Medicine for the Military

Dr. George M. Sternberg on the Kansas Plains, 1866–1870

by Stephen C. Craig

With the end of the Civil War in April 1865, service on the western frontier became the focus of the army's postwar mission, specifically the protection of railroad construction parties and settlers as they made their way west. The Military Division of the Missouri, commanded by Major General William T. Sherman, stretched from Canada to Texas and from the Mississippi River to the Rocky Mountains. This vast area encompassed the Great Plains, over which large numbers of emigrants were moving west. Along the way small towns blossomed, stagecoach lines were established, and railroads were constructed. These incursions onto Indian hunting ranges generated fear and rage among the Plains Indian tribes. To safeguard their independence, culture, and ways of life, the tribes would have to fight. The army's strategy was to dot the major emigration arteries with forts. In Kansas these arteries were the Smoky Hill and Santa Fe Trails; along the Smoky Hill route to Denver the government established Forts Riley, Ellsworth (later Harker), Hays, and Wallace.¹

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Fort Ellsworth was situated on the Smoky Hill River floodplain, ninety-three miles southwest of Fort Riley. In the spring of 1866 the garrison, comprising F and D companies, Second Cavalry, and F and L companies, Third Infantry, were assigned to protect laborers of the Union Pacific Railroad, Eastern Division; to guard a number of new stations west of the post; and to provide escort details for stage companies such as the Butterfield Overland Despatch and Wells Fargo. Construction of the new Fort Ellsworth, a mile to the northeast, would begin in the summer. Once the new fort was completed it also would serve as a quartermaster and commissary depot for posts on the Arkansas River and in Colorado and New Mexico.2

An army medical department constrained by post-Civil War reductions in manpower and funding provided medical services to these forts. The medical department had a fixed strength of 210 medical officers in the rank of major and below available for assignment and more than two hundred forts requiring routine medical services in garrison and medical support while on campaign. Physicians who remained in uniform after the war frequently found themselves moving west to support these operations. One of these was assistant surgeon First Lieutenant George M. Sternberg. In late April 1866 Sternberg accompanied elements of the Third U.S. Infantry from Fort Leavenworth to Fort Ellsworth, Kansas. On arrival the twenty-eight-year-old physician assumed duties as post surgeon.3

Alice Blackwood Baldwin (Salt Lake City: Tanner Trust Fund, 1978), 35; Record of Medical History of Post, Fort Harker, 1865–1872, RG 94, National Archives (hereafter cited as Record of Medical History, Harker). In 1863 the railway was designated the Union Pacific, Eastern Division; in 1869 the name was changed to Kansas Pacific.


3. Gillett, The Army Medical Department, 12; Percy M. Ashburn, A History of the Medical Department of the United States Army (Boston: Houghton Mifflin Co., 1929), 89; Harvey E. Brown, The Medical Department of the United States Army from 1775 to 1873 (Washington, D.C.: Surgeon General’s Office, 1873), 244; Special Order No. 89, April 14, 1866, Personal Papers of Medical Officers, box 551 (Sternberg). Records of the Adjutant General’s Office, RG 94, National Archives (hereafter cited as Papers of Medical Officers, Sternberg); Personal Report, Sternberg to Surgeon General, April 30, 1866, ibid. Sternberg was promoted to captain on May 28, 1866. At the end of the war he had received the honorary “bravery” promotions to captain and major for gallantry in combat, and he therefore wore the rank of and was addressed as major. Although brevet rank had little practical sig-
A native of Otsego County, New York, Sternberg (1838-1915) was descended from devout Lutherans who had immigrated from the German Palatinate. His military medical career was destined to span four decades, and during those years he established himself as a dedicated soldier, competent physician, astute bacteriologist and scientist, progressive educator, and able surgeon general of the army. But in the spring of 1861 Sternberg was engaged in his second unsuccessful medical practice in Elizabeth City, New Jersey. He had attended medical classes at the Western Medical College in Buffalo and at the College of Physicians and Surgeons in New York City, where he received his medical degree in 1860. Although Sternberg had been well trained by physicians such as Willard Parker, Austin Flint, John C. Dalton, Frank H. Hamilton, and Alonzo Clark, he found private practice discouraging.

Sternberg took down his shingle and applied for the army medical board examinations as the country prepared for war. He passed the exams in May, was commissioned a first lieutenant in the regular army, and assigned as surgeon to the Third U.S. Infantry Battalion. Vexed for intrepid actions at the Battle of First Bull Run and at Gaines Mill and Malvern Hill during the Peninsula Campaign, he later served as assistant medical director for the Department of the Gulf and in army general hospitals. In August 1865 Sternberg was assigned as the post surgeon to the Jefferson Barracks, Missouri, recruiting depot.

Sternberg and his childhood sweetheart, Maria Louisa Russell, daughter of a prominent Cooperstown, New York, merchant, were married on October 19, 1865. Six months later George received orders to Fort Ellsworth, Kansas. Louisa accompanied her husband to the frontier outpost, but since the housing available at Fort Ellsworth was rudimentary at best, Louisa returned to Cooperstown until new quarters were ready in the spring of 1867.

Although "lonely and disconsolate" for Louisa, George found his time completely occupied with the duties of a frontier soldier and physician. Professionally dirty and generally monotonous, daily duties centered around sick call; inspections of living areas, water supplies, stables, and kitchens; and medical department paperwork. Occasionally work details or military operations away from the post required medical support. Sternberg was assisted in these by civilian contract surgeon (also referred to as acting assistant surgeon) J. A. Sabine, hospital steward John Lamb, and enlisted soldiers temporarily detailed from companies on post. Additionally, Sternberg was given duty as post treasurer. In July he became the sole medical provider for the post when Sabine departed and Lamb was arrested and confined. His burden did not lighten until the fall when a new civilian contract surgeon, Dr. Thomas B. Chase, arrived and a new hospital steward, Charles Miller, was assigned.

During the summer of 1866 construction activities increased dramatically and the new post took shape as storehouses, barracks, and offices quarters were raised. Sternberg and Chase anxiously watched construction of the new hospital two hundred yards south of the main garrison. When completed it would be a substantial structure of dressed sandstone with two twenty-bed

wards. Fort Ellsworth was renamed Fort Harker on November 11, and in January 1867 part of the new post was occupied.7

Obtaining a substantial and well-appointed home for Louisa remained a high priority, and Sternberg filed a homestead claim for a quarter section of rich bottomland on the wooded banks of the Smoky Hill River two and a half miles south of the fort. He was impressed with the area, and his ambitions went beyond a small plot of land on which he and his wife could live comfortably and raise a garden. Businessmen in Ellsworth County saw the presence of a large, permanent army post and the coming railroad as an opportunity for lucrative land speculation and commercial ventures. The potential for the town, to be named Ellsworth, to become a prosperous agricultural center was great. With the acumen of a shrewd land speculator and possibly thoughts of residing permanently in the area, Sternberg amassed six hundred fertile acres by purchasing from other officers land adjoining his claim. One of these parcels included a large farmhouse. Sternberg’s biographers do not state why he acquired this amount of land. At this time he may not have determined on an army career. Jennie Barnitz, wife of Captain Albert Barnitz, Seventh U.S. Cavalry, also remarked to her husband that, “he [Sternberg] is more certain of remaining here than others and can surround himself with all those things.”8

Regardless, he was proud and enthusiastic. Sternberg wrote to his parents, then living in Albion, Iowa, about his ranch and urged them to visit soon. When his father, Levi, visited Ellsworth he found a well-established farm with livestock and planted fields. The elder Sternberg was the principal of Iowa Lutheran College, but when he saw the ranch and discussed its development with his son he saw future possibilities for his wife and their nine children in central Kansas. The elder Sternberg offered to purchase the ranch. Although George was eager to have his family nearby, he felt the wild plains of Kansas were not the proper abode for his well-educated and refined mother. However, he could neither deny the ranch to his father nor accept his father’s offer for payment. Dis-

7. Post Returns, July 1866–June 1867; Record of Medical History, Harker, 2, 15–16.

cretely, George transferred ownership to his father. Levi could not move until his teaching obligations were completed in late spring. However, George’s seventeen-year-old twin brothers, Charles and Edward, anxious to see the wild West, convinced him that they would be valuable farm hands and preceded the family to Ellsworth.

Louisa finally arrived on the afternoon of May 26, 1867, after a tiring, thirty-six-mile journey from the Salina railway station in an army ambulance. Elated to have his darling “Puss” with him again, Sternberg proudly showed her their new but temporary home south of Fort Harker. His parents and nine siblings would fill the roomy farmhouse, and therefore he had to secure quarters on post. The change in Sternberg’s gloomy spirits was immediate, which Jennie Barnitz noted to Louisa. Louisa vowed, “I will never leave George alone again, under any circumstances. I did not know he missed me so.” Louisa’s pleasant, kind-hearted nature and “high moral principle” rapidly gained her acceptance by the small contingent of army wives at Fort Harker, diligently working to make their spartan existence more pleasant.

The Sternbergs occupied their new one-story frame quarters on the parade ground in mid-June. Jennie Barnitz remarked to her husband in a letter that Louisa had “five spacious rooms—very handsomely furnished,” and “china and silver for her table.” George also employed a cook named Bridget. The Sternberg table, spread with the fruits of George’s well-cultivated garden, was a happy gathering place for officers and their wives.

Louisa’s introduction to the pleasantries of frontier army life was attended by the anxieties of a post preparing for war. As the harsh Kansas winter of 1866–1867 gave way to spring, the U.S. Army’s presence in Kansas continued to grow, but commanders maintained a defensive stance until forces were marshaled in sufficient strength for offensive operations. The Little Arkansas Treaties of 1865 and the Bluff Creek Council held in early 1866, which kept the Southern Plains generally peaceful through 1866, were tenuous at best, and sporadic fighting between whites and Indians continued throughout the winter. General Sherman’s response to this situation was to conduct total war across the Plains until the Indians submitted to life on reservations or were exterminated. He had developed plans for such operations against the Northern and Southern Plains tribes by March 1867. The U.S. Congress, however, favored a negotiated resolution. While a peace commission delayed Colonel John Gibbon’s expedition to the Northern Plains, in April Sherman launched General Winfield Scott Hancock on an expedition to harass and intimidate the Southern Plains Indians.

Hancock’s expedition failed miserably and initiated Cheyenne, Arapaho, and Sioux aggression along the Smoky Hill route in June, particularly in the vicinity of Fort Harker, slowing railroad construction considerably. Fort Harker bustled with activity. Colonel Andrew J. Smith, commanding the Seventh Cavalry at Fort Harker, intensified efforts to guard railroad workers and settlers in the area. These efforts

9. Sternberg, George M. Sternberg, 18–19; Rogers, A Dinosaur Dynasty, 1–12; Charles H. Sternberg, Life of a Fossil Hunter (New York: Henry Holt and Co., 1909), 5–6; 14; Dykstra, The Cattle Towns, 113; Clapsaddle, “Conflict and Commerce on the Santa Fe Trail,” 136. Martha Sternberg’s account of this episode differs from that of Katherine Rogers in A Dinosaur Dynasty. Mrs. Sternberg indicates that George was not in favor of settling his mother in Kansas. Rogers indicates that it was part of George’s plan to coax his parents to Kansas from the time he purchased the ranch. Gibson does not refer to the episode and Charles Sternberg merely states that he and his brother Edward moved to George’s ranch in 1867. Sternberg had good reason not to want his mother near Ellsworth. Soon after its founding in 1867 it gained a reputation as a rough, seedy cowtown accommodating and harboring the worst elements of society.

10. Rogers, A Dinosaur Dynasty. 12. Levi Sternberg took over the ranch in July 1867 and initially combined farming with his ministerial duties. By 1869 he had substantial land holdings on both sides of the Smoky Hill River, and with the help of his sons his “Smoky Hill Dairy” became a major butter producer for the area. While earning a statewide reputation as an agriculturist, Levi Sternberg also was appointed pastor of the First Presbyterian Church of Ellsworth, and he served on the Board of Regents for Kansas State Agriculture College, 1871–1873. See Dykstra, Ellsworth: 1869–1875; Dykstra, The Cattle Towns, 309.

11. Billings, A Report on Barracks and Hospitals with Descriptions of Military Posts, 290; Barnitz Papers. The railroad was not completed to Ellsworth until July 5. See Zornow, Kansas, 152.

12. Utley, Life in Custer’s Cavalry, 91; Barnitz Papers.

13. Ibid., 59; Carrickers, An Army Wife on the Frontier, 42.

included a ten-man detail to the Sternberg ranch. In addition, between five hundred and eight hundred quartermaster employees labored feverishly not only to construct the new post and supply depots but also to resupply and outfit troops arriving from Fort Riley. Elements of the Tenth U.S. Cavalry; the Third, Thirtieth, and Thirty-eighth U.S. Infantry regiments; and a regiment of Eighteenth Kansas Volunteers camped in and around the post.

This large and increasing military and civilian population living in less than ideal conditions generated an immense sanitation problem. Heavy spring rains and flooding during the first week of June made the fort and Ellsworth a muddy quagmire that compounded the problem. Sanitation and personal hygiene techniques of the day were primitive, and the Civil War experience of the average line officer did nothing to bolster his faith in the preventive measures advocated by the medical department. Additionally, line officers were not required to routinely submit sanitation reports to their commanders. Directives for the proper disposal of human waste, garbage, and animal refuse from the slaughter pens, were issued by the post surgeons, but often the most basic recommendations were ignored. The Smoky Hill River and other streams, used for bathing and washing clothes, became convenient dumping sites for refuse of all varieties. The single water source for the post, a spring located two miles from Harker at old Fort Ellsworth, was either inadequate or too inconvenient for the large number of people it supplied. Consequently, drinking water was obtained from the polluted streams. These crowded, unsanitary conditions primed Fort Harker for a gastrointestinal disease outbreak. All that was required was a virulent organism that could be easily transmitted in this environment.

One such organism, *Vibrio cholerae*, the causative agent of cholera, struck North America for the third time in 1866. Transmitted primarily by water or food that has been in contact with contaminated water, this bacterium produces a toxin that is responsible for the profuse watery diarrhea, rapid dehydration, and collapse associated with the disease. Before the advent of intravenous fluid replacement and antibiotics doctors had no effective treatment for cholera. The U.S. Army suffered 2,813 cases and 1,269 deaths in 1866. While few physicians considered valid the idea that a microorganism was responsible for the disease, many acknowledged that human excreta were involved with disseminating cholera. Practical-minded American physicians embraced the recommendations of Dr. John Snow and Dr. Max von Pettenkofer to boil water and disinfect clothing and bed linens. Joseph J. Woodward’s *Report on the Epidemic Cholera in the United States Army During the Year 1866*, issued to all medical officers, reviewed the epidemic and provided guidance for preventing and controlling the disease in an effort to prepare physicians for an outbreak in 1867. The report stressed the value of quarantine measures and hygienic precautions, particularly water purification, disinfection of patient discharges, ventilation, and adequate air space in barracks.19

In June 1867 cholera made its first appearance among civilians in New Orleans, Vicksburg, and St. Louis. Late in the month Fort Riley had its first cases. Although the source is unknown, the victims were civilians. Through the energetic efforts of post surgeon Bernard J. D. Irwin the disease did not become epidemic, and no cases were reported in soldiers assigned to Fort Riley or in those soldiers passing through the post on their way west. These facts have led historians to believe that cholera was introduced at Fort Harker by civilians from Fort Riley or points south and east, whose movements were uncontrolled by the military.20

On June 28 George W. Keeton, a herder and butcher, and Private George Groom, Company H, Thirty-eighth U.S. Infantry, were the first victims of cholera at Fort Harker. How conscientious Sternberg and Chase had been in urging sanitary recommendations on commanders and how well their advice was heeded before cholera struck are questionable. Sternberg admitted in his report that the police of the camps was not good when cholera made its appearance. Some of the company sinks were in wretched condition, and there were several offensive holes about the post where slops and garbage from the kitchen had been thrown. Measures were at once taken to remedy these evils: a strict system of policing was inaugurated; the camps were all moved to new grounds, and disinfectants were procured and freely used.

These statements do not necessarily indicate a lack of proper medical recommendations as much as they do a lack of command support in their implementation.21

On June 30, with the cholera epidemic but two days old, Sternberg apparently had the cooperation of the post and line commanders as he stated, “I made a thorough sanitary inspection of the post . . . and all my recommendations in regard to policing have been carried out by the post commander. The camps . . . of the 38th Infantry have been moved to better and higher grounds. The old sinks have been filled up and new ones dug.” Sternberg also isolated cholera cases from other patients by placing them in hospital tents “pitched for the sick in the quarters of each company” and “pitched 50 yards in the rear of the hospital.” In essence he followed the quarantine and hygienic guidance provided in Woodward’s 1866 report, but cases of cholera increased through the


first week of July. Unfortunately, this coincided with an increase in Indian activity during the same period.

On July 9 Sternberg again made recommendations concerning movement of transient and garrison troops about the post, location of cantonment areas, and sanitary policing of these camps, but he met resistance from the quartermaster depot in their implementation. The "Remarks" Sternberg added to his letter overflow with frustration and controlled anger: "The above recommendations in so as they relate to the movement of troops & to the employees of the Q.M. [Quartermaster] Dept. were not fully carried out. My efforts to secure a systematic & efficient method of policing in the camps of the Q.M. Employees were only partially successful, in consequence of the tardy and incomplete manner in which the Depot Q.M. assisted them." Four days later he requested a "permanent police party" be designated to report to him and stated that, "New cases of cholera are occurring everyday & we may anticipate a severe epidemic, unless every precaution is taken—constant polic-

ing and constant disinfection of privy vaults, etc. is essential." Following these recommendations he provided a plan, approved by the post commander, for a cholera hospital to be established north of the railroad depot, but "nothing was done in regard to it by the Depot QM, who was charged with the execution of it." 23

Records provide no reason for the post quartermaster's disregard of medical recommendations in the face of an expanding epidemic. However, in his August 5 report, Madison Mills, medical director of the Department of the Missouri, states that "Large details have been made from the command, and from the employees of the quartermaster's department, to thoroughly police the grounds, move tents, and disinfect privies and latrines, etc. Tents are being put up for the accommodation of cholera patients on the opposite side of the garrison from the hospital now occupied." Exactly when these details were formed re-


23. Sternberg to Post Commander, July 9, 1867, box 96, Letters Received, Surgeon General's Office, 1818–1870, RG 112, National Archives (hereafter cited as Letters Received, Surgeon General's Office); Sternberg to Post Commander, July 13, 1867, ibid.; Sternberg to Post Commander, July 17, 1867, ibid.
Sternberg and Chase were not the only surgeons at Fort Harker. Assistant surgeon Captain Ely McClellan, assistant surgeon George McGill, and acting assistant surgeon Ira Perry served with the Thirty-eighth Infantry. Acting assistant surgeon Algernon Squrier, new to the army and the Plains, attended to the Eighteenth Kansas Cavalry. These officers were responsible for ensuring their unit areas were appropriately positioned and policed. When cholera broke out they tended to their sick in camp; only severe cases were admitted to the post hospital.

Unfortunately for the medical efforts at Harker, troop movements and the appearance of cholera at Fort Zarah took surgeons McGill, Squier, and Perry away from Fort Harker. Military dependents and civilian employees were rapidly fleeing Ellsworth County by any means available. By the end of July Ellsworth was little more than a ghost town, its population of one thousand reduced to fewer than one hundred. More than three hundred railroad laborers and all construction crews at Fort Harker had quit. Elizabeth Custer, wife of Lieutenant Colonel George A. Custer, Seventh Cavalry, remembered the post as “the most absolutely dismal and melancholy spot I remember ever to have seen.” The remaining medical staff and many of the women who had not fled the fort intensified their efforts to control the epidemic and succor the sick. True to her word, Louisa refused to leave her husband. She nursed the sick until she succumbed to the disease, dying just six hours after the onset of symptoms. Utterly devastated, Sternberg stoically reported to Surgeon General Joseph K. Barnes: “One of the ladies of the garrison died of cholera on the 15th of July.” Bridge, the Sternbergs’ cook, died the next day.

The growing epidemic at Fort Harker soon received command attention. Major Madison Mills, surgeon, arrived late in the evening of July 22 with surgeon Major Ebenezer Swift, assistant surgeon Captain John Brewer, and acting assistant surgeons Augustus Wiggins and William Renick to appraise the situation and ascertain what assistance was required. The post had had eighty-eight cholera cases and forty-two deaths. Sanitation was in a miserable state. The surgeons were physically and psychologically distraught. Chase, ill himself since July 18, lost his wife to puerperal convulsions only a few hours before the medical party arrived. Although Louisa had been dead but three days, Sternberg assumed Chase’s duties along with his own. When Mills arrived he found Sternberg depressed and prostrate in bed and Chase “not in condition to do any kind of duty.” Dr. Brewer relieved the post surgeon of his medical duties.

With the exception of Dr. Renick, all surgeons involved with the epidemic prepared after-action reports. Troop movements, poor drinking water, and unsanitary conditions all were implicated as causes of the epidemic. Of all the physicians, only Dr. Brewer used his report to glorify his own actions and through the omission of Sternberg’s efforts cast the post surgeon in a culpatory light. Brewer stated his immediate and continuing actions redundantly in positive, forceful terms: “I was at once assigned to duty”; “immediately went on duty and visited the cholera wards”; and “I took personal charge of the cholera wards.” Clearly Brewer wanted the medical command, and he wanted recorded for posterity that he was the man of the hour. He remarked, “The most recent and approved methods of treatment were adopted, and every known means resorted to for the cure or alleviation of the disease.”

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25. Personal Papers of Medical Officers, box 354 (McClellan), Records of the Adjutant General’s Office, RG 94, National Archives; ibid., box 451 (Perry); ibid., box 549 (Squrier); Powers and Younger, “Cholera on the Plains,” 567.
31. Ibid., 33, 35, 37.
The weary surgeons at Fort Harker were not ignorant of the current therapies recommended for cholera. Assistant surgeons McClellan and McGill had experienced the cholera epidemic of 1866. Woodward's report, issued in the spring of 1867, provided treatment guidance and stated that no "new light has been shed upon the existing obscurity of the subject." References in the post medical library, such as George B. Wood's *Treatise on the Practice of Medicine*, also offered recommendations and guidance. Therapy included oral dosing with opiates (Squibb's Mixture) and inhalation of chloroform for early cramping, diarrhea, and vomiting. Large doses of mercurial compounds (calomel), camphor, and cayenne pepper were given to patients with severe manifestations of disease. Sternberg commented in his report that chloroform treatments were first used upon McClellan's recommendation, but later calomel was adopted and proved more efficacious. Brewer continued to use these regimens, with the addition of quinine, but did not achieve much success. His report continued, "A large majority of the cases were not seen until the stage of collapse had ensued." This is not true. From the beginning of the epidemic, Sternberg had mandated that command surgeons treat as many cases as they could in their unit areas and only send the worst cases to the post hospital. Brewer was seeing the most severe cases, but this does not mean these cases had had no prior medical attention.

Brewer admitted that the origin of the epidemic was uncertain and that the evidence for the importation of cholera was "meager," but he did not wholly preclude this possibility. Regarding the question of the epidemic's local origin he had much to say. He used three contemporary studies of cholera—one stating that without a "peculiar cause" of cholera no amount of filth will generate it, and the other two supporting filth as the cause of the disease—to support his contention that poor sanitation at Fort Harker, which he described in detail, caused the epidemic. Brewer's comments reflect the most current thoughts and ideas of cholera causation and epidemiology. Given that they had no knowledge of a bacteriologic basis of disease and the fact that sanitation on and around the post was poor prior to the epidemic, this made sense.

In his concluding paragraph Brewer stated, "as soon as I reached the post I put in operation every means available for correcting the deplorable condi-
tion of affairs." This included removing filth, weeding and policing areas, moving sinks regularly, and using disinfectants liberally. Although Fort Harker's surgeons had been using disinfectants and Sternberg had requisitioned more, Brewer proudly stated, "To the free use of disinfectants in the cholera tents and sinks, I attribute the immunity from the disease enjoyed by the nurses and attendants. No case of cholera occurred among them after I took charge." To add insult to injury, he ignored the efforts of the post surgeon while lauding Renick, Chase, Swift, and hospital steward C. S. Darling as men who "did their duty." [35]

As chief medical officer Sternberg bore responsibility for providing appropriate sanitary recommendations to the commander at Fort Harker. However, Sternberg possessed no command authority in his own right. Whatever the conditions were at the post before cholera struck, he had command support in implementing appropriate sanitary measures during the initial stage of the epidemic. As the situation became critical, however, command support apparently faded. With cases mounting, his medical staff shrinking, and personal tragedy overwhelming him, Sternberg found it impossible to ensure his recommendations were being enforced. He and those assisting him failed in their sanitary mission not because of wanton neglect or ignorance but because they did not receive command support, did not have authority over the civilians around the post, and eventually were overcome by events requiring more time and medical officers than were available.

On July 30 Sternberg was granted a leave of absence to visit his family in New York. He returned to Fort Harker at the end of September and was reassigned as post surgeon at Fort Riley in early October. [36] While Sternberg became acquainted with Fort Riley, a peace commission met with the Southern Plains Indians at Medicine Lodge Creek, Kansas, in October 1867. The result of this parley was the Medicine Lodge Treaty, by which tribal leaders relinquished their rights to land between the Arkansas and Platte Rivers and agreed to reside on two reservations, one for Kiowas, Comanches, and Kiowa–Apaches, the other for Cheyennes and Arapahos south of the Arkansas River in western Indian Territory. The government would distribute annuities, including seed, stock, farming tools, and clothing. The treaty also stipulated no unauthorized whites would trespass on Indian land and there would be no Indian interference with railroad construction or white settlement north of the Arkansas. Although the winter of 1867–1868 passed in relative quiet, the treaty was doomed to failure. Tribal elders seemed reconciled to the treaty, but the younger, more volatile tribal factions were extremely displeased with the terms. Young warriors did not wish to become farmers and reside within the unnatural boundaries created by the white man. Annuities promised by the government, including arms and ammunition, were slow in coming. This led many Indians to believe that treaty signatures had been fraudulently obtained by promises of goods that never were intended for delivery. Indian hostility seethed during the winter. [37]

General Philip H. Sheridan, who in August had replaced General Hancock as commander of the Department of the Missouri, feared that Indian aggression would increase when the buffalo returned to their feeding grounds. In the spring of 1868 Sheridan sent the Seventh and Tenth Cavalry regiments on campaign across Kansas to safeguard settlers and laborers working on the Kansas Pacific Railroad. [38] Most of the Tenth Cavalry, under the command of Colonel Benjamin H. Grierson, were stationed at Fort Riley during the winter of 1867–1868. [39] When orders

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35. Ibid., 37, 39, 38.
36. Special Orders No. 163, Department of the Missouri, Fort Leavenworth, July 13, 1867, George M. Sternberg Papers, 1861–1912, History of Medicine Division, National Library of Medicine, Bethesda, Md.; Papers of Medical Officers, Sternberg.
38. Sheridan, Personal Memoirs of Philip H. Sheridan, 2, 256; Utley, Frontier Regulars, 142, 147; Utley, Life in Custer's Cavalry, 147.
arrived for the Tenth to move west in late March 1868, Sternberg and acting assistant surgeon Henry S. Kilbourne were assigned to this regiment. Sternberg’s orders directed him to prepare medical supplies, equipage, and transportation and to be ready to accompany Major Meredith H. Kidd and six troops from Fort Riley to Fort Hays. On the morning of April 15 Major Kidd’s detachment, consisting of B, C, F, H, I, G, and K troops and William F. “Buffalo Bill” Cody as hunter and scout, marched out of Fort Riley to the spirited tunes played by the regimental band.40

The detachment arrived at Fort Hays on April 24 and camped on Big Creek near the head of the Union Pacific Railway. Companies A, D, E, G, and K, Seventh Cavalry, were camped a mile away on the other side of the same stream. Indian activity was minimal. Soldiers from both regiments settled into a quiet daily routine; they socialized, hunted, fished, and enjoyed fresh rations daily from Fort Hays. The command was generally healthy. With the exception of four deaths—two due to respiratory illness and two from accidentally self-inflicted gunshots—and occasional injuries, surgeons Sternberg and Kilbourne were free to enjoy the amusements of camp life.41

The natural beauty of undeveloped western Kansas with its abundance of flora and fauna fascinated Sternberg on the seemingly interminable marches. His inherent scientific curiosity led him far afield to gather fossils, animal remains, and Indian artifacts, which he dutifully sent to the Army Medical Museum. So far afield would he go, in fact, that officers in the command feared that he might fall prey to the Indians on his excursions. Apparently unconcerned for his safety, Sternberg continued his explorations throughout the campaign.42

Sheridan’s hope that the Indians would remain quiescent was short-lived. In late May Cheyenne dog soldiers attacked Cayote Station and Fort Wallace, Kansas. The Tenth marched for Fort Wallace, arriving on June 3. From their base camp on Rose Creek, companies searched in vain for the elusive Indians in the Smoky Hill, Saline, and Solomon River valleys during June and July.43

40. Orders, Department of the Missouri, Fort Leavenworth, March 23, 1868, Sternberg Papers; Special Orders No. 70, Department of the Missouri, Fort Leavenworth, April 8, 1868, ibid.; Papers of Medical Officers, Sternberg, Orders indicate that Major Kidd was to take six companies to Fort Hays, but regimental muster rolls show that seven companies marched to the western Kansas post. See Regimental Muster Rolls, Tenth U.S. Cavalry, April—September 1868, boxes 1140, 1141, 1147, 1149, 1151, 1153, 1155, Records of the Adjutant General’s Office, RG 94, National Archives (hereafter cited as Muster Rolls, Tenth Cavalry); Armes, Ups and Downs of an Army Officer, 262, 271, 272.

41. Captain Armes, F Company, Tenth Cavalry, stated he was stunned when thrown from his horse in late May. Apparently the fall rendered him unconscious because he was given up for dead by some, but Drs. Sternberg and Killburn [sic] brought me to life all right.” Utley, Life in Custer’s Cavalry, 143, 148–49; Muster Rolls, Tenth Cavalry, April 1867; Armes, Ups and Downs of an Army Officer, 266, 267, 271.


43. Sheridan, Personal Memoirs of Philip H. Sheridan, 298; Armes, Ups and Downs of an Army Officer, 265; Muster Rolls, Tenth Cavalry, June—July 1868.
Indian encampments near Fort Dodge began to break up in July, but the tribes moved north rather than south to the reservations. Cheyenne raids continued, prompting Indian superintendent Thomas Murphy to withhold all weapons from the tribes. When Comanches and Kiowas arrived at Fort Larned to receive their arms and annuities, they were furious, but tribal elders managed to convince Lieutenant Colonel Alfred Sully, commander of the District of the Arkansas, that no trouble would ensue if arms were distributed. Sully consented on August 9. Over the next four days Indian war parties struck settlements along the Saline and Solomon Rivers north of Fort Harker. Outraged, Sully ordered Captain Frederick Benteen to march Companies H and M, Seventh Cavalry, then at Fort Harker, to the Saline River settlements. Benteen and his troopers attacked one hundred Cheyenne and Arapaho warriors on August 13, killing three and wounding ten.44

On August 11 the disbursed companies of the Tenth Cavalry received word of these raids and were ordered to converge on Elkhorn Creek, a tributary of the Saline. The following day, Sternberg requested and was granted seven days’ leave. Records do not indicate why Sternberg, at an apparently critical moment, took leave or where he went. This movement would bring Sternberg close to his ranch. Possibly he felt he could make a short detour to visit his parents, reassure himself they were safe, and then rejoin his command. Five days later, however, he encountered Lieutenant Colonel Sully and received “verbal orders” to “accompany him to his camp on Elkhorn Creek.” On August 20 Sternberg accompanied Sully to Fort Harker. Sternberg’s actions and the discussions that occurred with Sully and presumably his medical staff were not recorded. On August 22 Sternberg rejoined his command upon its arrival at Elkhorn Creek.45

Once again the Indians eluded the Tenth Cavalry on the Elkhorn and continued to do so for the remainder of the month. Frustrated, General Sheridan directed the Tenth Cavalry to turn in all excess equipment in preparation for a rapid pursuit of the Indians. James B. “Wild Bill” Hickok and Buffalo Bill Cody guided the cavalry southwest to the headwaters of Walnut Creek. On September 4 the expedition followed a fresh Indian trail that Hickok had located. Members soon discovered an Indian burial party who had just placed the remains of one of their tribe, wrapped in buffalo robes, in the notch of a walnut tree. According to Captain George Armes, Sternberg was “very anxious” to have this trophy for the Smithsonian Institution, although “picking up dead Indians was not considered in the program.” The moment the burial party departed, Sternberg commandeered a wagon to the tree, secured his prize, and shipped it off to Washington via Hays City.46

On September 7 Lieutenant Colonel Sully led nine companies of the Seventh Cavalry and three companies of the Third Infantry into Indian Territory south of the North Canadian River. This expedition engaged Cheyennes on September 11 and 13. On the morning of September 12 Major Alfred Gibbs and an escort from Fort Dodge arrived at Major Kidd’s camp on Walnut Creek and ordered the troops to Fort Dodge immediately.47

General Sheridan had determined to strike the Indians in their winter camps when ponies would be at their weakest, supplies limited, and movement difficult. He developed a three-pronged attack on the Indians in the Canadian and Washita River valleys. One column would proceed from Fort Bascom, New Mexico, up the South Canadian River; another, from Fort Lyon, Colorado, would move toward the Antelope Hills and Red River; the third, and strongest, would


45. Muster Rolls, Tenth Cavalry; Special Order No. 57, August 12, 1868, Papers of Medical Officers, Sternberg, Quotations in Sternberg to Surgeon General Barnes, August 22, 1868, ibid.

46. Leckie, The Military Conquest of the Southern Plains, 74; Muster Rolls, Tenth Cavalry; John Burke, Buffalo Bill, the Noblest Whiteskin (New York: G. P. Putnam’s Sons, 1973), 49; quote in Armes, Ups and Downs of an Army Officer, 273–74; for the complete report, see George A. Otis to Sternberg, October 15, 1868, Sternberg Papers.

march south from Fort Dodge into Indian Territory and establish a supply depot there.⁴⁸

At Fort Dodge, Sternberg was relieved of duty with the Tenth Cavalry and appointed chief surgeon for the third column of Sheridan’s forces under Sully’s command. This consisted of eleven troops of Lieutenant Colonel George A. Custer’s Seventh Cavalry, a composite battalion of five infantry companies commanded by Major John Page, and Colonel Samuel J. Crawford’s Nineteenth Kansas Volunteers. Sternberg readied enough medical supplies and equipment to support eleven hundred men for the winter. He recognized that he and three additional medical officers—Captain Elias J. Marsh with the infantry battalion, assistant surgeon Captain Henry Lippincott, and acting assistant surgeon William Renick with the Seventh Cavalry—would be insufficient for the medical support required by the troops and supply trains that would be moving between Sully’s base of operations and Fort Dodge, the rear area supply depot. On November 7 Sternberg lobbied for two more physicians but was granted only one—acting assistant surgeon William S. Forwood—and an extra hospital steward.⁴⁹

Clearly Sternberg was cognizant of the strategic and tactical medical requirements of the expedition. Nevertheless, two days prior to this he sent a letter to the Army Medical Museum suggesting that he be ordered to Washington to unpack the specimens he sent earlier in the fall. Surgeon General Barnes politely denied this odd request.⁵⁰


⁵⁰. George A. Otis to Sternberg, November 24, 1868, Curatorial Records: Letter Books of the Curators, National Museum of Health and Medicine, Armed Forces Institute of Pathology, Washington, D.C. (here-
On November 12, 1868, Sully's troops and 450 wagons departed their camp near Fort Dodge. Six days and one hundred miles later Sully directed that Camp Supply be established at the confluence of Wolf and Beaver Creeks south of the North Canadian River. This camp would serve as a supply point for winter operations. Infantarmen immediately began digging wells and constructing a stockade, winter quarters, and storehouses. General Sheridan arrived on the evening of November 21 in a snowstorm that had brought work at Camp Supply to a halt. Sheridan's staff included a surgeon, Captain Morris Asch, who now brought the post's medical contingent up to six physicians: Sternberg, Forwood, Lippincott, Renick, Marsh, and Asch.21

As Sheridan's party approached Camp Supply they had spied Indians moving along a trail toward the Washita River. On November 23 Sheridan dispatched Custer's troopers in a "blinding snowstorm" to the valley of the Washita. If Custer engaged the Indians, wounded troopers could be descending on the post soon. With this in mind the medical staff, under Sternberg's direction, quickly erected a "large number of hospital tents." By December 1 a field hospital was in place, "consisting of four hospital tents arranged as two wards with a double chimney of stone between them, one hospital tent as dispensary, and two wall tents for a kitchen."22

While the men of Camp Supply enjoyed a bountiful Thanksgiving Day dinner, Custer found the village of Chief Black Kettle on the Washita River late on the evening of November 26. Under cover of darkness his troops surrounded the village and just before dawn launched a lightning attack that reduced it to ashes. Unfortunately, the carnage included women and children. The Seventh Cavalry validated Sheridan's concept of winter warfare, but Custer erred in not performing any reconnaissance of the countryside before the attack. Hundreds of Arapaho, Kiowa, Cheyenne, and Comanche warriors soon descended on Custer from their camps farther up the river valley. An attack on the well-prepared warriors would be foolhardy and a deliberate retreat would be disastrous. Flushed with victory, Custer drew his companies into formation and proceeded confidently down the Washita valley until darkness allowed him to countermarch out of the valley and return to Camp Supply.23

When the Seventh Cavalry arrived at Camp Supply on the afternoon of December 1 it brought plenty of grist for the medical mill. Two officers and seventeen men had been killed, and three officers and eleven men wounded. Field hospital records state that of the soldiers wounded, ten were from gunshot and three from arrows, and that Second Lieutenant T. J. Marsh was "slightly" wounded.24 Most severely wounded was Captain Albert Barnitz.

Shot through the flank at close range, Barnitz was pronounced in mortal condition on the field by Lippincott and Renick, who assumed his intestine had been pierced. Lippincott and Renick were both in extreme pain from snow blindness (an inflammation of the membrane over the eye caused by sunlight reflecting off snow) as they treated battle casualties. Lippincott gave Lieutenant Edward S. Godfrey a


55. Keim, Sheridan's Troopers on the Borders, 121, 124–25; Record of Medical History, Supply, 2, 3; Custer, My Life on the Plains, 250.
“very pessimistic” prognosis of Barnitz’s condition and instructed Godfrey to tell Barnitz that his condition was hopeless unless he remained perfectly quiet. Barnitz replied, “Oh, hell! They think because my extremities are cold I am going to die, but if I could get warm I’m sure I’ll be all right. These blankets and robes are so heavy I can hardly breathe.”

Once in the hospital at Camp Supply, Sternberg examined Barnitz and “found him very much fatigued by the journey, but having a good pulse, and presenting no bad symptoms.” The bullet had entered just below the twelfth rib, fracturing it and traveling obliquely toward the spine, exiting close to the hipbone. From the entry wound bulged a large mass of omentum. Sternberg reported, “On the 8th I removed the protruding mass of omentum. I commenced the operation with a wire ecraseur, but before it was completed the loop of wire broke, and I severed a small portion which was not yet cut through, with scissors. . . . December 12th the [Brevet] Colonel is able to sit up an hour or two at a time, has a good appetite, sleeps well, and may be considered out of all danger.” Of course Sternberg preserved the omentum specimen and sent it to the Army Medical Museum. Of the fifty-three Indian captives, mostly women and children, several were wounded. Fearful yet desperate for care, they stoically submitted to treatment by Sternberg and his colleagues.

Sternberg was relieved from duty with the expedition and assigned as post surgeon at Camp Supply on December 7. He spent the winter administering medical activities at the depot. Weather and Indian activity permitting, he collected speci-


57. Evan S. Connell, Son of the Morning Star (San Francisco: North Point Press, 1984), 185; quotes in Utley, Life in Custer’s Cavalry, 257–36; George A. Otis to Sternberg, January 4, 1869, Curatorial Records; Keim, Sheridan’s Troopers on the Borders, 124, 125. The greater omentum is a fold of peritoneal membrane passing from the greater curvature of the stomach to the transverse portion of the large intestine and hanging like an apron in front of the intestines. Barnitz recovered and was medically retired from the army in June 1870. Utley, Life in Custer’s Cavalry, 247; Connell, Son of the Morning Star, 186.
mens of animals, birds, and Indian paraphernalia for the Smithsonian Institution and the Army Medical Museum. As the winter campaign came to a close in March, he was relieved from duty and posted to Fort Hays for reassignment. Sternberg obtained verbal permission from General Sheridan to serve at Fort Harker, probably to be near his family, until his permanent orders were issued. In April 1869 Sternberg was assigned to Fort Riley as an attending surgeon. This fourteen-month tour would prove to be a stable one, uninterrupted by epidemics or field service. Professional and personal interests that had remained dormant while he was in the field once again were explored; hobbies such as photography, botany, and gardening resumed; and correspondence intensified with Martha L. Pattison of Indianapolis, who became the second Mrs. George Sternberg on September 1, 1869. Afterward, although entitled to main post quarters, the Sternbergs gave these to a line officer who was in poor health, and they moved into the old sutler’s house. This home was much larger than the two required, but it provided rooms for a laboratory and workshop.

Sternberg’s inquisitive, analytical mind found pleasure in all things scientific. He enjoyed tinkering with the latest mechanical devices, invented an anemometer, and an electromagnetic regulator, which was patented, for hot air furnace dampers to automatically control building temperatures. His brother officer, Captain Joseph J. Woodward, had pioneered techniques in microscopic photography, more commonly known as photomicrography, at the Army Medical Museum before the end of the Civil War. Sternberg converted part of his spacious quarters into a laboratory soon after moving in, and following Woodward’s lead he began making photomicrographs.

George also had an insatiable appetite for medical and scientific literature. Of particular interest were articles in the Medical Record, American Journal of Medical Sciences, and other journals concerning the recent work of Dr. Joseph Lister on the antiseptic treatment of fractures and abscesses. Lister’s antiseptic method of treatment consisted of placing a cotton- lint pledget impregnated with carbolic acid directly on the wound and applying a dressing over it. This, Lister found, reduced secondary wound infections. Lister attributed the infections, which frequently developed in open fractures,

to minute particles suspended in it [the air], which are the germs of various low forms of life, long since revealed by the microscope, and regarded as merely accidental concomitants of putrescence, but now shown by Pasteur to be its essential cause, resolving the complex organic compounds into substances of simpler chemical constitution, just as the yeast plant converts sugar into alcohol and carbonic acid.

Sternberg realized that if Louis Pasteur’s hypothesis were correct and if carbolic acid prohibited the growth of these “germs,” then the disinfecting efforts he and his colleagues had made at Fort Harker in the summer of 1867 might have been worthwhile. Furthermore, if germs in the air produced wound infections and could be seen through the microscope, then could not the germs or poison of cholera reside there...

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58. Special Field Orders No. 65, December 7, 1866, Sternberg Papers, George A. Otis to Sternberg, May 15, 1869, ibid.; Special Orders No. 23, March 2, 1869, ibid.; Special Orders No. 54, April 17, 1869, ibid.; Sternberg to Surgeon General’s Office, March 31, 1869; Papers of Medical Officers, Sternberg; Gibson, Soldier in White, 39.

thought to be mortally wounded during the Battle of the Washita. Captain Albert Barnitz fully recovered under the medical care of Dr. Sternberg.61

as well, or possibly in the dejections of cholera victims, and could they also be seen microscopically?60

To find and photograph these lower life forms Sternberg needed a microscope. However, the pragmatic and parsimonious Army Medical Department saw little gain in supporting the research efforts of medical officers. With his request denied, Sternberg purchased his own microscope and other equipment required for his laboratory. Once reacquainted with the microscope, he began producing photomicrographs, presumably using botanical specimens as subjects. What initial experiments Sternberg performed in what would become known as the field of bacteriology are unknown. Without the assistance of stains, oil-immersion lenses, or even a procedural manual, Sternberg pored over his microscope with enthusiasm and zeal.61

Sternberg was reassigned to Fort Columbus in New York Harbor in late June 1870. Four years on the Kansas frontier had brought Sternberg success, failure, and personal tragedy. His strong character and mental and physical resilience allowed Sternberg to accept achievements with humility and to weather adversity with optimism. He appreciated the discipline and service ethic of the military, and while the medical department did not actively support his vision of scientific research, it did provide an income and time for him to pursue these interests on his own. Sternberg's natural scientific curiosity, his excellent medical education, and his experiences with infectious diseases, both during the Civil War and on the Plains, prepared him to accept the ideas that would become the germ theory of disease causation and establish the field of bacteriology. Kansas was the crucible that matured him and set the course of his career for the next thirty-one years.62


62. Headquarters Department of the East, Special Orders No. 122 June 21, 1870, Sternberg Papers.