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#### Article Title: Scurvy at Cantonment Missouri, 1819-1820

Full Citation: Roger L Nichols, "Scurvy at Cantonment Missouri, 1819-1820," *Nebraska History* 49 (1968): 333-347

URL of article: <http://www.nebraskahistory.org/publish/publicat/history/full-text/NH1968Scurvy.pdf>

Date: 12/04/2015

Article Summary: Soldiers at Cantonment Missouri contracted scurvy because of an inadequate diet and unhealthy conditions in barracks. Eventually the epidemic killed or weakened nearly one tenth of the entire U.S. Army.

#### Cataloging Information:

Names: John C Calhoun, John Bliss, Henry Atkinson, Thomas Mower, John Gale

Place Names: Cantonment Missouri (near present-day Fort Calhoun), Nebraska; Fort Osage, Missouri

Keywords: John C Calhoun, Thomas Mower, John Gale, scurvy, Indians, Rifle Regiment, Sixth Infantry Regiment

Photographs / Images: 1820 map of the Missouri River bottom with the plan of Cantonment Missouri, drawing (circa 1890) showing the approximate style of uniform worn by soldiers at Cantonment Missouri, gravestone fragment possibly from the grave of an officer dead as a result of the rigorous winter of 1819-1820

# SCURVY AT CANTONMENT MISSOURI, 1819-1820

By ROGER L. NICHOLS

**F**OR most twentieth-century Americans the word scurvy means little; we know few, if any, victims of this disease. To nineteenth-century Americans, however, the word brought visions of misery, suffering, and even death. Particularly for frontiersmen, poor diet and inadequate medical facilities combined to make scurvy a constant threat. When American soldiers preceded pioneers into the wilderness, they encountered the same health problems. In fact, because they had less individual freedom of movement than did their civilian counterparts, soldiers sometimes endured more hardship and sickness than other Americans. Diseases such as dysentery, pneumonia, malaria, rheumatism, and scurvy could reduce individual garrisons or even entire regiments to impotence. In present Nebraska, an outbreak of scurvy among the troops at Cantonment Missouri during the winter of 1819-1820 caused the first recorded epidemic within the state.

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The scurvy resulted from the unusual troop movements in 1818 and 1819, which carried American soldiers far beyond the fringes of existing settlement in an attempt to decrease the tensions and friction between frontiersmen and Indians in the Missouri River Valley. During the years immediately after the War of 1812, Indians in this area committed numerous depredations. Western Americans claimed that British officials and traders instigated these attacks and demanded that the government protect them. In response, Secretary of War John C. Calhoun proposed to wrest control of this territory from the British. Originally, Calhoun envisioned a single army post at the mouth of the Yellowstone River, but soon he expanded the plan to include a cordon of posts stretching from Green Bay on Lake Michigan to the Yellowstone in eastern Montana.<sup>1</sup>

To achieve his ambitious goals, Calhoun ordered the Rifle Regiment to leave their positions in the upper Mississippi Valley and go to St. Louis. From there he sent them up the Missouri to build temporary, intermediate posts along that river. During the summer of 1818, one battalion of Riflemen struggled up the Missouri in keelboats as far as Cow Island near present Leavenworth, Kansas. The next year the rest of that regiment and the Sixth Infantry from Plattsburgh, New York, joined the Riflemen. Together they continued up the Missouri to their destination, the Council Bluffs area.<sup>2</sup> There, by October, 1819, nearly eight hundred officers and men had arrived near the site of present Fort Calhoun,

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1. For more discussion of American plans for the trans-Mississippi West after the War of 1812, see Ray H. Mattison, "The Military Frontier on the Upper Missouri," *Nebraska History*, XXXVII, No. 3 (September, 1956), 159-61; Edgar B. Wesley, "A Still Larger View of the So-Called Yellowstone Expedition," *North Dakota Historical Quarterly*, V, No. 4 (July, 1931), 219-26; and Roger L. Nichols, *General Henry Atkinson* (Norman: University of Oklahoma Press, 1965), 47-56.

2. Not to be confused with Council Bluffs, Iowa. Lewis and Clark camped on the south (west) side of the river, in present-day Nebraska. They designated the site of their conference with the Oto and Missouri Indians as "Council [sic] Bluff." Later the name "Council Bluffs" was applied to the range of bluffs extending from present northern Douglas County to the original Council Bluff near Fort Calhoun in present Washington County.

Nebraska, hundreds of miles beyond the nearest frontier settlements.<sup>3</sup>

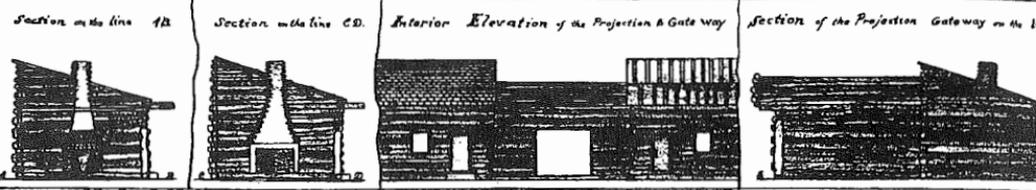
The men of the Sixth Infantry Regiment had traveled over twenty-six hundred miles from their former position at Plattsburgh, New York, to their destination. Their companions, the Riflemen, had traveled a much shorter distance, but during the winter of 1818-1819, one battalion of that unit had lived at a temporary camp, Cantonment Martin, beyond the frontier settlements on the Missouri River. For months before moving up the river to Cantonment Missouri, these men had endured much hardship and had hunted for some of their own food.<sup>4</sup>

Their dietary shortages, however, were no worse than those facing the rest of the expedition; in 1818 army rations provided little variety, poor quality food, and often an unbalanced diet. Enlisted men got a daily meat ration of one and a quarter pounds of beef or three quarters of a pound of pork. The regulations called for fresh meat to be served at least twice each week, but frequently circumstances made this impossible. Therefore, most of the meat the soldiers ate was salted, smoked, or dried. To provide some variety in this portion of the diet and to keep their men healthy, commanding officers received authorization to substitute beans or peas for one half of the daily meat portion twice a week. In addition, each man received a daily portion of nineteen ounces of bread or flour and one gill or one half cup of whiskey. Every one hundred days the individual soldier also got two quarts of salt and four gallons of vinegar, which

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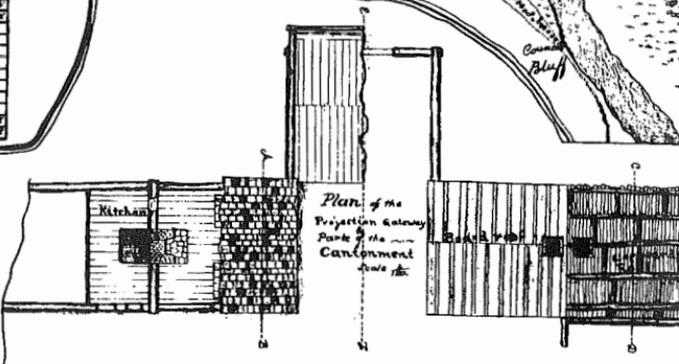
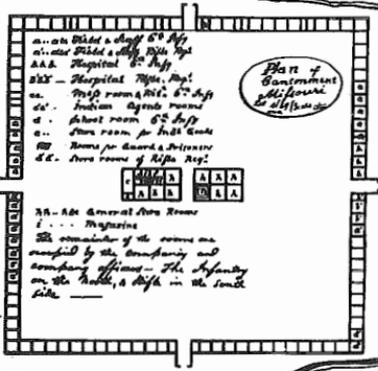
3. The progress of the expedition may be traced from Thomas W. Kavanaugh, "Journal of the Advance Corps of the Military Branch of the Yellowstone Expedition," Yale University Library (hereafter cited as Kavanaugh Journal), and from the letters of Colonel Henry Atkinson to John C. Calhoun and General Andrew Jackson during 1819. These are in Letters Received, Office of the Secretary of War, Record Group 107, National Archives; Andrew Jackson Papers, Library of Congress (hereafter cited as Jackson Papers); and U. S. Army Quartermaster Papers, Library of Congress (hereafter cited as Quartermaster Papers). See also Nichols, *General Henry Atkinson*, 49-50, 54-65.

4. *Niles Register* (Baltimore), XVII (January 15, 1820), 329; Kavanaugh Journal, November, 1818 to August, 1819; John Gale, "Report to Surgeon General," October 1, 1820, in Thomas Lawson, *Statistical Report on the Sickness and Mortality in the Army of the United States* (Washington, 1840), 12.



Map of the Missouri River Bottom  
Scale

ENGINEER  
U. STATES  
TOP. BURBAU



1820 map of the Missouri River bottom with the plan of Cantonment Missouri.

was considered an anti-scorbutant or a scurvy preventative.<sup>5</sup> This diet proved adequate when the troops served in settled areas because the soldiers usually could supplement it with fresh fruit and vegetables. At frontier outposts, however, such opportunities were infrequent. Because the ration failed to provide the men proper nutrition, it became a health hazard.

The established system of supplying the army created a second, related problem. Rather than allow the quartermaster general or the commissary general of purchases to buy foodstuffs, the army depended upon civilian contractors. Unfortunately, frontier merchants often sold diseased or poorly salted meat, spoiled flour, and scrawny, run-down cattle to the army.<sup>6</sup> This poor quality merchandise made the task of keeping the troops healthy difficult, as the experience of the Missouri Expedition proved.

The location of the new post at Council Bluffs posed another threat to the health of the expedition. When the troops arrived near their destination, a committee of officers from the Rifle Regiment and the Sixth Infantry chose a site on the west bank of the Missouri between the foot of the bluffs and the river bank. According to the expedition commander, Colonel Henry Atkinson, the cantonment site lay on "an extensive rich bottom, covered with timber for huts . . . ."<sup>7</sup> The officers chose this location because of the nearby timber and the easy access to the river for water and transportation, but in spite of these apparent advantages, the cantonment site proved to be an unwise choice. According to Sixth Infantry Surgeon Thomas Mower, the river bottomland was not what Atkinson had claimed. Instead, it was a low, flat clay bank separating the bluffs from the river. In

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5. Erna Risch, *Quartermaster Support of the Army: A History of the Corps, 1775-1935* (Washington, 1962), 203-4.

6. Thomas Hempstead Letter Book, May to September, 1819, in Yale University Library; "Documents in Relation to the Claim of James Johnson . . .," 16 Cong., 2 session, *House Executive Document 110*, 232-33, 346; Nichols, *General Henry Atkinson*, 57-60.

7. Henry Atkinson to Andrew Jackson, October 3, 1819, Jackson Papers; Sally A. Johnson, "Cantonment Missouri, 1819-1820," *Nebraska History*, XXXVII, No. 2 (June, 1956), 122-23.

addition, a marsh or shallow lake nearly three miles in circumference lay within six hundred yards of the cantonment. Thus the site was low, hard to drain, and near a mosquito-filled marsh.<sup>8</sup>

The strenuous work necessary to complete the camp buildings helped to weaken some of the men. On October 3, 1819, they began clearing land for their quarters and hurrying to erect their shelters before the full force of a Nebraska winter struck. Some troop details cut cottonwood trees while others sawed the logs into timbers or cut them into shingles for siding or roofing. Still others quarried limestone from the nearby bluffs and laid foundations for the buildings. During October, November, and December, 1819, the cantonment took shape. A square structure of 520 feet on each side, it had log walls sixteen feet high. The barracks lined the outer walls and included rooms of between eighteen and twenty feet square for officers and men.<sup>9</sup> Hurriedly put together, built of unseasoned, moist lumber, and only partially completed when the men occupied them in December, 1819, the barracks soon proved unsatisfactory. The rooms were damp, drafty, cold, smoky, and crowded. In addition, at least some of the buildings remained unfinished most of the winter.<sup>10</sup> As such, they caused much discomfort and contributed to the misery at the camp instead of providing comfortable living quarters.

Weak discipline and the careless disposal of garbage and sewage added to the difficulties at the camp. In late January, 1820, the post inspecting officer, Captain John Bliss, reported that trash and garbage littered the ground. Scraps from cleaning fish and butchering animals lay piled on the ground, and patches of ice—formed from dish water, bath water, and cooking liquids—also lay in front of the barracks. Wood for heating and cooking cluttered the individual barrack rooms,

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8. Thomas Mower, "Report to Surgeon General," October 1, 1820, in Lawson, *Statistical Report*, 15-16.

9. Henry Atkinson to John C. Calhoun, October 19, 1819, Quartermaster Papers; 16 Cong., 2 session, *HED 110*, 169-71; Johnson, "Cantonment Missouri," 123-25.

10. Lawson, *Statistical Report*, 16; Johnson, "Cantonment Missouri," 124-25.

and the unseasoned floor boards never dried because the soldiers spilled dishwater on them.<sup>11</sup> For these reasons too, the living quarters provided no escape from the wretched conditions in camp.

By January, 1820 the troops at Cantonment Missouri could anticipate nothing better than a rigorous winter spent in wretched surroundings. When the freezing winds swept south and east from the Plains, the temperature plummeted below zero. Several times it failed to get as high as zero for days at a time, and the mean temperature for January stood at a frigid 8.8 degrees.<sup>12</sup> At Cantonment Missouri the cold limited hunting, which in turn forced the troops to eat salted meat rather than fresh. It also slowed the work to complete the camp buildings and kept most of the men inside much of the time.

Under these conditions both morale and physical health declined. Soon dysentery and "plumononic inflammations" swept through the camp, and by January, 1820 the regimental surgeons reported that their medical supplies would soon be exhausted. By then, both Dr. John Gale, surgeon for the Rifle Regiment, and Dr. Thomas Mower, assigned to the Sixth Infantry, noted that scurvy had become the most important health problem at the camp.<sup>13</sup>

To house the sick, each regiment had a hospital of three barrack rooms, manned by the regimental surgeon and a surgeon's mate or assistant. These hospitals, however, provided no better facilities than the men had in their own quarters and offered little comfort to injured, sick, or dying soldiers. In fact, as disease spread through the camp, men came to dread being ordered to the hospital. So few of the scurvy victims recovered that the soldiers considered a move

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11. Captain John Bliss, "Report" quoted in Johnson, "Cantonment Missouri," 126. A minute record of events at the post may be found in Addison E. Sheldon (ed.), "Records of Fort Atkinson, 1819-1827." This is a typescript copy of the unit records of the Rifle Regiment until it was disbanded in 1821 and of the Sixth Infantry for the entire period. It was copied from the originals in the National Archives and is now in the Nebraska State Historical Society Library.

12. Lawson, *Statistical Report*, 11, 13.

13. *Ibid.*, 12, 17.

to the hospital a "certain passport to the grave."<sup>14</sup> Clearly this was an understandable reaction. Even if most of the sick might recover, staying in a room filled with scurvy patients was a frightening experience. Surgeon Gale described the symptoms among the soldiers in his regiment as follows:

The victim of this dreadful malady is characterized by his extreme feebleness and debility, his pale and bloated complexion; his spongy black and ulcerated gums; by his loosened teeth; his [feted] urine and offensive breath; by the [watery] swelling of his legs; the livid spots on his skin and the universal discolouration of the limbs; by his stiff and swollen joints; his rigid and contracted tendons; his loss of locomotion and by wandering and excruciating [*sic*] pains.<sup>15</sup>

Certainly the victims presented a ghastly appearance to their fellows, one which inspired fear and loathing. Even worse than the sight of the scurvy sufferers was the realization that without proper medical treatment most of them would die.

In order to cure existing cases of scurvy and stop its spread throughout the entire garrison, the medical officers tried to get fresh meat and vegetables for all of the troops and asked for vinegar for the sick. When told that these items were unavailable, they did what they could to make the sick comfortable and to make life at the garrison as pleasant as possible. For example, to improve the quality and taste of the "very putricient [*sic*]" and "highly deleterious" salted meat then being fed to the troops, they suggested boiling it in water and charcoal.<sup>16</sup> They claimed that the men would remain healthy and comfortable if they had to air their bedding more often than customary, change their underwear and uniforms frequently, and wash their faces, hands, and feet each night. They asked the garrison commander to insist that the men keep their quarters clean, but to no avail. Later

14. Johnson, "Cantonment Missouri," 129; Edwin James, *Account of an Expedition from Pittsburgh to the Rocky Mountains . . .*, Vol. 14, *Early Western Travels*, R. G. Thwaites (ed.), (Cleveland: Arthur H. Clark Co., 1905), 283.

15. John Gale to Willoughby Morgan, February 16, 1820, in Gale Letterbook, included in Kavanaugh Journal. Hereafter cited as Gale Letterbook.

16. John Gale and Thomas Mower to Willoughby Morgan, February 5, 1820, Gale Letterbook; Lawson, *Statistical Report*, 11.



*Although subsequent research has revealed some inaccuracies in detail, the above drawing from about 1890 illustrates the approximate style of uniform worn by the soldiers at Cantonment Missouri. In the foreground from left to right are privates in the Infantry, Rifles, and Artillery.*

as scurvy continued to spread, the surgeons suggested cutting windows through the interior walls of the barrack rooms. They wanted to get more air and light into the quarters but failed to consider that more windows would make the barracks even colder and less comfortable than they were.<sup>17</sup> When none of their actions or suggestions stopped the spread of scurvy, the surgeons recommended that the strongest of the patients be moved down river to Fort Osage as soon as the ice blocking the Missouri River melted. There they could be provided milk, fresh vegetables, and non-salted meat.<sup>18</sup> Until then the medical officers could do little except make the sick soldiers as comfortable as possible.

These proposals show that the surgeons at Cantonment Missouri did realize the causes and remedies for scurvy. They listed such things as spoiled, salted meat, a shortage of fresh vegetables, "excessive fatigue, indolence, cold and moisture and personal uncleanness" among the causes for the outbreak. These certainly included the major factors for the epidemic. Unfortunately, knowing the cure for scurvy did not mean that the garrison had the means to end the disease. In fact, the distance which the expedition had traveled up the Missouri proved to be the most difficult obstacle to overcome. Once the troops had passed frontier settlements, there was no one from whom meat, fruit, or vegetables could be bought. Ice blocked the Missouri River during the winter months, and the cantonment was too far away from other settlements to obtain food or medicine overland. Therefore, in spite of their efforts to prevent it, by February, 1820 the surgeons reported that scurvy was increasing at the garrison.<sup>19</sup>

There can be no certainty about how many of the soldiers suffered from that disease, because the unit records are both

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17. John Gale and Thomas Mower to Willoughby Morgan, February 5, 1820, Gale Letterbook; John Gale to Matthew Magee, February 23, 1820, Gale Letterbook.

18. John Gale to Board of Officers, February 25, 1820, Gale Letterbook; Kavanaugh Journal, February 29, 1820.

19. Lawson, *Statistical Report*, 17; John Gale to Board of Officers, February 25, 1820, Gale Letterbook; Kavanaugh Journal, February 10, 1820.

incomplete and contradictory. Cantonment Missouri had been built to house all of the men of both the Rifle and Sixth Infantry regiments, or about eleven hundred men. However, during the winter of 1819-1820 the strength of the garrison varied from about 750 to 800 men. According to the records of the Surgeon General, on January 1, 1820, the garrison at Cantonment Missouri included 788 officers and men.<sup>20</sup> The scurvy outbreak began with a few reported cases during January, 1820, and by February "nearly the whole regiment [Sixth Infantry] sank beneath its influence." Late that month Surgeon Gale reported that 280 men were sick and that nearly all of them had scurvy. By March 10, this had increased to 360 men, and less than two weeks later the count stood at 345 men sick and 100 dead. On April 1, he noted that 100 infantrymen and 60 riflemen had died. From these figures, it may be seen that the scurvy epidemic incapacitated or killed well over half of the garrison during February and March, 1820.<sup>21</sup>

In fact, survival became the prime objective of the command. The healthy officers and troops spent most of their time hunting game and serving on burial squads. On March 10, 1820, for example, the Sixth Infantry band and all of the garrison officers participated in a funeral ceremony for First Lieutenant John Ellison, the only officer to die of scurvy during the epidemic. That same day the burial squads interred the bodies of six enlisted men at the post cemetery.<sup>22</sup>

Morale among both officers and enlisted men declined as the sick list grew because neither group could stop the epidemic. Gambling, drinking, and bickering became common. Officers quarreled over real and imagined slights, and several resorted to illegal duels to settle their differences. Second Lieutenants Daniel Keith and Martin Scott, both of the Rifle Regiment, wounded each other during one of these

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20. Lawson, *Statistical Report*, 10.

21. Kavanaugh Journal, February 29, March 10, and April 1, 1820; John Gale to Willoughby Morgan, March 20, 1820, Gale Letterbook.

22. Kavanaugh Journal, March 10, 1820.

encounters in the snow behind the post. Although both men recovered, on March 15 First Lieutenant John Clark of the same regiment was shot and killed in another duel.<sup>23</sup>

By March 6, 1820, the twelve-inch thick ice covering the Missouri River had begun to melt and break up. For several days troops worked to free some of the keel boats then caught in the ice along the river bank. The boats had to be repaired and protected from floating debris in the rising water. On March 20, Surgeon Gale repeated his earlier urgings that the strongest scurvy patients be sent down river to Fort Osage. He recommended that those men in the final stages of the disease not be moved by boat because he thought that they would not survive the journey. Unfortunately, his prediction proved accurate even for some of the stronger patients. Of the one hundred men taken down river to Fort Osage by boat on March 25, at least twenty died enroute.<sup>24</sup>

To treat the remaining men thought to have a chance for survival, the physicians decided to move them out of the cantonment. Apparently they did this for two reasons. First, they hoped that a change of scenery would improve morale among the sick. Second they wanted to get the men out of the filthy, disease-ridden camp. The medical officers supervised moving the sick soldiers to the woods about three miles from the cantonment, where they erected a hut and tent city called Camp Recovery. There the men found wild onions and got fresh meat by hunting. These additions to their diet helped to end the scurvy epidemic. The stay at Camp Recovery brought what some considered near miracle recoveries. Dr. Mower cited several cases in which patients taken there in a "seeming moribund state" recovered. Some of the men had already lost all of their teeth, while on others "large portions of the lips had sloughed off." In all of these cases the men recovered and eventually returned to duty.<sup>25</sup>

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23. *Ibid.*, March 16, 1820; Nancy D. Sachse, "Frontier Legend; Bennington's Martin Scott," *Vermont History*, XXXIV, No. 3 (July, 1966), 160-61.

24. Lawson, *Statistical Report*, 13; James, *Account of an Expedition*, 14: 283; John Gale to Willoughby Morgan, March 20, 1820, Gale Letterbook.

25. Lawson, *Statistical Report*, 18; John Gale to Willoughby Morgan, April 5, 1820, Gale Letterbook; Kavanaugh Journal, April 1, 1820.

The scurvy epidemic of 1820 naturally reduced the effectiveness of both regiments. It also shocked army and War Department leaders. Colonel Henry Atkinson, commanding officer of the Ninth Military Department as well as of the Missouri Expedition, expressed surprise, claiming to have sent enough rations and fresh beef to the cantonment during late 1819.<sup>26</sup> Perhaps the supplies he sent would have been sufficient for healthy, well-housed men, but they obviously failed to provide enough nourishment for the soldiers at Cantonment Missouri.

The scurvy epidemic and a cut in military appropriations in 1820 caused at least one positive response. Colonel Atkinson had suggested that frontier army units could reduce War Department expenditures for food and keep themselves healthy if they got a part of their meat ration from hunting

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26. Henry Atkinson to Thomas Jesup, April 6, 1820, Quartermaster General Consolidated File, Atkinson's Expedition, Records of the Office of the Quartermaster General, Record Group 92, National Archives.



*This gravestone fragment, found in the officers' cemetery, could be from the grave of an officer dead as a result of the rigorous winter of 1819-1820.*

and if they could raise livestock and fresh vegetables to supplement their diet. On April 10, 1820, Secretary of War John Calhoun concurred. By October of that year, Atkinson reported that the men at Cantonment Missouri had harvested 250 tons of hay for livestock, 13,000 bushels of corn, 4,000 bushels of potatoes, and 4,000 to 5,000 bushels of turnips. Apparently these vegetables and feed for livestock to provide fresh meat did help, because army deaths from scurvy dropped from 190 in 1820 to only five the next year. In fact, excluding the scurvy epidemic of 1820, there were only eleven deaths from scurvy in the army from 1819 to 1838.<sup>27</sup> Obviously, the unusual circumstances related to the Missouri Expedition of 1819, the poor food and long distances from the nearest settlements, explain the outbreak.

Extensive farming operations such as those at Cantonment Missouri drew some criticism as being unmilitary and unnecessary. As a result, soldiers at most army posts gradually reduced their agricultural efforts to small vegetable gardens.

The only other noticeable result of the scurvy epidemic was an effort to drop whiskey from the army rations. It is impossible to be sure if this resulted from growing temperance sentiment within the country or not. Whatever the case, after 1820 the Quartermaster Department began to substitute beer and wine for whiskey. Officially, the department claimed that beer and wine were more nutritious, although there seems to have been little or no study of the matter. After a short time the army decided that it was easier to buy whiskey and ended this experiment.<sup>28</sup>

The twin causes for the scurvy epidemic at Cantonment Missouri, the inability of the army to provide an adequate diet and the distance from settlements, remained prevalent on the frontier, and American soldiers continued to suffer from the disease. Troops serving under General William

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27. John C. Calhoun to Henry Atkinson, April 10, 1820, Jackson Papers; Henry Atkinson to John C. Calhoun, October 18, 1820, quoted in the *Missouri Intelligencer* (Franklin), February 5, 1821; Lawson, *Statistical Report*, 11.

28. Risch, *Quartermaster Support*, 204.

Harney at Fort Pierre in present South Dakota during the 1850's, for example, encountered it. By then, however, army medical officers at least had lime juice for their scurvy-ridden patients, and few, if any men died.<sup>29</sup> Recurring outbreaks of the disease continued among frontier soldiers during the later decades, although never again did a scurvy epidemic of such magnitude occur. As a result, the Nebraska scurvy epidemic of 1820, which killed or weakened nearly one tenth of the entire army, stands alone. But the fact that scurvy continued among the troops indicates how little attention governmental and army leaders paid to the welfare of American frontier soldiers. The Nebraska experience also shows how useless and unnecessary was the suffering and death from scurvy at Cantonment Missouri.

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29. Robert G. Athearn, *Forts of the Upper Missouri* (Englewood Cliffs, N. J.: Prentice-Hall, 1967), 46.