



DR. CLAUDE C. PIERCE

# FIGHTING THE PLAGUE SPREADING RAT

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ASSISTANT SURGEON GENERAL W.C. RUCKER



LONG the levees guarding the crescent-shaped banks of the Mississippi river at New Orleans, the good rat ship, Neptune, is at its deadly work. Deadly work which is life-saving work, done under the direction of Uncle Sam's public health service. Rats carry the parasite which transmits the frightful disease, bubonic plague, to man. The Neptune's work is to kill the rat and to save man. It is doing its work most efficiently.

The Neptune is in charge of Past Assistant Surgeon Norman Roberts, while Assistant Surgeon-General William C. Rucker is in charge of the general crusade being conducted by the public health service against the rat plague and parasite. Dr. Claude C. Pierce is also one of the determined workers in the antiplague crusade. This rat-killing ship is worth a thousand ferrets, a thousand cats and a thousand terriers in its work of rodent extermination. With one breath it can kill 10,000 rats. It can kill the 10,000, but let it be said that only occasionally is it called upon to breathe out death upon more than 500 of the pests at one exhalation, for seldom is a larger number found on one ship.

Why it is done, and how it is done, is here the purpose of a layman to set down, trusting that the doctors of the public health service will approve the spirit, even if the strict language of science, in which the profession usually communicates its views, is here notorious by its absence. Let it be told first how it is done.

The Neptune is little more than a big tub, but it is well fitted up with quarters for the medical officers and the crew who navigate it and direct its beneficent work. When there were rumors of the appearance of the dread plague in the Crescent City, the Neptune put to sea from Philadelphia and made the trip in quick time to New Orleans. Its deadly projectile is monoxide of carbon; its weapon of offense is the hose and nozzle; and its powder is coke which burns in a closed furnace. Monoxide of carbon is more deadly than shrapnel, which occasionally wounds only, allowing its victim to live out his natural days and to die in bed. There are no wounded to be picked up after a battery of monoxide of carbon has been at its work. The casualty list is one of the dead only.

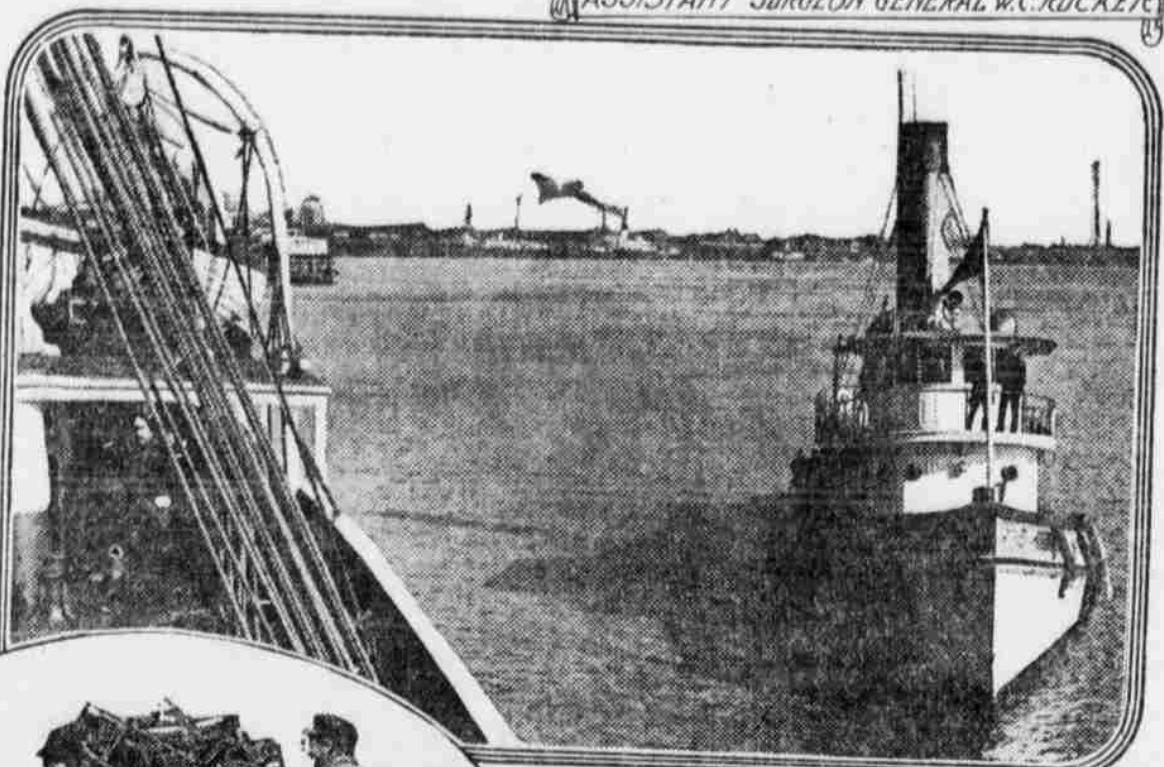
Rats, as has been said, carry the parasite, which is a flea, from which it is possible for man to become infected with the disease, bubonic plague. The public health service has classified all the commercial ports of the world as follows: "Clean," "Suspected," "Infected." When a ship bound for New Orleans reaches quarantine, which is a good way down the river from the Crescent City, it is boarded. There, if an unusual number of rats are found on board, or if other conditions seem to require it, there is a sulphur fumigation. Then the ship proceeds on its way to New Orleans. It is then that the public health officers take up a watch on the vessel.

There have been plague rats in New Orleans. There are certain places where rats are more likely to succeed in getting onto a vessel than they are at others. There is no greater desire that rats which possibly may be infected shall get on to a ship than that rats in the same possible condition shall leave it for the shore. It is possible for precautions to be taken which will prevent the rodents either from leaving or entering the vessel. Their ordinary way of egress or ingress is along cables or ropes which lead from the vessel to the shore. To prevent entrance and exit guards are attached to the ropes and no rat is able to pass them.

When the public health officials find that it is necessary to turn their monoxide of carbon battery loose on a ship the hatches are battened down, every window of every cabin is sealed, and all the cracks of the doors are closed with paper attached by means of flour paste. Then the Neptune steams up alongside, the coke in the closed furnace is started burning and the generated monoxide of carbon passes through a hose into the hold of the ship until it is filled with the deadly gas. Then attention is turned to the cabins and staterooms, each of which is given its full charge of the overpowering fumes.

The vessel is left alone for six hours and then the hatches, doors, windows and port holes are opened and the gas escapes. All that remains to be done is to go in and gather up the dead rats. The fumigating process kills not only the rats, but everything else living that is on board and this means everything living down to the minutest form of animal life.

Danger is passing quickly from New Orleans and it is passing because not only the health authorities of the state and city, but those of the government took hold of the situation at once and saved it, if it really needed saving, and there are those who believe that if unchecked, the bubonic plague might have obtained a firm foothold. Dr. William C. Rucker, who has been in charge at New Orleans, is experienced in antiplague work,



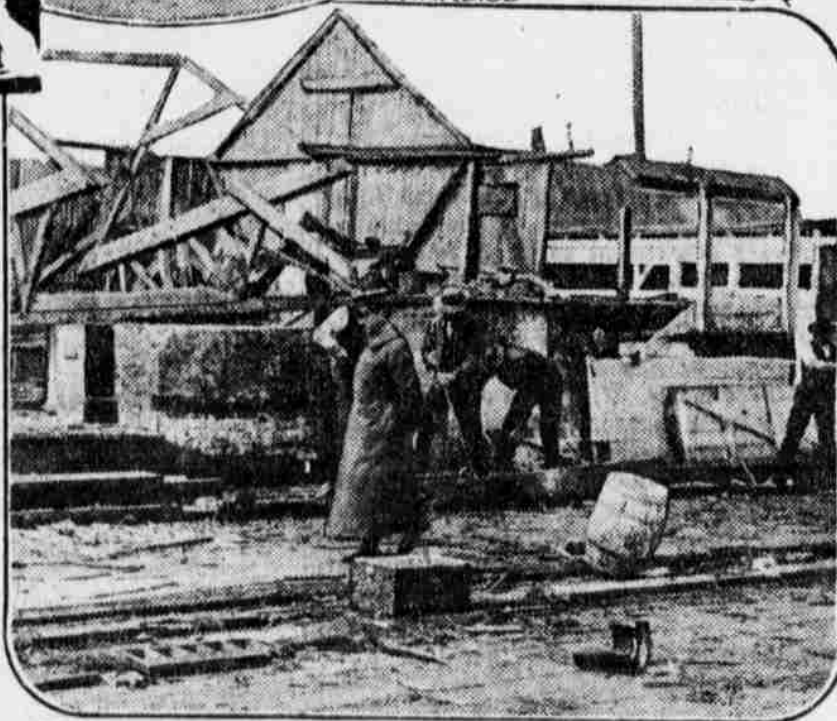
"NEPTUNE" COMING ALONGSIDE VESSEL TO FUMIGATE FOR RAT DESTRUCTION



A RAT PARADISE



A RAT GUARD



DEMOLISHING A "RAT ROOKERY"

having served in San Francisco, where he was executive officer when the crusade against the plague was instituted in that city.

The rat ship Neptune does its work on the waterfront of cities, but it must not be supposed that vessels alone are the habitation of rats which may carry with them the germs of a dread disease. In any city which may be suspected of harboring rats afflicted with the plague parasite, the crusade against the rodents is carried on in all sections of the town where the rodents abound. Thousands upon thousands of the rats are caught in traps and every rat caught is tagged, so that the place where it was taken can be known definitely. The bodies of the animals are taken to the public health laboratory and there they are examined, the examinations sometimes reaching the number of 1,000 a day.

Each of the dead rats is examined thoroughly and an experienced man can tell instantly those which appear to be affected. In the case of a suspect, or where it is definitely determined that the rat actually has the disease, the tag is consulted and the place of capture of the animal is learned. Then the work of extermination and of fumigation and perhaps demolition of buildings begins in the neighborhood from which the infected rat came.

Here is what Assistant Surgeon-General William C. Rucker has said in one brief paragraph concerning the eradication and prevention of bubonic plague:

"Plague is primarily a disease of rodents, and secondly and accidentally, a disease of man. Man's safety from the disease lies in the exclusion of the rodent and its parasites. This is the basis of all preventive and eradication work. If a man can live in rodent-free surroundings he need have no fear of plague, because if there be no rodents there can be no rodent parasites, and for all practical purposes the flea may be considered as the common vector of the disease from rodent to rodent and from rodent to man. The eradication of bubonic plague, therefore, means the eradication of rodents."

Now, in a layman's language, the path of the bubonic plague from rodent to man is something like this: A rat has the plague. Where it got it we will say nobody knows, for the origin of the thing is as much of a question as which came first, the hen or the egg. Every rat has fleas. The rat which has the plague is bitten by a flea, which absorbs the plague poison. The rat dies, we will say; the flea leaves it and in some way gets on to a man; the parasite is charged with the disease and if the poison is transmitted be-

neath the skin of a human being the plague results. In the week ending September 26, 1914, Assistant Surgeon-General Rucker's report shows that 70 vessels were fumigated with sulphur and 13 with carbon monoxide and there were 128,853 packages of freight inspected. In this week more than eight thousand rats were trapped and examined. Hundreds of premises were fumigated or disinfected and many more places were inspected. During the one week 199 buildings were made rat-proof. Altogether the number of buildings thus guarded against the entry of rodents was 1,300.

Assistant Surgeon-General Rucker follows his word that the eradication of bubonic plague means the eradication of rodents by saying that in America we have two rodents which are comprehended in the problem, the rat and the ground squirrel, and apparently each plays a very distinct role in the propagation and perpetuation of the disease.

The rat is distinctly domestic in its habits, and therefore comes in more or less intimate contact with man. It frequents the great highways of the world, travels long distances in ships and occasionally on trains. The ground squirrel does not live in human habitations and it makes only short migrations. As Doctor Rucker puts it, it is almost a negligible factor in the direct transfer of the disease to man. The ground squirrel's great function in the plague scheme is that of a rural reservoir from which from time to time the disease flows over to the suburban rat, thence to his city cousin and thence to man.

In parts of the West the public health service is conducting a crusade against the ground squirrel. This animal looks not unlike the common gray squirrel, and the help of the scientists of the biological survey of the department of agriculture in Washington has been given to the work of the extermination of this animal over large tracts of land.

The public health service has given in its reports descriptions of the means which should be taken to prevent the spread of the disease with which the rodents are affected. Instructions are given in rat-trapping, rat-proofing, in methods of destroying rat habitations and to these are added chapters on the natural enemy of rats, owls, hawks, weasels, cats, dogs, ferrets and the other creatures which either consider the repulsive rat a delicacy or like to prey upon it from sheer love of killing.

The country probably has little knowledge of the constant work which is being done by the public health service of the United States government to safeguard the people from disease and death. The plague preventive work which has been done is to scientists one of the most interesting works in the whole field of their study and endeavor.

## OUT OF COMMISSION.

Nervous Wife—Oh, Harry, dear, do order a mouse-trap to be sent home today.  
Harry—But you bought one last week.  
Nervous Wife—Yes, dear, but there's a mouse in that—Pearson's Weekly.

## A SAD FAREWELL.

"So you are going to make another tour?"  
"Yes," replied the actor.  
"But you advertised your previous engagement as a farewell occasion."  
"It was one. We said good-by to nearly a thousand dollars."

# OUT-OF-ORDINARY PEOPLE

## DOCTOR JORDAN, PEACE ADVOCATE



Among the peace advocates of the United States, place in the front rank must be accorded Dr. David Starr Jordan, chancellor of Leland Stanford University, because of his consistency and persistence. Everywhere and at all times he spreads the doctrine of universal peace and disarmament. No sooner did Representative Gardner and others begin their campaign for more adequate national defenses than Doctor Jordan sprang into the arena and hurried East on a lecture tour. Japan, he declares, is financially unable to carry on a war against us, and by the time the present war is over, lasting international peace will have been assured by the pacifist movement.

"Politicians start all this war scare and war talk," he says. "They do it to bring themselves into the limelight. Every naval officer knows that the outlay of millions for armaments is not for efficiency, but waste."

Every military officer knows the same thing. Soldiers are police. They only become soldiers when they are above the law, when martial law is proclaimed. This nation has not one thing in a million to do but sit tight.

"We should not tolerate any tirade against the so-called inefficiency of the army or the navy, and we should, protest against an agitation for more armament at a time when the nations of the earth are crumbling each other because simply of their perfect equipment."

## SIAMESE PRINCE VISITS US

Prince Kampengpet, brother of the king of Siam, fell ill and the court physician prescribed a tour of the world. Consequently the United States has been having the honor of entertaining that royal personage, together with the princess and Capt. S. Yoo, military aide. Landing in New York with 25 trunks and two Siamese dachshunds, the party visited the chief cities of the country and then crossed the continent for a somewhat prolonged stay in the Yellowstone National park and the Yosemite valley.

"The princess and I plan to cover the entire world on our tour before returning to Siam next February," said the prince. "We have been traveling over a year now and have covered most of central Europe. From this country we will go to Japan and China."

"This trip is much more wonderful for the princess than for me, because I spent ten years on the continent, after I finished my course at Cambridge. The princess, however, has never been far away from Siam."

Though the prince is not much more than five feet tall, several years' service in the Siamese army has given him a military bearing. His manner resembles the English far more than it does the Oriental. On each arm he wore a heavy gold bracelet, one of them bearing a watch. His fingers were well supplied with rings.



## MEANS TO LIVE TO BE 120



Prof. Frederick Starr of the University of Chicago, a scientist with a score of foreign decorations, is certain he will live to be one hundred and twenty years old. He said so recently on his arrival in Los Angeles, where he spent the first vacation he has had in 30 years. Professor Starr is fifty-six years old.

"Another man who feels sure of great longevity," said Professor Starr, "is Count Okuma, premier of Japan. The count is absolutely certain he will reach one hundred and twenty-five years."

"The count and I are old friends," said the professor. "He seems just as sure that he is going to beat me by five years as he is that he is alive today. We have agreed that, if he is still alive when I reach one hundred and twenty years, he gets a present. If I am still alive when he gets to be one hundred and twenty-five years, I get a present. How's that for a wager?"

Professor Starr said the secret of a long life is always to smile, never to get angry, and to keep working all the time.

"The history of man through all the ages," he said, "shows that those of the sunny temperament have the longer life."

## DOCTOR MUNROE, EXPLOSIVE EXPERT

When dispatches came from the war zone telling of the wonderful lethal gases thrown off by the exploding turpentine shells and of how those gases destroy instantly all life over a considerable area, the Washington correspondents turned at once to Dr. Charles Edward Munroe, who pronounced the stories to be "bunk."

What Doctor Munroe has to say about explosives is interesting always. He knows his subject. He is, perhaps, Uncle Sam's most distinguished expert on explosives. Now sixty-five years old, from his youth he has experimented with and investigated materials that explode. His publications on the subject, totaling some one hundred volumes, are standard. Heredity and environment made Doctor Munroe a student, for he was born at Cambridge, Mass., of a scholarly family. He was, of course, educated at Harvard, from which institution he was graduated with the degree of bachelor of science in 1871. For three years he was an assistant professor of chemistry at Harvard. Chemistry is a broad field and he acquired a familiarity with every portion of it, but especially was he attracted by that portion in which he later specialized. The things that "went off" had a fascination for him.

Then for 12 years he was professor of chemistry at Annapolis, and since 1886 he has been in the employ of the government at Washington.

