RAMSEY COUNTY HISTORY

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ON THE COVER: *Minnesota's National Guard regiments mustered into federal service in 1898, at the outbreak of the Spanish-American War, were encamped at the Minnesota State Fairgrounds, renamed Camp Ramsey. Quarters, of course, were makeshift, with most of the troops bedding down in the stock barns. Pictured on the cover are men from Company B of the Thirteenth Minnesota Volunteer Regiment.*

Invalid camp of the Fifteenth Minnesota Regiment on the Minnesota River above Fort Snelling.

Encamped at Fairgrounds, Minnesota Troops Fight

Typhoid Fever Epidemic of 1898

BY HERBERT F. R. PLASS, M.D.

"The wife of Delearces, who dwelt on the island of Thasos, was seized with an acute and shivering fever. She wrapped herself in her bedclothes, was silent, fumbling and sleepless, laughed and cried and talked incoherently. On the fourteenth day of her illness her breathing was rare, large spaced, and again hurried. On the twentieth day she became composed and voiceless, and on the next day she died."—Hippocrates.

Today, few physicians under fifty years of age would recognize the classic description of typhoid fever from his own experience, but older men who once faced wards full of patients with typhoid can admire the economy and accuracy of this description of 2,000 years ago.

Typhoid comes from the Greek *typhos*, meaning cloudy, and applies to the cloudy mental condition of the patient. The disappearance of the scourge from the United States represents application of medical knowledge by government at the municipal level, through sanitary engineers backed up by statutes.

Sixty-eight years ago, hundreds of Minnesota men, mustered into service for the Spanish-American War, did not have the

ABOUT THE AUTHOR: Dr. Plass, a native of New Jersey, is a specialist in internal medicine. Since 1946 he has been in private practice in Minneapolis. He is a 1939 graduate of Harvard Medical School. During World War II, he served as a flight surgeon with the United States Army Air Corps in North Africa, Sicily and Italy. He has published 20 papers in medical journals. Always interested in history, this is his first excursion into writing medical history for the layman.

benefit of this latter-day knowledge combined with medical and municipal cooperation.

The result was the "extraordinary typhoid fever epidemic" of 1898 which felled, in inexorably increasing numbers, the men of the Twelfth, Fourteenth and Fifteenth Minnesota Infantry Regiments. There were a number of villains in this outbreak of a disease which was the scourge of the Civil War armies and which for many years afflicted, with almost monotonous regularity, civilian populations, as well, during the warm months of the year.

CHIEF AMONG THEM were contaminated water supplies, as controversial a problem in 1898 as the pollution of lakes and streams is today. There were the problems of adequate sanitation for men encamped under make-shift conditions, and of enforcing discipline concerning sanitation. As always, ignorance and failure to observe the rules was the tragic cause of trouble.

There was an information gap between army surgeons who had learned how to accomplish feats of proper sanitation with thousands of men in field conditions, and civilian doctors who were accustomed to dealing with patients one by one. It was the civilian doctors who customarily were named to commands with the Minnesota volunteer regiments and many suffered from the fact that science had not yet invaded medical thought. The practice of medicine often was shackled to old theories concerning the causes and transmission of disease—theories which to the modern layman sound as antiquarian and medieval as they truly were, in 1898.

Once possessing a diploma in medicine, the doctor of the late Nineteenth Century felt he was equipped with an unchanging body of facts which would stand still for the length of his professional life. Yet, torrents of new and correct information were forming from earlier trickles of discoveries. A minority of brilliant men in the universities and in practice, like the Mayo brothers, were beginning to see that medicine was entering a period of expanding knowledge, the like of which no one ever had dreamed.

* * *

ON APRIL 24, 1898, Congress declared that a state of war existed between the United States and Spain. President McKinley called for 125,000 men. Minnesota's assigned quota was three regiments.

The men were organized hastily in cities and towns throughout Minnesota and the first three of the state's four regiments, the Twelfth, Thirteenth and Fourteenth Minnesota Volunteers, were mobilized at St. Paul five days later.

An encampment for the troops had been created hurriedly at the Minnesota State Fairgrounds, renamed Camp Ramsey in honor of Alexander Ramsey, who was still living. Most of the men were housed in 12 large stock barns, but one regiment, the Twelfth, given a limited supply of tents, camped out on the rise of land now known as Machinery Hill. Sanitary facilities were dug throughout the camp. Water was drawn from wells on the grounds.

In spite of long hours of drill, a holiday atmosphere pervaded the camp during the three weeks the troops were there. Sunday was visitors' day. On one Sunday, 40,000 persons visited Camp Ramsey, 15,000 of them from outside the Twin Cities, according to an old newspaper account. They came on special excursion trains carrying baskets of home-cooked food.

THE MEN WENT INTO Minneapolis and St. Paul on week-end passes. The fairgrounds at that time were in open farm country, surrounded by the market gardens of rural Ramsey County, but trolleys regularly made the trip between the camp and the two cities. Later, those trolleys would serve as ambulances to haul typhoid fever victims into city hospitals.

On May 12, to its delirious delight, the Thirteenth Regiment was ordered to the Philippines and left camp. On May 16, the Twelfth and the Fourteenth were ordered to a national encampment at Chickamauga National Park in Georgia.

They arrived May 20, 1898. That day the first case of typhoid fever broke out among the Minnesota troops. Since the incubation period for the disease is ten days, this first case must have been contracted at the fairgrounds campsite, but no record has been found of an investigation of its origin. Under existing national conditions, prob-

Company G of the Fifteenth Minnesota Regigment poses for a picture in the hot summer sun at Camp Ramsey. Hard-hit by typhoid, the regiment later was moved to Fort Snelling in an effort to halt the epidemic.

ably no study of the sort could have been made.

HOWEVER, BY 1898 much had been learned about typhoid fever. Midway in the Nineteenth Century, microbes were recognized as causing certain diseases. The German bacteriologist, Eberth, discovered the typhoid bacillus in the 1870's and four years after his discovery, the bacillus was recovered from a patient with typhoid fever.

By the time mobilization for the Spanish-American War was under way, teachers and army doctors understood that the bacillus caused the disease, although many civilian doctors still clung to out-moded theories. However, the experts knew that man was the only natural host of the typhoid bacillus, that it could be passed from man to man, that it could lie living and dormant in ice, in stagnant water-bearing layers of earth.

It was known that billions of bacteria were discharged from patients daily in stools and urine and the typhoid carrier, not ill but still excreting millions of bacilli daily for years on end, was a known hazard. The Minnesota troops were scarcely alone in contending with one of the most efficient disease-carriers known to mankind—the fly. Flies were uncontrolled and were capable of making hundreds of trips a day from pit privy to army kitchen. Hordes of them settled on every food-laden dish outside a screened area. For men in the field, it was necessary to blow flies off every spoonful of food as it was lifted to the mouth. This was the reason typhoid was largely a summer disease.

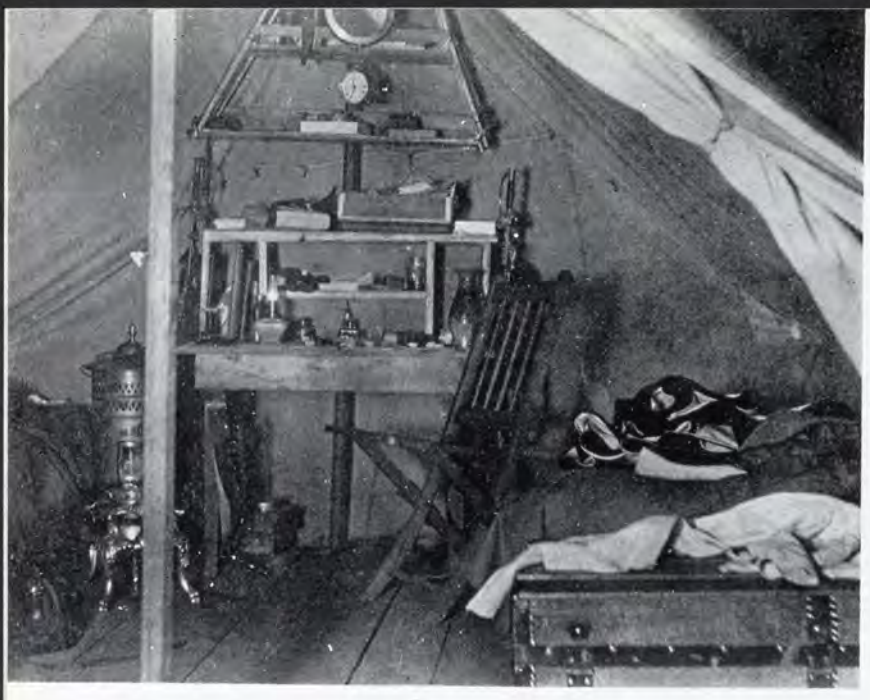
During the four months the Twelfth and Fourteenth Regiments were in service, one-third of the men—433—of the Twelfth Regiment developed the disease. Eighteen died. The Fourteenth's records listed 286 "probable" cases, with eight deaths.

On July 5, 1898, six weeks after the first case of typhoid had been recorded among the Minnesota regiments, the newly-recruited Fifteenth Minnesota Infantry Regiment moved into Camp Ramsey. The regiment's muster had not even been completed before typhoid broke out.

JULY 25 MARKED the first cases reporting on sick call, and by August 6, eighteen men had turned in with what was to be diagnosed as typhoid fever. Many cases were listed under other diagnoses, such as ephemeral fever, malaria and so on, but as the epidemic progressed, and the typical cases appeared with greater frequency and number, revision of the earlier diagnoses was required.

The horror of the diagnosis soon brought the patients into the hospitals of the Twin Cities. Soon there were not enough ambulances to carry the sick. Streetcars running along the pleasant little electric interurban line which had carried the men into the cities on pass were pressed into service of the sick. The camp hospital was enlarged again and again.

Bulletins were issued from the United States Department of the Army regarding



"Flash-light" picture of the interior of a Spanish-American War tent. The gear shown here—blankets, cot, mess kits—went with a sick man to the hospital. The picture was taken by George Bookstaver of St. Paul.

the (then) correct methods of preventing further cases. Not one in ten of the commands received these orders, according to Walter Reed, a major in the Regular Army's medical corps, who was ordered to study the undue prevalence of typhoid fever in the encampments of the army within the United States.

THE FIFTEENTH'S regimental surgeon was commended for his care of the sick, but was gathered into the same net as most of the non-Regular Army doctors for failure to occupy himself with the camp sanitation leading to the first case of the epidemic. It would have been well nigh impossible, in my opinion, to have imposed the necessary discipline on the troops. Most were unwashed during the forty-nine days they were encamped at the fairgrounds. Water was taken for all uses from barrels, hoses and pumps, using anything from the common drinking cup to hand-basins and slop jars. Mud and dust alternated and clothing was seldom, if ever, changed by the majority of men, so they became walking reservoirs of the typhoid germ.

Troop discipline reflected the origins of the men and their own hallowed folklore about good water—cold water was safe, warm water was not; clear water was pure, cloudy was not; running water sterilized itself, still water did not, and so on, although the army's experts knew none of this to be true.

Orders to boil the drinking water were ignored in the heat of the Minnesota summer but soon, orders went out from the regimental surgeon and city and state health authorities to boil all water. Tank wagons were disinfected frequently with live steam. Strict regulations regarding personal cleanliness and disposal of refuse were issued and all companies were moved twice to new camp sites on the fairgrounds. Vacated sites were sprinkled with lime.

STILL, TWENTY MEN a day were coming down with the disease. At the end of a month, nearly 180 men were sick. The camp's wells were tested by Dr. A. V. Miller, St. Paul's assistant commissioner of health. His assistant, Mr. Sink, found typhoid germs in one of the outlets.

Rumor circulated until it assumed the proportions of fact, and was served up as such in the newspapers, that Minneapolis, where the troops often went on pass, was the source of the epidemic. This seems to have been based on the fact that in 1896 the St. Paul City Council authorized construction of a water sterilization system for the city. In truth the system was not completed or in use until 1900, but the rumors got the upperhand. When typhoid germs were found in the wells at Camp Ramsey, St. Paul water was trucked into camp in an attempt to stem the epidemic.

Meanwhile, St. Paul itself was having its usual summer outbreak of typhoid, though not in epidemic proportions. The situation in Minneapolis was worse. Both cities

dumped raw sewage into the Mississippi River and drew their water from the river. While St. Paul blamed Minneapolis, St. Paul's own water contributed its share of germs and the disease continued to spread.

ON AUGUST 23, the Fifteenth Regiment moved onto the rifle range west of Fort Snelling, to fresh ground with good drainage and, presumably, to a fresh water supply—again, the river. Still the epidemic continued. It did not die down until September, after the Regiment had moved to Camp Meade, Pennsylvania, a national assembly point.

Of the 1,200 men on the Regiment's muster, 463 were typhoid victims and twenty died. In the Spanish-American War as a whole, United States troops suffered eleven deaths from disease for each death in battle. Every mustered regiment developed typhoid within ten weeks of arrival at national encampments.

In the midst of the disaster, Walter Reed and a board of urgently assembled scientists visited the camps. He applied the new Widal blood test for typhoid, examined the blood of suspected, and often mis-diagnosed, malarial cases, and applied a wealth of personal knowledge to the observations he made with his teams.

Every factor causing the spread of typhoid fever was found to be operating, but Reed concluded that contaminated water supplies were the most dangerous and prevalent cause throughout the country. Some encampments were supplied from deep wells, yet bacterial contamination was found. Water tables would be found communicating with surface water through limestone faults which permitted downward drainage from privy pits.

REED FOUND river water being pumped into drinking systems at points alongside drainage ditches from the camps. He found camps evacuated because of typhoid and promptly re-used by fresh healthy troops who shortly developed typhoid. He found hospital blankets reissued without sterilization, local milk trucks selling unsanitary milk in the camps.

Once the American troops were "blooded" in epidemic survival, many were sent to foreign posts, notably the Philippines and Cuba. In Cuba another peril awaited them —Yellow Fever. It was with this disease that Walter Reed undertook the investigation which proved that Yellow Fever was carried by mosquitos. He stopped in its tracks a serious outbreak in the Cuban capital which was decimating the city population, as well as the military garrisons.

Reed was by now a seasoned scientist and it is sad that two years later, in 1902, he died of appendicitis at the age of fifty. His widow was granted a pension of $1,500 a year by Congress "because her needs were small." Later, the foremost army hospital in the nation was named for him, which probably gave her great gratification.

The result of Reed's investigation of typhoid fever was a report, published in 1900, which in brevity and clarity as well as scientific accuracy is a model which has been followed since its appearance. Throughout the report ran two central criticisms: mistaken diagnosis and faulty latrines. There were other factors, of course. The age of widespread use of screening and netting had not yet arrived and flies were accepted as a necessary evil. It was not believed that they could be kept away from food and refuse. It is not hard to see why an army in the field, using animals for transport, threw up its hands at the idea of avoiding them.

Meaningful, indeed, is the fact that sixty-eight years and four wars later, the same problems of water and sanitary discipline plague American fighting forces in the field, despite sophisticated efforts at protection against disease. Medical progress has eliminated typhoid fever to such an extent that mistaken diagnosis might well take place again.

Today, of course, there is the compulsory typhoid "shot" for all men entering the armed forces. No longer, in encampment, do a man's gear, mess kits, blankets and cot go with him to the hospital. There he is cleaned up within an inch of his life, if ill, and if a surgical case, sterilization is accom-

plished with ease, even with the traditionally dirty war wounds.

NO LONGER are medical soldiers pressed into nursing duties with no training, and they no longer are reported as "generally insolent, drunken and lazy," as Walter Reed had to report. At Camp Meade, the Fifteenth Minnesota had this to contend with, along with their epidemic. Their "incomplete" records, medical and regimental, would today be carried with them in complete detail.

Today, graduating physicians are required to serve two years in the military and there are taught what the hired physicians and commissioned civilian doctors did not know in 1898 about the sanitary needs of military life.

No longer does typhoid fever rank as one of the Captains of Death. The last outbreak in Minnesota was in 1935 in Minneapolis and resulted from a temporary reduction in the chlorination of the water.

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A soldier's send-off was a gala affair when his regiment was ordered out of Camp Ramsey. Each regiment hoped to be sent overseas but only one left the country. The Thirteenth Regiment went to the Philippines. But wherever they went, the marching men shown above and hundreds of others like them carried with them the typhoid fever bacillus.

THE GIBBS HOUSE

Headquarters of the Ramsey County Historical Society, 2097 Larpenteur Avenue W., St. Paul, Minn.

THE Ramsey County Historical Society was founded in 1949. During the following years the Society, believing that a sense of history is of great importance in giving a new, mobile generation a knowledge of its roots in the past, acquired the 100-year-old farm home which had belonged to Heman R. Gibbs. The Society restored the Gibbs House and in 1954 opened it to the public as a museum which would depict the way of life of an early Minnesota settler.

In 1958 the Society erected a barn, behind the house, which is maintained as an agricultural museum to display the tools and other implements used by the men who broke up the prairie soil and farmed with horse and oxen.

Today, in addition to maintaining the Gibbs property, the Ramsey County Historical Society is active in the preservation of historic sites in Ramsey county, conducts tours, prepares pamphlets and other publications, organizes demonstrations of pioneer crafts and maintains a Speakers' Bureau for schools and organizations. It is the Society's hope that through its work the rich heritage of the sturdy men and women who were the pioneers of Ramsey County will be preserved for future generations.