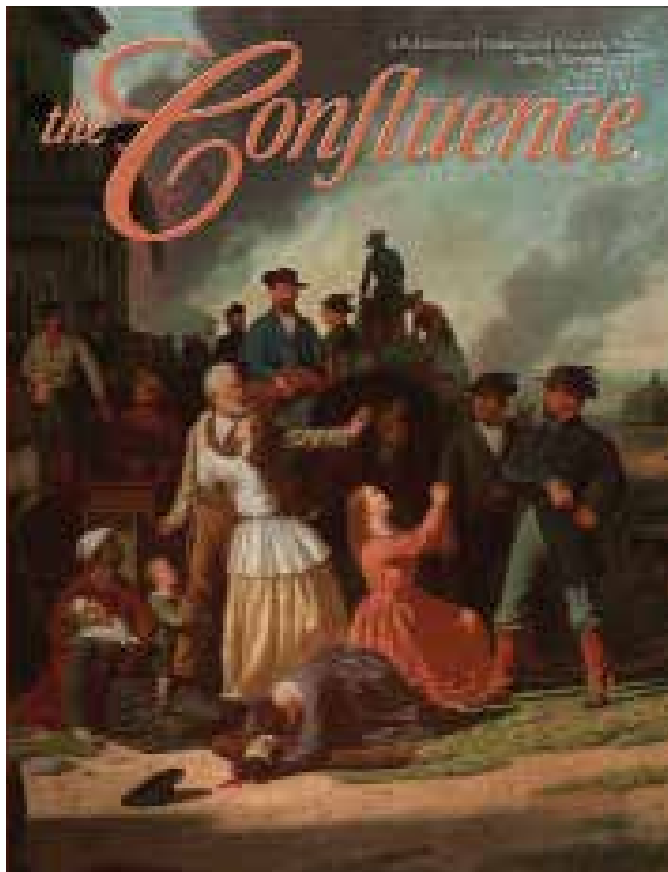
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