

Brother Against Microbe

By Terry L. Jones

On Oct. 27, 1862, the Confederate cavalry commander Jo Shelby filed a report on his brigade's recent operations in Missouri. The colonel concluded with a sobering assessment of his troopers' physical condition. "Our men, from being so poorly clad, and owing to the excessive duties that they have been compelled to perform, are rapidly becoming unfit for service," he wrote. "Our brigade reports now some 500 sick. We have a great many men without a blanket, overcoat, shoes, or socks." When the brigade was first organized, he went on, it numbered 2,319 men, and "the greater portion were reported for duty until within the last few days. Since this cold spell of weather set in, our reports show but 1,068 men for duty. The increase in sickness in Jeans' and Gordon's regiments is 100 per day."

Colonel Shelby's command was not unique. Measles, mumps, pneumonia, influenza and other maladies often put entire regiments out of action. In August 1861, 645 out of 920 men in the 7th Louisiana suffered an illness serious enough for them to be listed on the regiment's hospital ledger. The Civil War may have been a fight of brother against brother, but it was equally a fight of brother against microbe.

The Union Surgeon General, William A. Hammond, famously claimed the Civil War "was fought at the end of the medical Middle Ages." In 1864, Louis Pasteur had discovered that germs caused diseases, but his breakthrough was not widely accepted at the time, and Joseph Lister did not publish his findings on the use of antiseptics until two years after the Civil War ended. "We operated in our blood-stained and often pus-stained coats," admitted one surgeon, the title given to all military physicians. "We operated with clean hands in a social sense, but they were undisinfected hands." If a surgeon dropped a sponge or instrument on the floor, he said, "It was washed and squeezed in a basin of tap water and used as if it were clean." Surgeons later came to recognize the primitive nature of Civil War medicine, but one Confederate doctor spoke for most when he declared, "We did not do the best we would, but the best we could."

Unlike today, medical training at the time of the Civil War varied greatly. Most of the older physicians had learned their profession through apprenticeship, much as skilled laborers did. Medical schools had become fairly common in the decade before the war, but most had only a two-year course of study, with the second year essentially a refresher course of the first. There was virtually no laboratory training, and the study of anatomy was hampered by the fact that dissection was illegal in some states.

At the time, medical practice was divided into several competing systems. Physicians believed the body had four "humors": blood, yellow bile, black bile and phlegm. Most diseases were thought to be caused by the humors getting out of balance; it was necessary to purge the patient of a particular humor so the body could heal itself. Those who might be described as orthodox physicians practiced "heroic therapy." This included bloodletting and the use of strong drugs and enemas containing toxic agents to remove the harmful humors.

Competing with heroic therapy were various unorthodox systems that believed toxic drugs and bloodletting should be avoided. Homeopathy and the Thomsonian System (also known as botanical medicine) were two of the more popular. The former used minute amounts of drugs to treat an ailment which in large doses actually caused the symptoms of the disease being treated. The latter system used natural herbs to purge the body of specific humors.

Although historical studies of the Civil War often concentrate on the treatment of battlefield wounds, disease caused two out of three deaths. Cramming thousands of men into small areas led to frequent outbreaks of measles, pneumonia and smallpox. Those soldiers from rural areas were especially susceptible to such diseases because they had never been exposed to them, as had soldiers who grew up in overcrowded cities.

Measles nearly wiped out entire regiments early in the war when many soldiers were first exposed. A Mississippi surgeon described his visit to a makeshift hospital during one measles epidemic: "About one hundred sick men crowded in a room sixty by one hundred feet in all stages of measles. The poor boys lying on the hard floor, with only one or two blankets under them, not even straw, and anything they could find for a pillow. Many sick and vomiting, many already showing unmistakable signs of blood poisoning." In that particular epidemic, 204 men died in a single regiment.

Unsanitary living conditions caused such diseases as dysentery, diarrhea, typhoid and cholera. Regulations required men to bathe once a week, but soldiers almost universally ignored that rule. Tons of manure from cows, horses and mules, and the entrails from slaughtered animals, only added to the filth of a typical Civil War encampment. Armies on both sides ordered latrines to be dug and the contents to be covered daily with a fresh layer of dirt, but sometimes little thought was given to their placement. As a result, the slit trenches were frequently dug close to wells or upstream from the source of fresh water. Modest soldiers disliked using the open latrines and simply relieved themselves wherever they found a secluded place.

Dysentery was the single greatest killer of Civil War soldiers. It differed from common diarrhea because it was caused by a bacterial infection that gave a soldier loose and bloody bowels. Both dysentery and diarrhea were commonly called the "flux," "Tennessee Trots" or the "runs," and all Civil War soldiers suffered from them at one time or another. As one surgeon put it, "No matter what else a patient had, he had diarrhea." Bacteria also caused typhoid and cholera. Typhoid was spread by flies that came in contact with feces or contaminated food, while cholera was caused by ingesting tainted food or water.

Malaria and yellow fever added to camp life misery, and both were common in the mosquito-infested Deep South. Malaria, or the "ague," accounted for about 20 percent of all patients treated. A soldier with malaria first developed a high fever called the "shakes," followed by a debilitating weakness that could leave him bedridden for days or even weeks. The symptoms gradually subsided and the man could return to duty, but the fever periodically returned and the process was repeated. Soldiers infected with yellow fever also developed a high temperature, followed by headache and the "black vomit" caused by internal hemorrhaging. Physicians at the time did not know that mosquitoes carried malaria and yellow fever and believed the diseases were caused by harmful swamp fumes, the breath of infected men or camp excrement.

Smallpox was another dreaded disease in Civil War camps, but soldiers were fortunate that a vaccine had been developed that helped prevent widespread epidemics. Unfortunately, the vaccine was primitive and dangerous, and men dreaded being inoculated. Surgeons took a small amount of pus from an infected cow and injected it into a soldier's arm by making a cut through the skin. In describing his regiment's vaccination, a Massachusetts soldier wrote, "Such a wholesale slashing and cutting of arms never was witnessed before. The commanding officer of each company would march up the men, all with bared arms. The doctor would make three or four passes with his knife, cutting through the skin, punch a little of the vaccinating matter into the wound, and the thing was done. The doctors went through the thousand men in about three hours, and the sore arms for ten days afterwards was a sight to behold."

Syphilis and gonorrhea plagued both armies and became such a threat that generals were forced to start regulating prostitution. During the war, 8.2 percent of all Union soldiers contracted some sort of venereal disease, but this reflects only those men who sought medical treatment. Confederate records are incomplete. Few soldiers, however, were hospitalized or died from such infections. Surgeons treated most patients with mercury-based compounds that were applied to the skin. Poke roots, elder berries, sarsaparilla, zinc sulfate, silver nitrate, sassafras and jessamine were also popular

treatments. Often the surgeons never knew what actually worked — whenever the symptoms disappeared they assumed the last treatment had cured the patient.

Soldiers often complained that the treatment surgeons prescribed for diseases was worse than the disease itself. Malaria and other fevers were treated quite effectively with quinine, but it had the severe side effect of loosening one's teeth. Quinine was also used to treat diarrhea and dysentery, as was opium to ease abdominal spasms and pain. Calomel, blue mass (a mixture of mercury, honey and marshmallow plant), strychnine, castor oil, turpentine, silver nitrate and ipecac were popular treatments for dysentery and diarrhea, but they all had extreme side effects. Turpentine could damage the nervous system and kidneys and induce bloody vomiting. Calomel, castor oil and blue mass could cause diarrhea, even though they were used to treat the same condition, and ipecac induced vomiting. Calomel in particular caused explosive diarrhea and projectile vomiting which further dehydrated dysentery patients. Calomel and blue mass were also mercury-based drugs that caused extreme salivation, inflamed gums and loose teeth. Ulcers sometimes formed in the mouth and ate away bone and tissue, causing hideous facial deformities.

Other types of Civil War medical treatment seem almost like medieval torture. Incredibly, some surgeons cauterized the anus to treat dysentery and even the penis to treat venereal disease. Pneumonia patients were frequently bled or had heated mustard plasters placed on their chests to draw out fluid from the lungs. Surgeons treated one soldier's stomach ailment by applying hot bricks to his feet and hot cloths to his stomach. The man wrote home, "Oh such hours of suffering, but the Lord was with me praise his name."

The Union was blessed with ample stocks of medicine, but the Confederates were forced to look for substitutes when the blockade cut off medical supplies from Europe. All across the South, drug manufacturing and research facilities were established to produce medicine and search for viable alternatives. Virtually all drugs at the time came from plants, like quinine from South American tree bark, opium from poppies and turpentine from tree resin. As a result, the Confederates believed they could find substitutes growing naturally in the Southern forests. The bark of dogwood, poplar, blackberry, willow and sweet gum were among the substitutes Confederates tried for quinine. They also planted their own poppies in an attempt to produce opium. Soldiers were even sent into the woods to search for wild onion, garlic, mustard, sassafras, pokeweed, artichoke, pepper grass and dandelion as a citrus substitute to treat scurvy. Such efforts, however, were largely fruitless, and the Confederates had little success in developing medicines from their own resources.

Most soldiers had little respect for surgeons because some became alcoholics from having easy access to medicinal liquor, and some were incompetent because of poor training. Postwar books and movies have only reinforced this stereotype, but it is historically inaccurate: the vast majority of them were dedicated and caring physicians who labored under almost unimaginable conditions.

Indeed, Civil War surgeons had a higher mortality rate than any other military position. They sometimes worked days on end with little or no rest, making them vulnerable to the army of diseases they were treating. Nurses and other hospital workers generally praised the surgeons' dedication, although they often criticized their dictatorial demeanor and sexist sentiments. Confederate nurse Fannie Beers wrote, "I never saw or heard of a more self-sacrificing set of men than the surgeons."

One way to judge the quality of Civil War medicine is to compare it with the care soldiers received in our other wars of the same time period. During the Civil War, at least 185,000 soldiers died in battle and 435,000 died from disease and other noncombat causes, for a ratio of about 1:2. The ratio was approximately 1:7 for the Mexican War and 1:5 for the Spanish-American War. Despite the primitive state of Civil War medicine, it appears the men received the best medical care of any American soldiers of the 19th century.