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## EDITORIAL

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### INSECTS AND DISEASE.

During the past seventeen years more than 8,000,000 persons have died in India of the plague, or more than the entire population of Canada. The disease had its origin in the upland of the far interior of China, from whence it has found its way to every continent.

In their efforts to find the cause first came the discovery of the bacillus pestis, or plague germ. There was, however, much work to be done before the method of conveying the infection to the human body became known. In the course of investigation it became known that the bacillus of the disease was frequently to be found in the body of the rat.

The next step was the discovery that the flea was the intermediary that carried the infection from the rat to man. These parasites infest the bodies of rats, bite them and suck blood, and then do the same thing to man, thereby infecting him.

The way the flea infects the rat or man it feeds upon is very interesting. When a flea sucks blood from an infected rat, the bacilli multiply in its stomach with great rapidity, and form jelly-like masses. These block the entrance to the flea's stomach. When the flea bites and sucks another rat or a man the blood it sucks can no longer find its way into the stomach, and fills what is known as its pre-ventriculum or gullet. This becomes distended with blood, and some of it regurgitates back through the flea's "pricker" or proboscis, and thus the rat or man is infected.

This theory of regurgitation had been speculatively guessed at by some for some years, but it was definitely proven recently by Mr. A. W. Bacot, Entomologist to the Lister Institute, and Dr. C. J. Martin, F.R.S., Director of the Institute. In cool, damp weather, a plague infected flea will live a considerable length of time, but heat soon kills it. This accounts for the subsidence of the plague in the hot, dry weather, and its spread in the cooler, wet season.