

MEDICINE

# The Challenge of Tabardillo

## In Mexico, Dr. Howard Taylor Ricketts Gave His Life To Conquer This Dread Disease of Poverty and Filth

By JANE STAFFORD

**I**N MARCH, 1910, a determined scientist climbed wearily aboard a train in Chicago. He was on his way, for the second time within a year, to Mexico City where an epidemic of dread tabardillo or Mexican typhus fever raged.

He was Howard Taylor Ricketts, charming, beloved and brilliant American disease fighter. The month before, he had celebrated his thirty-ninth birthday. In the prime of life, he was already distinguished for his medical research and a brilliant career beckoned.

The University of Pennsylvania had just invited him to be professor of pathology. It was like getting a nice birthday present of an assured future. When he accepted, he arranged to take up his new duties in the fall.

Meanwhile he had a job he wanted to finish in Mexico in the thick of that seemingly hopeless fight against the epidemic.

The Mexicans called the disease that was plaguing their country tabardillo. Sometimes it was called American or Mexican typhus fever. Medical scientists were not sure whether it was the same disease as the typhus fever that raged in Europe, and America, too, whenever wars or famine or extreme poverty crowded people together in filthy, vermin-infested and squalid quarters. That was one point Dr. Ricketts was trying to settle.

### Claimed Most Victims

Typhus fever was a doughty foe for any disease fighter to tackle. No other disease has claimed so many victims among physicians and nurses and it is not uncommon among laboratory investigators. Throughout the ages it has taken a terrific toll of all classes of people. It was always especially common among the poor, huddled together for warmth in their tiny cottages, and among the prisoners crowded together in the filthy jails of earlier centuries. It followed closely on wars and on famines. At first it was confused with other fevers, but in about 1700, physicians learned to distinguish it by its sudden

onset, short duration of fever and characteristic rash. This consists of irregular, raised red spots which sixteenth century physicians described as looking like flea bites.

It took several centuries more for men to learn that while the rash merely resembled flea bites, the disease is actually transmitted by the bite of a flea. Those sixteenth century physicians never knew how close they were to the true solution of the typhus fever problem with their casual references to flea bites. Neither, with two exceptions, did the other physicians before 1909 have any inkling of the importance of fleas and lice in the disease, although they began to notice that it was always associated with filth and vermin.

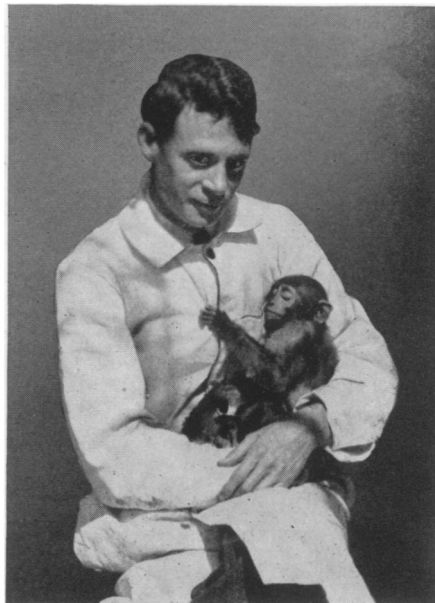
But Ross, in India, found that mosquitoes carried malaria, and in Panama, Reed and his colleagues showed that mosquitoes also transmitted yellow fever. Flies were next shown to carry typhoid fever. By 1909 there were rumors that some insect probably carried typhus fever.

### Lice Carry Disease

Then, in 1909, just before Dr. Ricketts made his first trip to Mexico, a French army surgeon, Charles Nicolle, whiling away the hot hours at his post in tropical Algiers by trying to give typhus fever to monkeys, showed that lice could carry the disease.

Dr. Ricketts had had a notion of his own, before he ever heard of Nicolle's work, that ticks might carry typhus fever. He had just made the important discovery that ticks carry an apparently similar disease, Rocky Mountain spotted fever, from one animal to another by their bite.

He made this noteworthy discovery on a vacation. He was that kind of a man, enthusiastic, persistent, tireless and fearless in his search for facts. When he was still a student at Northwestern University Medical School and later a research fellow at Rush Medical School, Chicago, he was known for the ability and energy with which he pursued his studies. After graduating from medical school, he decided not to enter on active



DR. HOWARD TAYLOR RICKETTS

### ANOTHER PIONEER

**The dramatic story of the great sacrifice of Dr. Ricketts in the cause of humanity provides the theme for the second of a series on Pioneers of Medicine.**

practice, but to devote himself to teaching and research. He proved to have an instinct for research, according to Dr. Ludwig Hektoen, his chief, at the University of Chicago and the McCormick Institute for Infectious Diseases.

He had worked so hard at his job in Chicago that in the spring of 1906 he was obliged to lay off and rest for a while. He had gone to Montana, and, just by way of pastime, this indomitable disease-fighter took up the study of Rocky Mountain spotted fever.

At that time this highly fatal disease was more of a curiosity than a problem to medical scientists, except for the few physicians and health officers in Montana who were called on to handle cases of it. The disease seemed to be limited to one part of the state, the Bitter Boot Valley, and it only attacked sheep-herders, hunters or others whose business or pleasure took them to certain remote parts of the valley in the spring. This disease, like typhus fever,

is characterized by a high fever and a peculiar rash. No one knew what caused it or how to avoid it.

Not long after Dr. Ricketts arrived in the valley for his much-needed rest, he saw one or two acute cases of this mysterious malady. His scientific imagination was promptly fired and, rest or no rest, he had immediately started working on the problem.

### Tick Is Guilty

It did not take him long to discover that animals other than man suffered from the disease, and that a certain tick, occurring naturally in the valley, carried it from animal to animal. Dr. Ricketts spent three years on the Rocky Mountain spotted fever studies, during which time he acquired considerable knowledge and skill at investigating this type of disease.

All the time he worked on the spotted fever, he became more and more impressed with how much it was like typhus fever. So in July, 1909, he had decided to put this new special knowledge to work on the typhus problem. There was apparently no typhus fever in the United States at that time, but in Mexico where it was called tabardillo there was plenty of it, amounting to an epidemic.

It was just at this time that Nicolle announced his epochal discovery about the lice, but Dr. Ricketts decided to carry out his plans nevertheless. There was still plenty of mopping-up work for a daring disease fighter to do in the typhus field. There was, for one thing, a need to settle the question of whether tabardillo and typhus were the same disease. Likewise, Dr. Ricketts felt he

need not abandon his theory about the ticks just yet. Ticks might play a role in transmitting the disease as well as lice. And, finally, no one had yet found the germ or micro-organism that caused this dreadful disease.

So in the fall of 1909 Dr. Ricketts, according to schedule, had departed on his first visit to Mexico City. He had realized fully the dangers he was facing. He had known, too, that he did not have to go. He could have remained at the McCormick Institute of Infectious Diseases, a place "handsome and out of the wet," but he had preferred to tackle the dangerous problem of typhus or tabardillo in Mexico. People were dying of tabardillo down there. Maybe, with his new and special knowledge of disease-fighting, he could find a way to stop those deaths and to check the epidemic.

### Inject Into Monkeys

He had taken with him an equally daring volunteer assistant, Russell M. Wilder. The two of them had spent the winter injecting into monkeys blood from the tabardillo patients, who crowded the city's hospitals, and in feeding lice and ticks on typhus- or tabardillo-infected blood and then on healthy monkeys. It was not many weeks before they had found that typhus fever is quite different from Rocky Mountain spotted fever, although there are similarities between the two diseases.

Next they had repeated Nicolle's experiments of injecting blood from fever patients into chimpanzees and monkeys, and of letting lice feed first on the infected and then on healthy monkeys. They had confirmed his discovery, that lice can carry the disease from the sick to the well. They also showed that the tabardillo of Mexico and the typhus fever of the Old World were really the same disease.

They had put ticks to feeding on typhus-infected monkeys and on typhus patient's blood, and then on healthy monkeys, but with no results. The ticks do not carry this disease.

Dr. Ricketts had made one more notable discovery. In the blood of typhus fever patients and in the lice that had fed on them he had found a tiny micro-organism which is apparently the germ that causes the disease. This tiny organism has been called *Rickettsia*, after its discoverer. It is rather generally accepted as the cause of the disease, although some scientists think that the case for the *Rickettsia* has not been conclusively proved.

In the midst of these investigations, Dr. Ricketts made a flying trip back to Chicago. There he had attended to some personal affairs, including the birthday celebration and the matter of the Pennsylvania professorship. Then for the second time, he said good-bye to his wife and two children. In fact, he probably said "Au revoir," for he expected to be back within a few months.

His friends had hated to see him start again for the fever-ridden city, because he was already worn out from overwork and should have been resting. But he was an indomitable and brave disease fighter, and before taking up his new duties that might keep him tied down to his professorial chair for years, he wanted one more chance at the typhus fever problem which then seemed so near solution.

Today typhus fever has been conquered. A means of preventing this ancient plague is at hand. But when Dr. Ricketts started for Mexico on that long ago March day, it was still one of medicine's unsolved problems and the disease fighter's deadliest foe, as well as the greatest challenge to his skill.

Valiant Dr. Ricketts, who was so eager to take up that challenge, never had a chance to complete the conquest of typhus fever. For, back in Mexico the second time, he had barely gotten started in his work with the monkeys and the lice and the blood containing the *Rickettsia* of typhus fever, when he was taken ill himself.

### Tired Out

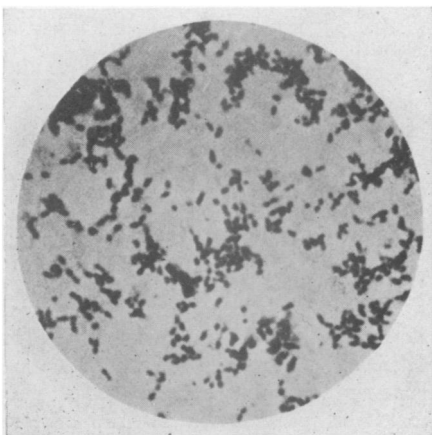
One friend thinks he fell a ready victim to typhus fever because he was tired out when he left on that second fatal trip to Mexico.

They took him to the American Hospital in Mexico City, where loyal Russell Wilder saw that he had every care. But he died on May 3, a victim of the pestilence he was investigating.

A signal honor was shown his memory, when, by special order of President Diaz, all the professors and students of the National Medical School of Mexico stood at attention as his body was carried aboard the train that took it back to his sorrowing wife and friends in Chicago.

*Science News Letter, July 14, 1934*

Rattlesnakes sometimes develop more than one rattle in a year, or lose rattles; hence the age of a snake cannot be reliably found by counting the rattles.



### RICKETTSIA BODIES

*They are named for Howard Taylor Ricketts who first saw them in the blood of typhus fever patients and believed them to be the germs causing the disease.*