

MEDICINE

# Mice and Men Collaborate In Defeating Yellow Fever

Researchers at Rockefeller Foundation at Last Develop  
Method of giving Immunity from This Tropical Scourge

**Y**ELLOW fever will claim no more martyrs among scientists seeking to conquer it, and in time it will cease to be a dread peril to missionaries, explorers, business men and the general population in tropical sections of Africa and South America, as a result of the work of a research team of the International Health Division of the Rockefeller Foundation. Immunity can at last be given to protect people against this disease as it is given to protect against smallpox, diphtheria and typhoid fever.

## Conquest Only Begun

Announcement of a successful method of protecting against yellow fever was made by Drs. W. A. Sawyer, S. F. Kitchen and Wray Lloyd of the Rockefeller Foundation, at the meeting of the Federation of American Societies for Experimental Biology.

When Walter Reed, aided by brave volunteers who let themselves be bitten by yellow fever infected mosquitoes, proved the role of the mosquito in carrying the disease, it seemed as if the conquest of yellow fever had been made. But it had only been begun. Yellow fever was cleaned out of the United States by warfare against the yellow fever carrying mosquito, and it has been kept out by the vigilance of the Public Health Service's quarantine officers.

It still threatens in other parts of the world, however, and scientists have continued to work for years with the deadly virus or germ that causes it, in the effort to effect its final conquest. Fully as brave as Walter Reed's volunteers are these men who have carried on silently in their laboratories and in the tropics where yellow fever raged. Within the last four years thirty-two of them contracted the disease, five of them dying.

In Dr. Sawyer's own laboratory six members of his staff contracted the fever, but fortunately recovered. From these men he obtained the serum which when injected with yellow fever virus

recovered from mice gives immunity to the disease in man.

The work hinges on a discovery of Dr. Max Theiler, formerly of Harvard University. It had never before been possible to give yellow fever to mice, but only to monkeys. Efforts to obtain a strain of the virus from recovered monkeys for immunization purposes were unsuccessful.

Dr. Theiler found that when he injected an irritating substance into the brain of a mouse at the same time that he injected the yellow fever virus, he could produce the disease in the mouse. When Dr. Sawyer heard about this he at once sent for Dr. Theiler to assist with the experiments he was conducting in laboratories provided by the Rockefeller Institute in a desperate effort to find a way of checking the disease that was taking such a dreadful toll of scientists and others.

Yellow fever virus from monkeys that have had the disease is too virulent



## UGLIER THAN BIG

*Like some nightmare creature of the earlier Wellsian imagination, this rhinoceros iguana in the New York Zoological Park seems—until one learns that he isn't nearly so big as he is ugly. He is as much smaller than a man as a dinosaur would have been bigger than a man—had there been any human beings on earth in those long-gone Days of Dragons.*

to be used for immunization, but the mouse virus has been successfully weakened by passing it through two hundred mice. This weakened serum is then given together (*Please turn page*)

GEOLOGY

# Tiltmeters Make Possible Prediction of Earthquakes

**E**ARTHQUAKES may be predicted, subterranean movement of lava before volcanic eruptions detected, and other small but important shifts in the earth's surface observed by means of delicate instruments known as tiltmeters. The varied usefulnesses of tiltmeters were outlined before the meeting of the American Geophysical Union by George E. Merritt of the U. S. Bureau of Standards.

Tiltmeters are built in several different patterns, but all types of the instrument depend on one of two general principles. Either they measure the tilting of the earth's surface by the change in position of a delicately balanced pendulum, or they make use of the "in-

terference" of light reflected from two nearly parallel surfaces, one of which is a liquid which naturally maintains a horizontal position in response to the pull of gravity, while the other surface is secured to the rock whose movement is to be measured and shifts with it. The "interference" method permits the construction of more rugged instruments, and also their operation at the bottom of deep, narrow pits and in other awkward places where pendulum tiltmeters would be harder to handle.

Tiltmeters may have considerable application in the measurement of movements in floors, pavements, piers and similar structures where only a small change in position can be tolerated.

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