ENTOMOLOGY

Death Rays Kill Insects

➤ A "DEATH ray" machine which will kill fruit flies and other insects contaminating food and commodities is now being used in experiments by the U. S. Bureau of Entomology and Plant Quarantine. The experiments were described in a speech by A. H. Yeomans of the bureau.

Using 2,500,000 volts, the experimental model shoots electrons at the insects in blasts lasting only one-millionth of a second. At a range of 12 inches, the electrons kill insects over a 14-inch square.

The machine used is called a capacitron, first developed by the Electronized Chemical Company, New York, for sterilizing and preserving foods. Experiments in killing insects with the "death ray" machine were begun at the request of Hawaiian agricultural experts who were worried about the presence of fruit flies in food exported from the islands.

The government entomologists are experimenting with the machine to determine whether the rays will harm the food for human use. The makers of the machine are pretty sure the rays will not be harmful to humans.

If the machines prove successful, they could be set up at ports of entry, or in warehouses where food is stored after it enters this country.

So far the rays have killed mosquitoes, fruit flies, carpet beetles, flour beetles and other kinds of insects. They work as well on insects in the egg or larva stage.

The one-millionth of a second blast sounds like a rifle shot and looks like a burst of flame, according to Mr. Yeomans.

Science News Letter, March 25, 1950

MEDICINE

Heart Uses Real Blood

➤ THE first artificial heart which pumps untreated blood from a real heart through a kidney or other organ and back to the real heart through a jugular vein has been devised by Dr. Lucien Brull of the University of Liege, Belgium. A preliminary announcement of this feat appears in SCIENCE (March 17).

Artificial hearts heretofore devised have pumped a salt solution or some blood substitute or, in some cases, blood which has been treated with heparin to keep it from clotting. In studies of the liver or kidney or various glands of the body, using a blood substitute is not entirely satisfactory because this creates a condition not normally present in the organ studied.

The artificial heart devised by Dr. Brull takes advantage of the fact that blood does not normally clot when it is in contact with the innermost lining of veins and arteries. It is constructed out of tubes which are lined with pieces of the aorta and other arteries and veins. A roller-pulley does the pumping to propel the blood through the artificial heart, the organ under study and back to the heart again.

The speed of the pulley can be regulated to vary the number of beats. The output of such a heart can easily reach up to one quart or more per minute against a pressure varying from the normal to 300 mm.

Results of experiments with the heart furnishing blood to a kidney will be reported at the International Congress of Physiology this summer.

Science News Letter, March 25, 1950

Question Box

ASTRONOMY

How does Dr. Payne-Gaposchkin refute Velikovsky's theories? p. 181.

GENERAL SCIENCE

What are some of the possible solutions to the flying saucer mystery? p. 188.

What government bureaus have come out against the national science foundation bill? p. 183.

MEDICINE

What is the latest achievement of the isolator of ACTH? p. 179.

What kind of blood or solution has been used heretofore in artificial hearts? p. 180.

PHYSICS

How fast can a pellet move through water? p. 182.

What is element 98? p. 182.

PSYCHIATRY

What is the best truth serum yet found? p. 188.

Photographs: p. 179, Carl Byoir and Associates; p. 181, Massachusetts Institute of Technology; p. 183, Warman, Columbia University; p. 192, Tennessee Eastman Corporation.

● RADIO

Saturday, April 1, 3:15-3:30 p. m. EST

"Adventures in Science" with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Mr. David Baldwin, Director of traffic and transportation of the National Safety Council, and Mr. Nils Lofgren, Driver Education Consultant of the National Safety Council, will discuss "Training Teen-Age Drivers in High School."

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