

The Lewis and Clark Expedition

Blacksmiths in the Corps of Discovery

By Dave Allen, Editor

The bicentennial celebration of the Lewis and Clark Expedition officially began in January with the anniversary of President Thomas Jefferson's letter to Congress requesting funds for the mission to explore the Northwest Passage.

1803

Jefferson chose his friend and aide, Captain Meriwether Lewis, to head the expedition. Lewis was an army officer and also enough of a scientist to properly catalog the expedition's findings. Lewis then chose his compatriot, Captain William Clark, a renowned frontiersman, as co-commander. The year 1803 would be the timeframe to outfit the expedition and to recruit men of a variety of skills.

Lewis ordered rifles from the armory at Harper's Ferry, VA (now WV). The armory was one of two that President George Washington had ordered built in 1792 to make rifles for the US Army.

On March 16, Lewis presented armory superintendent Joseph Perkins with a letter from Secretary of War Henry Dearborn:

"Sir: You will be pleased to make such arms & Iron work, as requested by the Bearer Captain Meriwether Lewis and to have them completed with the least possible delay."

The armory had no trouble in furnishing guns and other items. However, Lewis had designed a collapsible, iron frame boat. Building the frame proved to be quite a challenge.

On April 20, Lewis wrote President Jefferson: "My detention at Harper's Ferry was unavoidable for one month, a period much greater than could reasonably have been calculated on; my greatest difficulty was the frame of the canoe, which could not be completed without my personal attention to such portions of it as would enable the workmen to understand the design perfectly. My Rifles, Tomahawks & knives are already in a state of forwardness that leaves me little doubt of their being in readiness in due time."

Lewis returned to Harper's Ferry in July and left on the 8th, by wagon, with his rifles, iron boat, and supplies to meet the keel boat in Pittsburgh.

The great keel boat which would take the Corps up

the Missouri River was built in Pittsburgh, then sailed down the Ohio River, and thence upriver to St. Louis. The large boat, which carried over two tons of supplies and a crew of 51, had to be dragged across sandbars in shallow parts of the Ohio. The keel boat had multiple oars as well as a small sail.

Of the 51 men listed on the expedition, three were noted as blacksmiths: John Shields, William Bratton and Alexander Willard.

MODIFIED 1792 MILITIA RIFLE LOCK DETAIL



Detail of the reproduction 1792 militia rifle. Note the U.S. Army insignia and "Harpers Ferry 1803" inscribed on the lock. National Park Service photo by David T. Gilbert, October 2002

John Shields is given most credit in the journals as being the expedition's blacksmith and is praised from time to time for his contribution to the success of the mission. There are over 70 journal entries regarding his prowess as a hunter.

John Shields was born in Augusta County, VA, near Harrisonburg, in 1769. He was the oldest enlisted man in the Corps' roster of soldiers. Lewis and Clark had agreed to recruit only unmarried men but Shields was married and also had a daughter. At the time of his enlistment as a Private, he hailed from Kentucky. From this record, his age and marital status, we can assume that Lewis and Clark waived certain requirements in Shields' case because of his talents. Wise that they were in doing so.

William Bratton, born in Augusta County, VA in

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1778, was recruited by Clark from Indiana but he is listed as one of the "nine men from Kentucky" because his parents had moved there. Clark considered him one of "the best young woodsmen & Hunters in this part of the Country." He had apprenticed as a blacksmith and became a gunsmith.

Alexander Willard was born in New Hampshire in 1778 but was living in Kentucky in 1803. He apprenticed blacksmithing before the journey and was an assistant to Shields and Bratton during the expedition.

1804

The expedition left St. Louis in May with every intent of discovering the fabled Northwest Passage to the Pacific Ocean and returning by winter. It had long been rumored that a natural water grade traversed the continent, essentially joining St. Louis with the Pacific. But at the time, the farthest west that white explorers had traveled was the Dakota Territory. Trading ships had sailed into the mouth of the Columbia River, but the interior remained a mystery to everyone.

No human, not even an Indian, had ever traversed the whole of the American West. Thus, the Great Plains, the Rockies, and the Pacific Northwest were completely unknown to any one man or any one group



Armory superintendent Joseph Perkins (left) and Captain Meriwether Lewis inspect the assembled iron boat frame at Harpers Ferry. Oil painting by Artist Keith Rocco/ Tradition Studios, 2002. National Park Service photo.

of men.

On July 12th, Private Willard fell asleep while on guard duty. Such dereliction of duty imperiled the mission and the Captains were harsh in their punishment of him. Willard received 100 lashes of the whip each day for four consecutive days. A military courts martial at that time allowed for a soldier to be put to death for falling asleep at his post. Thus, the Captains were somewhat benevolent in choosing the whip!

Traveling upriver was slow going as the Missouri River ran swift and had innumerable sand bars. For days at a time, the crew pulled the keel boat with ropes.

On August 20th, Sergeant Charles Floyd died from a burst appendix. He was buried on a hilltop near what is now Sioux City, IA. He is the only crew member to die on the expedition.

In replacing Sergeant Floyd, Private William Bratton was considered for promotion. On August 22nd, Captain Clark "ordered a Vote for a Serjeant to chuse one of three which may be the highest number." Bratton was one of the three but Private Patrick Gass was selected to fill Floyd's position (19 votes) while Privates Bratton and Gibson split the rest.

When winter set in, the Corps found itself no further upriver than the Mandan Indian settlement in present-day North Dakota. Lewis and Clark built Fort Mandan across the river from the Mandan village of sod huts and the two groups maintained friendly contact throughout the long winter.

The winter at Fort Mandan proved to be harsh, and at times, food was very scarce. From Captain Clark's journal:

"The blacksmiths take a considerable quantity of corn today in payment for their labor. They have

Items supplied by Harper's Ferry Armory:

- 15 Model 1803 muzzle-loaders; .54 cal. rifles, 33" barrel
- 24 Pipe tomahawks
- 36 Pipe tomahawks for "Indian Presents"
- 24 Large knives
- 15 Powderhorns and pouches
- 15 Pairs of bullet molds
- 15 Wipers (gun worms)
- 15 Ball screws
- 15 Gun slings
- Extra locks and tools
- 40 Fish giggs
- Collapsible iron boat frame

Other arms and munitions:

- 500 rifle flints
- 420 pounds of sheet lead for bullets
- 176 pounds of gunpowder packed in 52 lead canisters
- 1 long-barreled rifle that fired its bullet with compressed air

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proved a happy reso[r]ce to us in our present situation as I believe it would have been difficult to have devised any other methods to have procured corn from the natives. I permitted the blacksmith to dispose of part of a sheet iron callaboos (cook stove) which been nearly birnt out on our passage up the river, and for each piece about four inches square he obtained from seven to eight gallons of corn from the natives who appeared extreemly pleased with the exchange."

1805

Lewis decided that part of the Corps should return to St. Louis and take with them the maps, journals, and plant and animal specimens, which included live Prairie Dogs. They left on board the keel boat as soon as the river ice thawed in April. The mission's information was then sent to President Jefferson but did not arrive in Washington until September. The 33 men who pioneered upriver, which included Shields, Bratton, and Willard, became the official expeditionary force.

The Mandans had told Lewis and Clark about large bears to the west. The Captains replied that they had seen large bears in the East and were not worried. In the plains of eastern Montana, they encountered the Grizzly. It took several rifle shots to down one of these beasts.

On May 11th, Bratton left his canoe to walk along the shore. He came very close to a Grizzly and shot the bear. The bear chased him for almost a mile before Bratton hailed his comrades to come ashore and finish the beast.

When the Corps left Fort Mandan for the westward passage, they took with them a woman named Sacagawea. She had been kidnapped as a girl by plains Indians and sold to another tribe. A French fur trader later won her in a gambling contest and she had borne his son in the winter of 1804-5. Captain Clark would later adopt her son, who he had nicknamed "Pompy", and raise him.

Sacagawea, a Shoshone, was originally from western Montana, near present-day Helena and the Captains believed that she would be of help finding the headwaters of the Missouri. Her story is an amazing one and her contribution to the success of the mission was irreplaceable.

When the Corps entered Montana, they found a barren, uninhabited plain. There were no buffalo herds. Finding food, especially meat, was difficult and



(L to R) Joseph Field, Meriwether Lewis, Patrick Gass, and John Shields stretching leather skins over the iron framework of "The Experiment" at the Great Falls of the Missouri River.

Patrick Gass wrote on July 8, 1805, "We finished [stretching buffalo hides on] the boat this evening, having covered her with tallow and coal-dust. We called her the Experiment, and expect she will answer our purpose."

Oil painting by Artist Keith Rocco/Tradition Studios, 2002.

National Park Service photo

they relied on Sacagawea's knowledge of plants and roots for survival.

Captain Lewis writes on May 20, 1805, that John Shields had discovered a "[B]ould spring or fountain issueing from the foot of the Lard hill about five miles below the entrance of the Yellowstone River." Lewis wrote that this discovery was important because most springs in the area "without exception are impregnated with the salts which abound in this country."

Captain Lewis writes on June 10, 1805: "Shields renewed the main-spring of my air-gun. we have been much indebted to the ingenuity of this man on many occasions; without having served any regular apprenticeship to any trade, he makes his own tools principally and works extreemly well in either wood or metal, and in this way has been extreemly servicable to us."

In late June, 1805, while making the portage around Great Falls, Private Willard was chased by a Grizzly. He was unharmed but Captain Clark advised him **to not run towards the camp** should it ever happen again!

On July 4th, the members of the expedition celebrated the holiday near Great Falls, MT by drinking the

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last of their whiskey rations.

Captain Lewis' iron-framed boat was launched on July 9. At first, he wrote: "we ... launched the boat; she lay like a perfect cork on the water." But without pine pitch, or suitable tar, the buffalo hides soon failed to turn water.

From Lewis' journal: "... she leaked in such manner that she would not answer. I need not add that this circumstance mortified me not a little; ... therefore the evil was iraparable ... from these circumstances I am preswaided, that had I formed her with buffaloe skins singed not quite as close as I had done those I employed, that she would have answered even with this composition. but to make any further experiments in our present situation seemed to me madness; the buffaloe had principally d[e]serted us, and the season was now advancing fast. I therefore relinquished all further hope of my favorite boat and ordered her to be sunk in the water, that the skins might become soft in order the better to take her in peices tomorrow and deposited the iron fraim at this place as it could probably be of no further service to us. ... but it was now too late to introduce a remidy and I bid adieu to my boat, and her expected services."

By year's end, the Corps made it to the Pacific by traveling down the Columbia River. To their dismay, the fabled Northwest Passage, the water route to the ocean did not exist.

At year's end, Lewis and Clark had developed a map that would prove to be accurate within 60 miles. An amazing feat in and of itself. Every mapped stream and river had been named as well. The Captains named a stream near the Great Falls of the Missouri for John Shields (now Highwood Creek.)

1806

The Corps had wintered near the mouth of the Columbia River at Fort Clatsop, which they had built. Before leaving in late March, Captain Lewis writes:

"March 20, 1806: The guns of Drewyer and Sergt. Pryor were both out of order. the first was repaired with a new lock, the old one having become unfit for uce; the second had the cock screw broken which was replaced by a duplicate which had been prepared for the lock at Harpers ferry where she was manufactured. but for the precaution taken in bringing on those extra locks, and parts of locks, in addition to the

ingenuity of John Shields, most of our guns would at this moment have been untirely unfit for use; but fortunately for us I have it in my power here to record that they are all in good order."

Through the winter, Bratton, Willard, and two others had been making salt by boiling seawater. Part of the salt was used to preserve deer meat but most of the it was packed for the return trip home.

Willard had injured his leg, probably with an axe while chopping firewood. His leg healed by the time they broke camp. Bratton, however, became very ill in February and had to be transported by canoe or horseback as he was too weak to walk.

By late April, the Corps had returned to the lands of the Nez Perce Indians in present-day Idaho and waited for the snows at Lolo Pass to melt before proceeding.

Bratton became worse by the day and was almost paralyzed with lower back pain. Shields recommended that Bratton be "restored by violent sweats." Bratton probably agreed, thinking "Shields Therapy" would be no worse than what ailed him.

Captain Lewis writes: "Shields sunk a circular hole of 3 feet diamiter and four feet deep in the earth. He kindled a fire in the hole and heated well, after which the fire was taken out [and] a seat placed in the center of the hole for the patient with a board at the bottom of his feet to rest on; some hoops of willow poles were bent in an arch crossing each other over the hole, on these several Blankets were thrown forming a secure and thick orning [awning] of about 3 feet high. The patient [Bratton] being stripped naked was seated under the orning in the hole and blankets well secured on every side. the patient was furnished with a vessell of water which he sprinkles on the bottom and sides of the hole and by that means creates as much steam or vapor as he could possibly bear."

Bratton also drank "copius draughts" of strong horse mint tea. After a short time in the sweat house, they took Bratton and put him in the icy cold Clearwater River. The treatment was then repeated. Then he was wrapped in blankets.

One could say that Shields Therapy was similar to quenching hot metal in a cold slack tub!

Captain Lewis wrote of the cure: "This experiment was made yesterday; Bratton feels himself much better and is walking about today and says he is nearly free from pain."

On the return journey, Lewis and Clark split their force in order to explore the Missouri River headwa-



"Artificer" –
 A military mechanic; blacksmiths were often called artificers in army jargon

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The Expedition's Air Rifle

Captain Clark wrote: "... we Showed them (Indians) many Curiosities and the air gun which they were much astonished at." August 19, 1804

Gunsmith Isaiah Lukens of Philadelphia built the air rifle for the expedition. It uses compressed air to shoot a .31 cal. bullet and makes little noise, no smoke, and had very slight "kick".

The rifle butt contains a metal canister with a "needele valve" to hold compressed air (700-900 psi). When the trigger is pulled, air is released to the chamber and the round leaves the barrel with a whish.



The Lukens air rifle is on display at the Virginia Military Institute Museum, Lexington, VA. VMI photo

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ters. Lewis and his men almost met their end on Maria's River with the Blackfeet in the only violent Indian encounter of the expedition.

Shields traveled with Clark's team as they explored the Yellowstone River. Clark named one of the tributary's of the Yellowstone, "Shields River", which is 1near Livingston, MT.

On July 7, Captain Clark leaves behind a boiling spring in the Yellowstone Valley and writes, "I now take my leave of this butifull extensive vally which I call the hot spring Vally, and behold one less extensive and much more rugid on Willards Creek." The spring's boiling water was hot enough for John Shields' buffalo meat to be "cooked dun in 25 minits."

Sixty years later, Willards Creek was the area of a great gold discovery.

"Bratten's River", also a tributary of the Yellowstone, was named on July 17, 1806.

Only Sgt. John Colter's squad actually saw Yellowstone's geysers but nobody believed them! The squad was chided about "Colter's Hell" all the way home.

Clark and Lewis rejoined their forces at the confluence of the Yellowstone and Missouri and made good speed towards home.

It was quite a triumph when the Corps of Discovery

returned to St. Louis in September 1806. Even Thomas Jefferson had feared their demise when Lewis and Clark had not returned in the year prior.

1807

Upon dissolving the Corps, the men were all paid. On March 3rd, 1807 Congress approved the soldier's pay as follows:

- Sergeants— \$8 monthly
- Privates— \$5 monthly
- Interpreters— \$25 monthly
- In addition, the men were given government land grants of 320 acres each.

As for John Shields' pay, Captain Lewis wrote the Secretary of War on January 15th: "John Sheilds (sic) has received the pay only of a private. Nothing was more peculiarly useful to us, in various situations, than the skill and ingenuity of this man as an artist, in repairing our guns, accoutrements, &c. and should it be thought proper to allow him something as a artificer, he has well deserved it." (Shields extra pay was not approved.)

In addition to pay, every member of the Corps of Discovery had a river or topographical feature named for him on Captain Clark's map.

Notes:

Lewis and Clark were meticulous in their planning. The expedition returned with enough gunpowder and bullets to mount another, albeit smaller, expedition, which is remarkable given they constantly had to hunt for food. The gunpowder was packed in lead so that the canisters could be melted down for bullets.

Private John Shields received a land grant in Franklin County, Missouri. He befriended Daniel Boone there and hunted and trapped with him for two years afterwards. The date of Shields' death is given alternatively as 1809 with his burial in Little Flock Burying Grounds near Corydon, IN, or 1815 with his burial either in Sevier County, TN or Indiana.

Although he is routinely praised in the journals, Shields did refuse to take orders from the sergeants when encamped in Missouri (March 1804), stating that he only took orders from the Captains. Later that month, he fought with a sergeant. Captain Lewis realized this was due to camp fatigue and boredom and relented from punishing him.

John Shields is said to have been a blacksmith in Pigeon Forge, TN prior to joining the expedition and family members remained there. The ironworks that gave Pigeon Forge its modern name were started

Stephen E. Ambrose writes:

Private John Shields was a skilled blacksmith. He had set up for business at the expedition's forge and bellows inside the fort [Fort Mandan]. There he mended iron hoes, sharpened axes, and repaired firearms for the Indians in exchange for corn. But by the end of January, business was turning sour. The market for mending hoes had been satisfied. Shields needed some new product to attract business.

The arms trade was the obvious answer. Not in firearms—the captains turned away all requests for rifles or pistols—but in battle axes. There was a particular form of battle axe highly prized by the Indians and easily made by Shields. Lewis disapproved of the design, writing that it was “formed in a very inconvenient manner in my opinion.” The blade was too thin and too long, the handle too short, the overall weight too little, all of which combined to make a weapon that made “an uncertain and easily avoided stroke.”

But arms merchants give the customer what he wants. Shields went to work, getting his sheet iron

from an all-but-burned-out stove. Some of the men were detailed to cutting timber to provide wood to make a charcoal kiln, to expand production capacity. Still, the Americans couldn't turn out battle axes fast enough.

The Indians were skilled traders who drove hard bargains. On February 6 [1805], Lewis had Shields cut up what was left of the stove in pieces of four inches square, which could then be worked into arrow points or buffalo hide scrapers. After some haggling, a price was set: seven to eight gallons of corn for each piece of metal. Each side thought it had made a great bargain.

... How popular those axes were among the Indians, and consequently how far they traveled across the trade routes, Shields found out some fourteen months later, when he discovered axes he had made at Fort Mandan among the Nez Perce on the other side of the Rocky Mountains.

Undaunted Courage, pp. 198-199

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about 1820 by Isaac Love.

Private Alexander Willard married in 1807, had 12 children, and moved to California in 1852. At age 74, he crossed the West again, this time by wagon train. He died in Sacramento in 1865. Of the expedition members, only Patrick Gass outlived him. Willard would say later in life that his physical strength caused Lewis and Clark to select him over 100 other men who had volunteered.

Private William Bratton lived for a time in Missouri and then served in the War of 1812. He married in 1819, having ten sons and two daughters. He was elected first Justice of the Peace in Waynetown, Indiana, where he died on November 11, 1841.

This article appears at the ABA website.



Learn More About the Corps of Discovery

Lewis & Clark; The Journey of the Corps of Discovery (1997), by Ken Burns. 4 hrs., VHS/DVD.

PBS Companion website for the Ken Burns documentary—an excellent resource:
www.pbs.org/lewisandclark/

National Park Service:
Harpers Ferry Armory www.nps.gov/hafe/lewis/
Lewis and Clark Trail www.nps.gov/lecl

Books about the expedition:
[Undaunted Courage: Meriwether Lewis, Thomas Jefferson, and the Opening of the American West](#), by Stephen E. Ambrose (highly recommended)

[The Lewis and Clark Journals: An American Epic of Discovery](#), by Meriwether Lewis and William Clark; Gary E. Moulton, Editor

VMI Museum www4.vmi.edu/museum

Lewis and Clark Trail Heritage Foundation
www.lewisandclark.org