

## INFLUENZA IS A MYSTERY.

So Far It Has Defeated Medical Skill and Science.

(By Frederick J. Haskin.)

An experiment that makes the transmission of influenza a more baffling mystery than ever, and which at the same time places on record an act of self-sacrificing heroism by about 100 naval volunteers, has just been completed by officers of the United States public health service co-operating with medical officers of the United States navy at Boston and San Francisco.

As nearly every one knows, scientists all over the world, in combating the spread of influenza which is still going on, have proceeded on the assumption that it is transmitted chiefly by coughing and spitting. The theory has been that the diseased mucus thrown out by these acts is filled with the germs of influenza, which thus find lodgment in healthy tissue. All the experiments heretofore made seem to indicate strongly that influenza is transmitted in this way, and it is well accepted that most other respiratory diseases are so carried.

The latest experiment consisted in submitting the 100 men who volunteered for the purpose to every possible method of infection with influenza germs through the nose and throat. These men risked their lives for the general good, and for the advancement of science. They went through a singular trying and repulsive ordeal. They, and every one else, believed that they were being inoculated with the dread disease which is destroying millions of lives all over the world. Their heroism is fully equal to that displayed some years ago by the men of the army medical army corps who exposed themselves in Cuba to the bites of mosquitoes in order to determine finally whether yellow fever was transmitted by that insect. The only difference in the two experiments was in the result. Some of the officers who exposed themselves to the bite of the mosquito contracted yellow fever, and one of them died, thereby establishing the soundness of their theory. The volunteers who submitted themselves to inoculation with the germs of influenza were fully expected to take the disease, and were prepared to die. But not one of them developed any symptoms of influenza.

This astonishing negative result, which is the sensation of the day in scientific circles should not tempt any one to be careless in the matter of coughing and spitting or in exposing himself to infection by those acts. As officials of the public health service point out, it may be that the germs of the disease disappear as soon as or immediately after the symptoms appear. Something like this is true of other diseases. In measles, for example, it has been found that the germs which cause the disease are all gone within five or six days after the appearance of the rash, and the case is no longer contagious. The discovery of this fact, which was made by Anderson and Goldberger of the public health service only a few years ago has led to shortening the quarantine for measles by more than half.

"These new experiments in the transmission of influenza," said Surgeon General Blue, "show how difficult is the influenza problem. They by no means indicate that we can afford to disregard coughing, sneezing and spitting as common means of spreading disease; and even in the case of influenza this source of infection should always be borne in mind. I believe however, that we have not paid sufficient attention to other paths of infection, especially to the lips, mouth and hands. The fact that the disease was much less common in army camps where the sterilization of all eating utensils and dishes was rigidly enforced, shows the importance of the mouth as an avenue of infection."

There can be no doubt that these experiments at Boston and San Francisco were carried out with the utmost thoroughness. Lieutenant Commander Rosenau of the navy medical corps and Surgeon Joseph Goldberger of the public health service were the officers in charge of the Boston experiment, which was made at the quarantine station on Gallop Island. Forty-seven men were the subjects of this part of the experiment. All of them had been more or less exposed to the disease and 39 of them had never had any bronchial disease. This means that some of them may have been naturally immune to influenza, but it is not at all probable that all of them were.

The first experiment consisted in thoroughly infecting the noses of about ten of the men with cultures of Pfeiffer's influenza bacillus, a virulent germ commonly found in influenza. None of the men developed any symptoms. The next form of the experiment was to take the secretions from the noses and throats of influenza patients and place them in the noses and throats of the volunteers by means of swabs and sprays. The

## NEW COUNTY VOTES MARCH 11.

Allendale Then to Pick Out Officers.

Barnwell, S. C., Feb. 22.—The first primary election to select officers for the new county of Allendale, carved out of portions of Barnwell and Hampton counties, will be held March 11th, with a second election two weeks later, if one be necessary.

According to reports reaching Barnwell, the "woods are full" of candidates for the various offices, the rather large assessment not having been a deterrent. At a meeting held in Allendale a couple of weeks ago, the assessments were fixed as follows: Clerk of Court, \$100; sheriff, \$100; auditor, \$55; judge of probate, \$50; superintendent of education, \$50; senator, \$10; coroner, \$10; magistrates, \$5.

The new county also proposes to vote on the question of whether or not bonds shall be issued for road improvement in a sum not less than \$250,000, nor more than \$500,000. The road question was one of the prime factors in the new county movement, and this phase in the development of Allendale county will be watched with considerable interest by the residents of the mother county.

### As Man to Man.

"Your wife says you have her terrorized."

"Honest judge—"

"I do not ask you this in my official capacity, but as a man to man. Do you understand?"

"Yes, your honor."

"What's your secret?"—Kansas City Journal.

time occupied in removing the diseased mucus from a sick man and putting it into the nose and throat of a well man was reduced to as little as 30 seconds. Yet none of the men so infected developed any symptoms of the disease.

Determined that the test should be exhaustive, the doctors next submitted a group of volunteers to infection by actual coughing and spitting. For this purpose ten volunteers were selected, and ten bed patients who had recently come down with severe attacks of influenza. Each of the volunteers leaned over the bed of each of the sick men, conversed with him for a few minutes, and allowed the patient to cough directly in his face, so that there should be no doubt of a transmission of diseased tissue. Each volunteer was thus exposed to ten different cases of influenza, and was in close proximity with them for not less than three-quarters of an hour. Yet not one of these volunteers developed any symptoms of influenza.

The experiments in San Francisco, which were carried out under the direction of Surgeon G. W. McCoy of the public health service, and Lieut. De Wayne Richey of the United States navy at the Angel Island quarantine station, were very similar in method and in result. The men who volunteered for these experiments had been vaccinated with Pfeiffer's influenza bacilli and pneumonia germs. If, as European reports would indicate, influenza is caused by an ultra microscopic germ, such vaccination would be without protection to those so vaccinated. None of these men had been exposed to the influenza epidemic.

In this experiment there was no direct exposure to patients, but the additional methods of infection were tried of injecting the blood of an influenza patient into that of a volunteer, and of introducing the pure cultures of influenza bacilli into a volunteer's eye. No one of these men developed influenza.

The result of this experiment has left the medical world completely bewildered.

The theory which has apparently been upset by these experiments was originated by a famous French physician Nicolle, who claimed to have produced influenza with a material obtained from mucus excretions. He produced the disease with this material after filtering through a fine porcelain filter, showing that a germ was present which was not only too small to be detected with the microscope, but too small even to be held back by the fine pores of unglazed porcelain. Foster, an American army surgeon, showed that common colds were produced by equally minute germs. The work of Foster bore so directly on the problems presented by influenza that it may be said to have led to the experiments there described.

The only thing which can be considered proved about influenza so far is that it is still a mystery both as to the nature of its causative germ and as to its means of transmission, and therefore especially dangerous. Authorities, however, still consider influenza a crowd disease, and all unnecessary gatherings of people should be discouraged when influenza is prevalent.

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