BACTERIOLOGY-PHYSICS

Germs Killed in Laboratory By High-Pitched Sound Waves

Audible Wave So Intense As To Be Called "Terrific Squeak" Used To Destroy Bacteria; Also Kills Red Blood Corpuscles

AUDIBLE sound waves, so high-pitched and so intense as to be best described as a "terrific squeak", have been used to kill bacteria by Prof. O. B. Williams of the University of Texas, bacteriologist, and Prof. Newton Gaines of Texas Christian University, physicist.

Sound waves of much higher pitch, so high as to be wholly inaudible, have in the past been used with fatal effect on living things, the pioneer experiment in this field being performed at the private laboratory of Alfred L. Loomis, banker-scientist of Tuxedo Park, N. Y. But the Texas experiments were the first in which audible sound waves were shown to be effective.

Prof. Williams and Prof. Gaines produced their sounds by means of a nickel tube, caused to vibrate at the rate of about 8,800 oscillations per second by means of powerful electromagnetic coils wound about its lower end. The oscillating current was supplied through 250-watt radiotron tubes, such as are used in radio broadcasting stations, carrying a plate voltage of about 2,000.

The upper end of the tube was set in an inverted bottle and surrounded with water. When the current was turned on, the vibration was so intense as to cause a little mound of water to rise a couple of inches above the surface.

A flask, containing the bacteria to be "rayed", was lowered into this turbulent water mound. The sound waves passed through the glass into the fluid containing the germs, causing a disturbance similar to that which was raised in the water.

Bacterial cultures "rayed" for 10, 20, 30, 40, 50 and 60 minute periods were compared for numbers of survivors. It was found that a definite mathematical relation exists between the time of exposure and the number of survivors. At the end of one hour in the field of the waves there were less than half of the initial number of bacteria left alive in the flask.

The waves have also been tried on red blood corpuscles and have been found to be destructive to them. This is in line with similar experiments performed at Tuxedo Park, where supersonic waves of ten to a hundred times the frequency were used.

Science News Letter, March 21, 1931

ASTRONOMY

Latest "Comet" May Have Been Tiny Planet

NAKAMURA'S "comet", which has appeared in astronomical lists as the latest to be discovered, may really have been an asteroid, or tiny planet. It was first found by means of photography from the Kwasan Observatory in Japan on November 14 by K. Nakamura. When a few later observations were made at the same observatory a calculation was made of its path, which seemed to indicate that it was a comet. But even though these data were circulated throughout the world, no other astronomers were able to locate it.

In a recent letter from Mr. Nakamura, just received by Dr. George Van Biesbroeck, of the Yerkes Observatory, the discoverer gives some of the details of the discovery of the object. These reveal that it was observed until November 29 at the Kwasan Observatory, but then completely disappeared from view. Mr. Nakamura stated that he is now calculating a new orbit, from all the plates made, and this should solve the mystery as to whether it was a comet, or an asteroid.

If it was not a comet, recent months have been singularly unproductive of cometary discoveries. The last before Nakamura's supposed discovery was on September 22 when Dr. Van Biesbroeck located Tempel's second periodic comet on one of its regular returns. The last discovery of a new comet was on June 2, when D. L. Forbes, in South Africa, found one of the ninth magnitude that was given his name.

Science News Letter, March 21, 1931

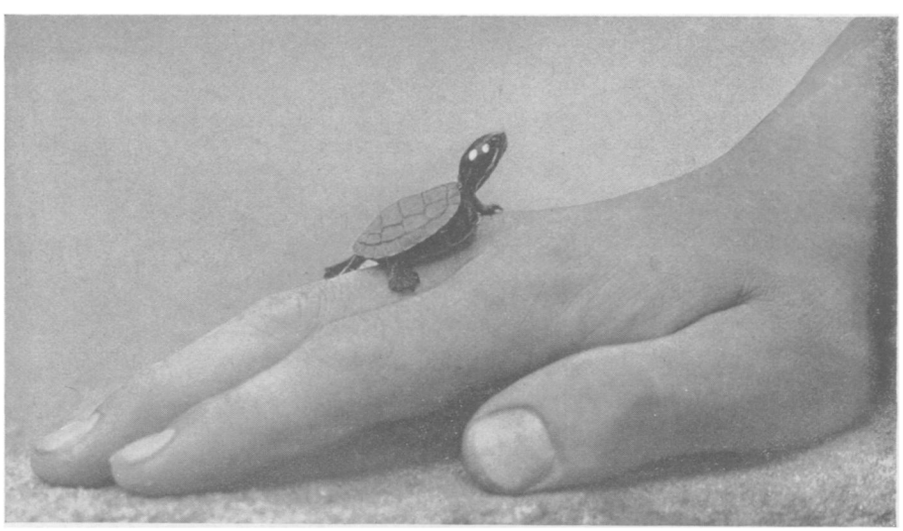
ECONOMICS

Housewife's Market Habits Affect Grocery Prices

THAT the modern housewife's fondness for small quantity marketing is often costly and may prove more so, is the warning issued by Miss Day Monroe of the New York State College of Home Economics.

Small quantity buying takes more of the grocer's time and adds to his expenses. And whatever buyers do to raise the cost of retailing they must pay for in higher prices to keep the grocers in business. Despite this fact, dealers report the practice of buying small cans and jars and small quantities of fresh foods is continually increasing.

Science News Letter, March 21, 1931



BABY TURTLE

Like a baby chick: very small as compared to its eventual size, and very naive and trustful. Photo by W. H. Carr, courtesy American Museum of National History.