

by Michael W. Vogt

could hear them give up the ghost," Christian Larson recalled, looking back at his days in a hospital tent in Jacksonville, Florida. "Other soldiers died all around me."

Larson, a private in the 49th Iowa Volunteer Infantry Regiment, was stricken with typhoid fever during the summer of 1898 while garrisoned in Camp Cuba Libre in Florida. His recollections are emblematic of the Spanish-American War, in which more American soldiers died of disease—almost 90 percent of all deaths—than of any other cause.

Larson and tens of thousands of other soldiers were the unknowing victims of not only disease but also army short-sightedness. In the decades before the war, the U.S. Army Medical Department had received minimum priority for funding or improvements. There were very few specialized army schools for medical training. Isolated in garrisons across the nation, medical staff seldom shared clinical experiences. Most state national guard organizations had no medical units. There was no U.S. Army Nurse Corps until 1901. Medical officers lacked command authority over units in

the field and were limited to offering suggestions and recommendations to line officers.

This was the situation when the United States declared war against Spain on April 25, 1898, culminating a five-year period of declining relations over Spanish colonial policy in Cuba exacerbated by the explosion of the U.S. battleship Maine in Havana Harbor on February 15. Assisting the War Department's hastily prepared mobilization plans, Congress authorized the use of National Guard troops for campaigns in Cuba, Puerto Rico, and the Philippines. Preparing for the invasion of Cuba, the War Department concentrated the majority of its trained medical personnel and supplies within the ranks of the Regular Army's V Corps, assembling at Tampa, Florida. This meant that the volunteer training camps near Jacksonville and other locations, comprising soldiers from state National Guard units, suffered a shortage of trained personnel and basic supplies during the first four months of the war.

To fill this breach, the Army Medical Department hired civilian contract surgeons, encouraged medical students to enlist, and detailed men from the infantry to serve as nurses, hospital stewards, and ambulance drivers. Approximately 20 soldiers were detailed from each regiment to serve at the division hospital. By late August,

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Hospital Corps personnel—of whom only a fraction possessed suitable training—numbered fewer than 6,000 for a total army of more than 275,000 volunteers and regulars, amounting to one for every 46 men.

In addition to the untrained soldiers detailed to the hospitals, the small cadre of suitably trained Hospital Corps personnel suffered from the limitations of contemporary medical knowledge. Although medical practitioners had substituted the germ theory for the miasmatic theory of disease in the 1890s, at the time of the Spanish-American War they still "lacked both the knowledge and the means to take decisive action to limit infectious diseases," according to historian Gerald Grob. As a result, the contagion paths of typhoid (bacteria) and yellow fever (virus) were unknown. Misdiagnoses meant that infected soldiers, who should have been quarantined, spread disease to others. (Quarantines would not have stopped the malaria parasite, however, which is transferred by female mosquitoes.)

Moreover, the growth of the volunteer army that summer burdened medical personnel who were not accustomed to managing regimental or division-sized hospitals. "The average National Guard surgeon is a faithful doctor, with more than average professional ability," noted Lt. Colonel Nicholas Senn, Chief SurSoldiers in Iowa's 49th Regiment suffered from miserable weather and vastly inadequate sanitation at Camp Cuba Libre in Florida, while they waited impatiently to be sent to Cuba. Above: Camp Columbia near Havana.

geon of the U.S. Volunteers, "but, with few exceptions, [he lacked] the necessary military training in performing satisfactorily his administrative duties."

Hospitals at each camp were chronically short of basic supplies until September. "There were no case record-sheets, and in fact there was no paper on which to keep temperature notes and there was an inadequate supply of clinical thermometers," complained Major James Fred Clarke, regimental surgeon for the 49th Iowa Volunteer Infantry. "Bath tubs, ice-caps, a microscope, eye and ear instruments—all these were lacking. There were not enough bed-pans for ordinary use."

Clarke later elaborated on a critical difference between the physicians in the volunteer army and those in the regular army, which contributed to the breakdown of medical care at the assembly camps: "The regular medical officer was an educated gentleman . . . but he had, in many instances, for years been stationed at small healthful army posts, where he had little medi-

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cal or surgical experience. He had for years been accustomed to routine army methods, until he saw but one mode of procedure. An instance in point: In the early history of Camp Cuba Libre an emergency hospital operation became necessary. The regular surgeon in charge said, 'We must first telegraph and get the Surgeon General's permission to operate.' The regular surgeon was theoretical, and believed his reports of more importance than the treatment of the patient.

"The volunteer medical officer, on the other hand, was from an active practice," Clarke continued. "He was accustomed to rapid, independent action [but] failed miserably to keep his records and make reports. He had too little regard for discipline and . . . 'red tape.' He fumed and fretted at delays and scandalized the service by demanding of Generals what Colonels would not give SHSI (DES MOINES) him. He believed that the sick and not the records should have his first consideration."

might not be exhibiting symptoms) passed fecal matter and urine into latrines. The sanitary measures in Camp Cuba Libre were abysmal. Flies carried germs from open latrines to unscreened kitchens. Preparing and handling foods with unwashed hands, dipping tin drinking cups into open barrels of water, gathering up contaminated bedclothes and linens barehanded-all these practices contributed to the propagation of typhoid bacteria. Ten to fifteen thousand draft animals deposited tons of manure around camp, furnishing yet another habitat for flies and maggots.

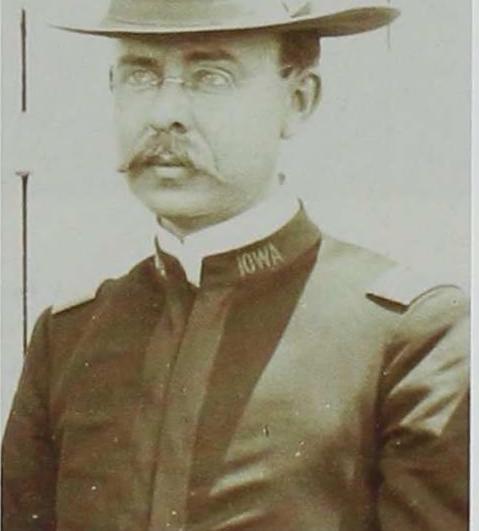
The spread of germs was compounded by delay and carelessness in removing wastes from the latrines (referred to in period literature as "sinks"). Although some were privy pits, many were essentially wooden

barrels cut in half, with rope handles; these were scattered about camp. Second Assistant Surgeon Lieutenant Edward L. Martindale commented that "these tubs sometimes overflowed and the contents slopped out." According to Clarke, the regimental surgeon, "When full [the barrels] were loaded on wagons & hauled away . . . [and the] jolting along the road spilled the night soil." Even though the mess tents and latrines were located beyond the company streets, some "scavenger wagons" passed within 15 feet of the kitchens. Company and field grade officers looked with disdain upon recommendations for camp sanitation and routinely ignored or dismissed the advice of Medical Department personnel during the first weeks at camp. Not until July 3 were the latrines moved farther from the 49th Infantry's bivouac area. But army engineers faced another dilemma: At night, lazy or tired soldiers avoided walking to latrines by defecating and urinating in and near company streets, despite the warnings from officers and surgeons and the risk of days in the guardhouse (though punishments were rare). Placing latrines too far away from camp reduced their use. The indifference and negligence of some soldiers made them also culpable in turning their camps into fertile breeding grounds for germs.

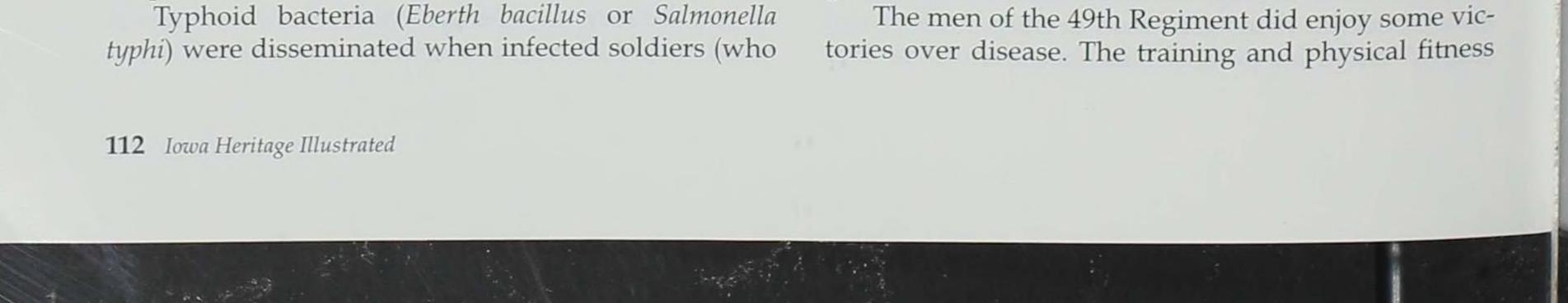
fter two-and-a-half months of training at Camp Mc-Kinley in Des Moines, the 49th Iowa Volunteer Infantry Regiment was sent to Camp Cuba Libre near Jacksonville. Within only three weeks of their arrival, the men of the 49th faced their first lethal enemy: typhoid.

Typhoid fever was the primary killer in U.S. troop assembly areas from May through September of 1898. The bacteria flourished in congested areas with poor sanitation, and the assembly camps provided just those conditions. Thousands of men were concentrated in the camps-Camp Cuba Libre alone peaked at 19,156 in late June. Tents were crowded and

billeted closely together: a 7 x 7-foot tent held seven soldiers; tents 9 x 9 and 12 x 14 quartered nine to twelve men. "When a soldier was taken sick in the regiment," Clarke recalled, "he had to lie in his quarters until the regimental surgeon determined whether his sickness was of sufficient gravity to make hospital treatment necessary. [If so,] an ambulance was ordered and in from one to six hours the sick man was carried to the hospital."



Regimental surgeon James Fred Clarke: "The currents in the military channels are slow moving-so slow moving as at times to seem completely stagnant."





Eventually screening was added to tents, protecting ailing soldiers from the incessant flies and mosquitoes that thrived in camp.

stressed by Brigadier General James Rush Lincoln when the regiment was still at Camp McKinley in Des Moines paid dividends at Camp Cuba Libre. As Sergeant James E. Whipple of Company G noted: "The records will show that the men who had the benefit of the training at Camp McKinley withstood the fearful scourge of typhoid, that invaded the camps at Jacksonville, better than those who joined the regiment after its removal to the south." Hospital Corps attendant William F. Thorp thought that "the food dealt out to the sick is of the best quality. A great variety of dishes are served to those who can not stand rough diet-chicken broth, beef tea, the best of fruit and numerous other delicacies." Some men avoided exposure to typhoid fever by mere chance. Company M soldiers, detailed to rifle range duty away from camp from July 27 through August 14, experienced the lowest incidence of typhoid of all the companies.

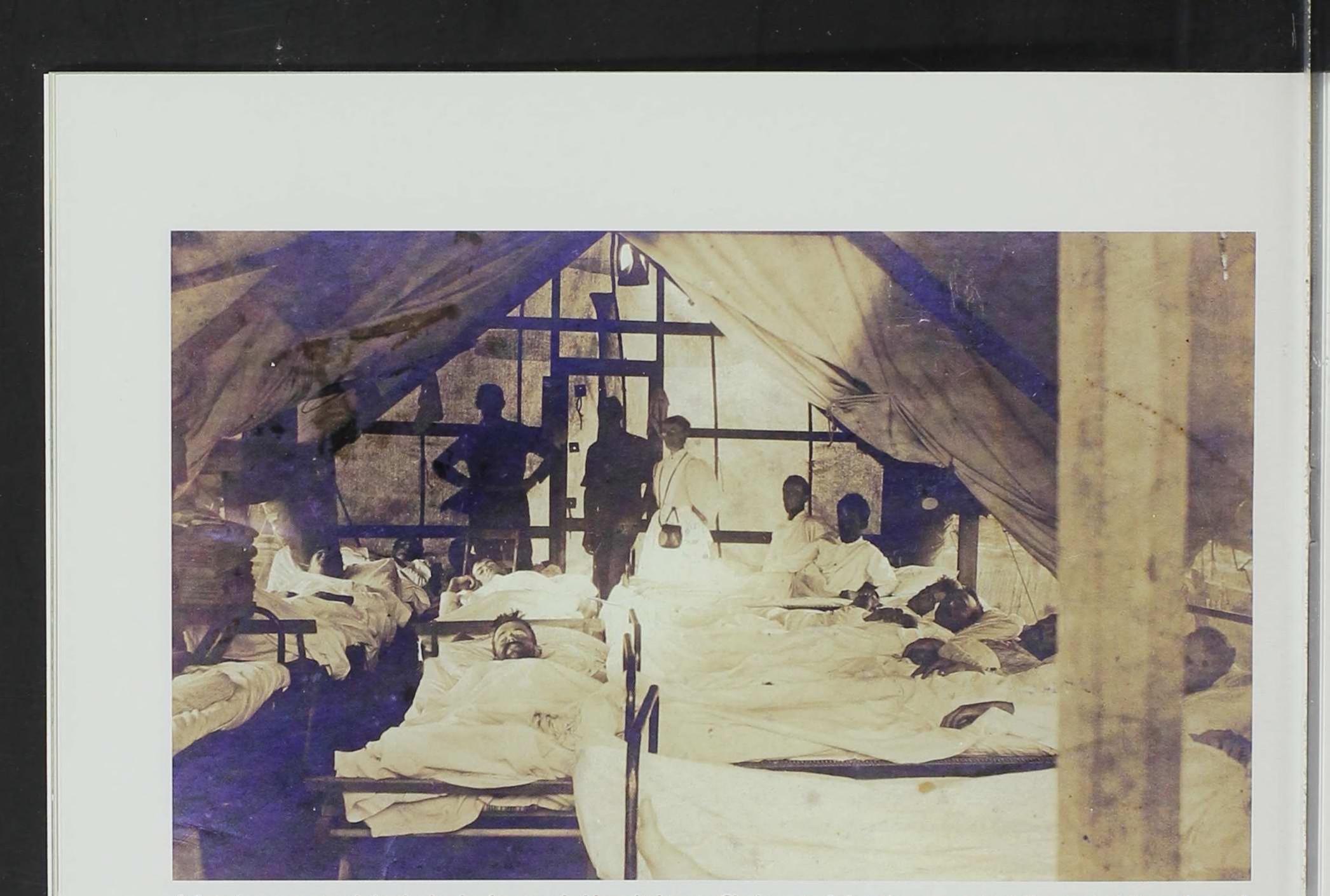
early every day at Camp Cuba Libre, the temperature exceeded 90 degrees in the shade (what little shade there was). Heavy rains—17 inches in nine weeks—mildewed and weakened the tents. Contaminated water supplies caused diarrhea and dysentery, and mosquitoes spread yellow fever, sending dozens of Iowa soldiers to the division hospital each week. The number of deaths from disease grew during August.

Two letters from Private Dan Leatherman demonstrate the rapid spread of disease in his company. On August 10 he wrote home: "Co. E are all enjoying good health as usual not a man sick and every one happy and contented with the prospect of going to the front." A month later, Leatherman was caring for sick soldiers in their tent because the division hospital was filled to capacity. "We are having a great deal of sickness in our company . . . I think we are having more than our share," he wrote. "We have had three deaths and that is more than any other company." The following day civilian John O'Brian visiting from Independence wrote home: "The boys certainly are very much discouraged, there is now but 38 men, out of the 106 men [originally] fit for duty."

Losing a fellow soldier from a typically close-knit company dealt a particularly demoralizing blow. With the news of the U.S. peace protocol signed with Spain on August 12, the men's spirits fell even more as they realized their chances of experiencing combat in Cuba were unlikely.

After watching their friends suffer for weeks from diarrhea, fever, abdominal pain, skin rash, and bouts of delirium, many sought escape from the dire situation by venting their frustration to hometown editors, fam-





A female nurse stands in the back of a crowded hospital tent. Clarke noted that the nurses, initially rejected, "transformed the hospital...and it resulted in the saving of lives."

ily and friends back home, and the governor's office. Hoping for a rapid departure so as to avoid typhoid fever, some padded their letters with exaggerated accounts of deplorable conditions, minimal rations, excessive deaths from disease, and inhumane treatment by their officers. These letters, when printed in Iowa newspapers, precipitated correspondence and petitions from family and friends to Governor Leslie Shaw, requesting that he, as commander in chief of the Iowa National Guard, recall the 49th Regiment to Iowa.

On August 18, reassigned to the 2nd Brigade, 2nd Division, the 49th Regiment moved camp three miles to a new location on higher ground at Panama Park. The weather improved and conditions were slightly better, but the incidence of disease did not decrease. "We had already been hit with typhoid," Company F Private Herbert L. Wildey, of Anamosa, recalled: "It got worse here. The whole regiment had severe diarrhea. We had so little control of the bowels that the bushes leading to the latrines would have I would guess as many as two dozen pairs of underdrawers thrown on them by men

peration of some soldiers to return home persisted. One soldier wrote to the governor: "If there was a caucus made of our Reg. [there] would be at least 90 percent of them vote to go home but our officers say they will put us in the Guard house if we undertake any such thing and you know the shoulder straps can do the talking." In a six-page letter to the governor, T. M. Fee, a district court judge in Centerville, argued that the troops should be allowed to vote on their return to Iowa rather than deploying to the Caribbean. Four days later he followed up with seven more pages reiterating the same points. The sentiments expressed by I. N. Meyers, a banker in Reinbeck, echoed in dozens of letters to the governor requesting furloughs for the soldiers to return to Iowa: "I believe it would save some of the soldiers from an early grave." Mrs. M. J. Campbell of Sibley, whose son served with the 49th, pleaded: "In the name of humanity, in the name of our own fair state, and in [the] heart[s] breaking [in] Fathers and Mothers of Iowa I implore [that] you will demand the 49th Reg't of Iowa Vol. be sent home at once."

who could not reach the latrine in time." The loss of morale and unit cohesion, and the des 114 Iowa Heritage Illustrated

telegram to Shaw: "We fear life is being unnecessarily sacrificed." At a mass assemblage at Waukon's Armory Hall, citizens unanimously adopted resolutions asking for the furlough or discharge of the regiment and sent copies to Governor Shaw, President McKinley, Secretary of War Russell A. Alger, Secretary of Agriculture James Wilson (from Iowa), and Iowa Senators William Allison and John Gear. Citizens in Marshalltown petitioned the governor that the soldiers not be sent to Cuba "to die of fever without care."

Not all of the correspondence was critical. A telegram arrived at the state capitol on September 7 from the "enlisted men" of Companies A and C requesting of the governor: "Do not interfere with war department plans on our account we are ready to go where ordered." Twenty-nine-year-old Company K First Sergeant Gustav W. Reichmann of Toledo wrote to his brother: "If this regiment goes to Cuba I will be satisfied and happy. I came to serve two years and if Uncle Sam sends me to Hell I am going." He warned, "Don't take stock in the stories that the boys are not get[ting] anything to eat, or that we 'have from 6 to 9 deaths in the regiment everyday'—it's all a D___ lie. . . . Some of the stories that are written home . . . are too confounded outrageous to laugh at." Reporting that the men were treated well by their officers, he confided to his brother: "You know how it is to have a few homesick babies. They make life miserable for them selves and all that are around them. Iowa ought to send them a nursing bottle."

bert (a former legislator and trustee of the Soldiers' Orphans' Home) and F. W. Powers (a Reinbeck physician) to "examine and report on the condition of the Iowa troops" of the 49th Regiment. The two men traveled to the camp at Panama Park and toured the bivouac areas, camp hospitals, and mess tents. They inspected the sanitation practices and latrine facilities. In mid-September they delivered their 12-page report to the governor's office.

The report found the men of the 49th Regiment with a "full supply of tents" and determined that each soldier was well equipped. There were "no unpleasant odors about the camp" and the "camp sinks" (latrines) had deep vaults dug to receive waste material. The commissioners noted the constant presence of a sentry to ensure the covering of waste after each latrine use. Camp latrines were sprinkled with lime and new pits dug as required. The open-plank drains that channeled waste materials through the camp were disinfected daily with chloride of lime. Shower baths were mandatory every other day for all soldiers fit for duty. The report also spoke to the feelings of the men regarding further service: "We believe that both the officers and men of the 49th prefer to go home should their services not be needed, but they enlisted in the cause from patriotic motives and will not shirk from any service required of diligent and faithful servants." The authors of the report fully understood the importance of mail from home to boost morale: "We com-

In August, responding to the letters, telegrams, and editorials, Governor Shaw appointed Henry Eg-

Ambulances conveyed sick soldiers from their tents to the regimental hospital. Sometimes soldiers waited for hours.



mend [the troops'] patriotic stand, and if the good citizens of our beloved State would encourage the boys by letters of good cheer they would thereby lend valuable assistance in relieving what little discontent and homesickness that lurks about the camp." The inspectors furthermore warned: "The camp liar is a disgrace to his comrades and a menace to the army, and should not be encouraged at home or tolerated in the field."

On the subject of disease in camp the commissioners noted correctly that typhoid fever caused the majority of deaths and referenced a morning report for September 12 indicating that 95 percent of the regiment's soldiers admitted to the hospitals were ill from typhoid fever. But they incorrectly reported a higher death rate among officers. While conceding that "a small proportion" of soldiers exhibited weight loss resulting from typhoid, they countered the many letters sent to the governor and stories printed in Iowa newspapers by tersely stating that "we feel constrained to say that the stories circulating throughout Iowa as to their being emaciated or walking skeletons [have] not a scintilla of truth and should not be allowed to circulate further without a flat contradiction." The report also brought into perspective that, although the majority of sickness resulted from typhoid fever, many soldiers were hospitalized for reasons not incident to the environment and conditions in camp. Nonetheless, the soldiers stricken ill from measles, rheumatism, malaria, appendicitis, hernias, and other ailments contributed to the overall total of men reported as sick. Other soldiers remained in quarters diagnosed with fistulas, ephemeral fever, malarial fever, pleurisy, diarrhea, homesickness, lumbago, sprained knees, abscesses, and acute gastritis. The hospital inspections revealed that most of the seriously ill Iowa soldiers received care in the woodfloored 2nd Division Hospital or the 49th Regimental hospital tents. Electric fans and fly screens added to the soldiers' comfort. Basic supplies, absent or in short supply during the early weeks of the typhoid epidemic, were available in sufficient quantities by September. Adequate numbers of nurses (including 17 women from Iowa) and hospital stewards worked 12-hour shifts. Seriously ill patients were assigned additional nurses and assistants. (Nevertheless, in at least one case, the mother of a stricken soldier, Mrs. W. J. Miller of Independence, traveled to the 2nd Division Hospital in October to personally care for her son, Private Guy E. Miller. Suffering from typhoid since September 1, he would receive a medical discharge in February 1899.)

reached these conclusions: Several of the regiment's men were ill with measles before arriving at Camp Cuba Libra and thereafter infected others. Wet ground and poor-quality tents contributed to the spread of disease. The troops were negligent in practicing basic camp sanitation. Monotony and routine led to less time spent policing campgrounds. Soldiers drank water of questionable quality from shallow wells and public lunch counters. Many soldiers nursed others while ill themselves, unknowingly spreading disease throughout hospital areas. A noticeable drop in morale and spirit following the signing of the peace protocol led to increased likelihood of susceptibility to infection. All of the above conditions had made the men easy victims.

The commissioners' report was incorrect in assigning partial blame for the persistence of disease to damp conditions, tent quality, and troop melancholy rather than to bacteria and viruses. But it correctly identified inadequate sanitation practices and contaminated water as the main culprits for the rapid spread of disease. The report also faulted the Iowa press as irresponsible for its negative effect on public opinion regarding the conditions prevalent at Camp Cuba Libre. Furthermore, it dismissed the notion that a majority of the soldiers were incapacitated by disease and desired discharge and transfer back to Iowa.

Although the inspection occurred at the peak of the typhoid epidemic, it also coincided with the Medical and Quartermaster departments' delivery, at last, of adequate supplies. Therefore the conditions witnessed by the commissioners were much improved compared to what they would have seen in the prior two months.

Overall, the debilitating conditions faced by the 49th from June through September typified those faced by soldiers in other assembly camps. Individual regiments finally initiated more hygienic measures. Sick soldiers were more quickly moved from their quarters to the hospital. On September 20, Regimental Special Order 22 charged each company officer with inspecting the cleaning of kitchens and preparing of meals, scrubbing and whitewashing of tables and mess areas, and washing and scalding of eating utensils and dishes. This was followed on October 4 by orders mandating the washing of all blankets every day, the immediate burning of all old mattresses followed by replacement with new ones, and a thorough cleaning of all quarters utilizing carbolic acid.

Despite improvements in camp hygiene, supply acquisition, and medical care, the efforts at Camp Cuba

Stating that the sickness at Camp Cuba Libre Libre amounted to too little too late. Typhoid killed 4 could not be attributed to a single cause, the inspectors Iowans in August, 21 in September, and 18 in October.

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The hospital corps of the 49th Iowa regimental hospital. Acclimating to tropical weather was hard for Iowa soldiers.

Overall, before the regiment departed from Jacksonville, typhoid fever had hospitalized well over 600 and killed 43. Most were in their early twenties.

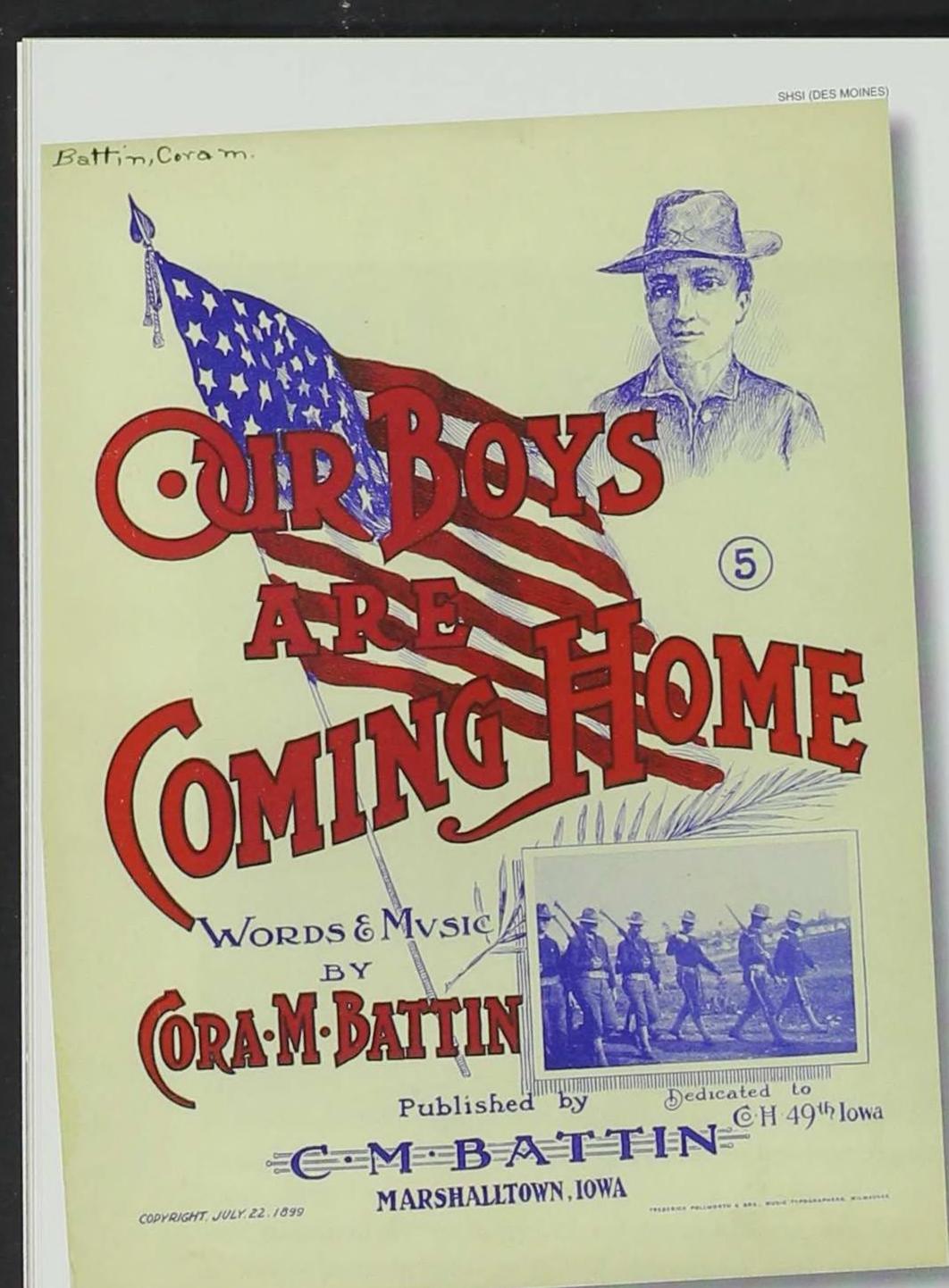
n October 26, the 49th Regiment arrived by train in Savannah, Georgia; from there they would later embark for Cuba. The soldiers set up in Camp Onward and settled into familiar military and leisure time routines, including football and boxing. Troop morale improved; Clarke attributed some of this to "the novelty of the Cuban service to look forward to." Fewer complaints were mailed back to Iowa. "We have two blankets apiece and are not at all overworked," Private Lester Atkinson wrote to his brother on November 3. "Savannah is in every respect a better town than Jacksonville." Rations and water quality proved agreeable to all. The health of the men improved to the point that many Iowa soldiers left camp without a pass on payday and took the Thunderbolt streetcar line into Savannah in order to enjoy the entertainments and libations the downtown had to offer. The move to Savannah and improved sanitation practices corresponded with fewer deaths from typhoid fever. The regiment lost only four men to typhoid compared to the 43 lost at Jacksonville.

Two months later, the troop ship Minnewaska ferried the 49th Regiment to Cuba. The men received a warm welcome from the Cubans upon arriving in Havana on December 23 and while traveling the eight miles to Camp Columbia in the town of Marianao. Their duties while serving in Cuba included military police duty guarding water supplies, former Spanish government property, and surrendered Spanish forts and munitions. Lengthy marches around the Cuban countryside helped to break the monotony of drill and camp life. The regiment participated in the formal ceremonies accompanying the lowering of the Spanish flag and the raising of the American flag over Havana on January 1, 1899. The health of the troops improved as did the variety of available fresh food, including coconuts, bananas, oranges, and other tropical fruits.

The remainder of the regiment's stay in Cuba was uneventful. It completed its assigned duties and departed in early April. After a week in quarantine camps, the Iowans traveled to Savannah, established camp, and awaited the muster-out process on May 13, 1899, and the return home.

After the war, Major Clarke was one of many physicians who authored postwar studies analyzing the causes and spread of disease. In his "Medical History of the 49th Iowa Volunteer Infantry," he willingly ac-

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Left: Dedicated to the 49th Iowa, Company H, the lyrics read: "There's not a coward in the ranks, They're brave men ev'ryone; They've faced so many hardships, But now their duty's done."

cepted partial responsibility for the high disease rate: "There was one great fault of all the doctors. . . . This was the ignorance of the fact that the system of sinks . . . facilitated the spread of disease by flies. . . . The fact was that the attention of the profession had never before been called to this mode of the transmission of typhoid fever in so striking a manner, and it was a sad, severe lesson for us all."

Coupled with the dreadful losses to typhoid and reduced troop strength due to other diseases, studies like Clarke's brought about army-wide reforms in military medical education and vastly improved sanitation in later U.S. wars and military campaigns. These, in turn, significantly reduced losses to disease. Such vital changes were attributed to the critical lessons learned (as Clarke put it) in "those sandy swamps during the terrible summer of 1898." �

Author Michael W. Vogt, a native of Gladbrook, is curator at the Iowa Gold Star Military Museum at Camp Dodge and serves as president of the Iowa Museum Association. He is a history graduate of the University of Northern Iowa.

NOTE ON SOURCES

Christian Larson's quotation, which begins this article, is from the Des Moines Register, Oct. 9, 1978. Sources particular to the 49th Regiment include: Historical and Biographical Souvenir of the 49th Iowa U. S. Volunteer Infantry (Jacksonville: Vance Printing Company, 1898); James E. Whipple, Historical and Biographical Souvenir of the 49th U. S. Volunteer Infantry (Vinton: 1903); Cedar Rapids Sunday Republican, July 3, 1898; J. Fred Clark[e], "Medical History of the Forty-ninth Iowa Volunteer Infantry" (n.p.: 1889); Iowa, Adjutant General's Office, Report of the Adjutant General 1898-1899, vol. 6 (Des Moines: Iowa General Assembly, 1911). Curiously, the regimental history written by Colonel Dows for the adjutant general's report (pp. 419-22) does not mention the Iosses to disease.

For the 49th Regiment's camp inspection by Henry Egbert and F.W. Powers, see "Report on the Condition of the Iowa Troops of the 49th Iowa," Governor's Correspondence, Spanish-American War, State Historical Society of Iowa (Des Moines). Correspondence to Governor Leslie Shaw is also held in Governor's Correspondence, Spanish-American War, State Historical Society of Iowa (Des Moines).

For more correspondence regarding the 49th Regiment, see the papers of Lester Atkinson, John Doolittle, and Gustav Reichmann, all at the State Historical Society of Iowa (Des Moines). The Reichmann Papers also include General Order No. 26, 4 October 1898. See also Special Order 22, 20 September 1898, 49th Iowa Volunteer Infantry Order Book, Companies E-M, vol. 7, Record Group 94, Records of the Adjutant General's Office, National Archives and Records Administration, Washington, D.C.

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In June 2008 the author presented a version of this article at the Missouri Valley History Conference. Annotations for this article are held in the lowa Heritage

Illustration production files, State Historical Society of Iowa (Iowa City).

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