

Although we now know that *Aedes aegypti* becomes sluggish and dies in cold weather, the disease extended, during the summer, as far north as Montreal in Quebec and Portsmouth, N. H.

One of the worst of the early outbreaks was in Philadelphia in 1793 when, it is estimated, 10 per cent of the population was killed off. People fled in panic from the city. Dr. Benjamin Rush, a signer of the Declaration of Independence, and a foremost physician of his day, worked long and hard, but of course in vain, against yellow fever. The epidemic died out with the coming of cold weather and the death of the mosquitoes. But the connection was not made, even though Dr. Rush wrote, as an incidental remark, that mosquitoes were uncommonly numerous that summer.

Besides the deaths, millions of dollars of property were lost in every epidemic. This was because the prevailing theory had it that yellow jack was transmitted by fomites—black vomit and excrement of the victims—and by the clothes they wore and the things they touched. Bedding and furniture—everything that had come in contact with a yellow fever patient—was burned. The disease continued to spread.

In 1881, a Havana physician, Dr. Carlos Finlay, wrote a paper in which he announced his belief that the disease was carried by a mosquito—and he named it—the mosquito which we now know as *Aedes aegypti*. The medical profession had respect for Dr. Finlay but, they believed, here he had gone wrong.

Walter Reed and his colleagues, of course, proved him right. Reed's work was preceded by much good research, notably that of Surgeon General George M. Sternburg, which disproved a mistaken theory about the disease, and Dr. Henry R. Carter, U. S. Public Health Service, who noted that two or three weeks elapsed between the first and second cases of a disease outbreak.

Human Guinea Pigs

Yet the world will always remember the brilliant and systematic demonstration carried on by Reed which demonstrated that the female of the *Aedes aegypti* carried the disease from man to man. The world came near forgetting the human guinea pigs who volunteered to be bitten by mosquitoes or to live in contact with fomites. It was only in the late 1920's that the survivors of the experiment were given adequate pensions by Congress.

Since Major Reed's day, the battle against yellow fever has gone on. First announcement of a successful vaccine came in 1932, from scientists at the Rockefeller Institute. But complications developed in the methods of preparing it and it was not until well after World War II began that the vaccine was foolproof. From that time on, all servicemen going into yellow fever zones were vaccinated.

Major Reed's work not only meant victory over yellow fever—it also pointed the way to the conquest of malaria, particularly in the Panama Canal Zone. And it opened a new era in preventive medicine, an era of protection against the insects which carry diseases to man.

Science News Letter, September 8, 1951

ENTOMOLOGY

Watching Insects to Time Proper Control Saves Money

➤ A UNIQUE method for controlling cotton and alfalfa pests has been developed by Ray F. Smith, professor of entomology, University of California College of Agriculture at Berkeley.

He calls it "supervised control," and it means money in the bank for the farmers because it cuts costs of insecticides and labor.

This is how it works: Several growers in an area hire trained entomologists to make field surveys for insect pests. Each field is visited about once a week. From the numbers of insects found in the fields, the best time for control measures can then be figured. Each recommendation is tailored to fit the needs of the individual field. The grower gets better results by applying insecticides only when actually necessary.

More than 85,000 acres of cotton and 15,000 acres of alfalfa are now being handled in California under "supervised control." This is the sixth year of its operation.

Science News Letter, September 8, 1951

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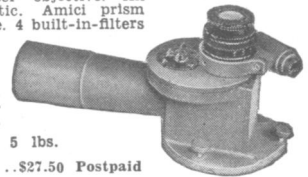
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