BIOLOGY

Trichinosis Danger May Be Eliminated by New Inspection

Simple Skin Test Costing Less Than Half Dollar Per Pig Is Accurate to Within Less Than Three Per Cent

A PRACTICAL plan for the eradication of dangerous trichinosis, at a cost of from 25 to 50 cents per pig slaughtered, was presented by Prof. Thurlow C. Nelson, of Rutgers University, before the meeting of the American Association for the Advancement of Science. The plan depends on widespread use of a new, simple skin test for trichinosis developed by Drs. G. W. Bachman, D. L. Augustine and Hans Theiler. It has been used successfully by the New York City Health Department during the past 18 months.

"Every seventh to tenth garbage fed pig slaughtered in this country today is wormy, infected with the most dangerous worm known to man," Prof. Nelson declared.

Humans eating the meat of such animals, unless it is thoroughly cooked, may develop the serious and often fatal malady, trichinosis. Federal health service estimates show that the trichinosis problem involves some 17,000,000 people, several hundred thousand of them suffering the disease, and probably several thousand dying from it every year.

By Prof. Nelson's plan the new skin test would be made of every hog slaughtered, both in commercial packing houses and on farms slaughtering for home and local consumption. The cost of this, once arrangements are made, need not be more than 50 cents per animal, and may be as low as 25 cents. The New York experience with the test shows it is accurate to within less than 3%, and the error is in the direction of safety, since with one exception all the mistakes made were diagnoses of trichina infection where it did not exist.

Science News Letter, January 13, 1940

Vaccination For Birds

VACCINATION against malaria, in birds, but unfortunately not in man, was announced by Dr. W. B. Redmond, of Emory University, Atlanta, Ga. Whether the method can be applied to human malaria was not stated in Dr. Redmond's report of his work.

The successful vaccine was prepared by killing the malaria parasites or germs in the red blood cells without destroying these cells. This was accomplished by subjecting the cells with the germs in them to subzero temperature in a solution of urea and sodium citrate.

Science News Letter, January 13, 1940

New Maple Disease

BLEEDING canker, a new plant disease that attacks maple trees, has been found in Rhode Island, Drs. Frank L. Howard and N. Caroselli of the Rhode Island Agricultural Experiment Station reported. The principal symptom is a reddish ooze from small fissures in cankers of the trunk and main branches. Inner bark and sapwood develop a reddish-brown lesion, often with an olive-green margin. Secondary symptoms include wilting of leaves and dieback of branches, produced by a poisonous secretion of the causal fungus. This fungus belongs to the same genus as the one that causes potato blight, one of the worst of crop plagues.

Science News Letter, January 13, 1940

Salmon Migration Theory

A PHYSICO-CHEMICAL theory of salmon migration was advanced by Prof. Edwin B. Powers of the University of Tennessee. Instead of obeying some mysterious, semi-supernatural "homing instinct," the fish merely swim up the stream that brings them the lowest concentration of carbon dioxide, is Prof. Powers' belief. River waters mixing with sea water lower the concentration of carbon dioxide, and the salmon find the river mouths simply by going toward the lower carbon dioxide concentration waters.

Science News Letter, January 13, 1940

Plants Poisonous to Pest

THE BRAGGING old cowboy song, that modestly states, "Rattlesnakes came out and bit me, and then crawled away and died," finds realization for greenhouse plants when they are given two or three parts of the poisonous element selenium per million of the nutrient solution in which they are grown. Such plants are completely freed of the attacks of red spider, one of the worst of greenhouse pests, yet show no ill effects in their own growth, it was stated in a report presented jointly by Drs. V. H. Morris, C. R. Neiswander and J. D. Sayre of the Ohio Agricultural Experiment Station.

Science News Letter, January 13, 1940

Tear Gas For Tomatoes

DISAGREEABLE as it is to human beings, tear gas (chloropicrin) is very good for tomatoes, when used as a soil fumigant. Tomatoes thrive amazingly in soil that has been thus treated. Drs. Fred K. Crandall and Frank L. Howard of the Rhode Island Agricultural Experiment Station related how tomatoes raised on chloropicrin-treated soil increased their yield by 132% in 1937, by 378% in 1938, and by 246% in 1939, as compared with check plants grown on untreated soil.

Science News Letter, January 13, 1940

Stored Fruit Loses Vitamin

TANGERINES kept in storage too long lose a considerable part of their value as source of vitamin C (ascorbic acid), Dr. Cyril O. Bratley of the U. S. Department of Agriculture stated. In his experiments, numbers of the fragrant citrus fruits were kept in storage for eight weeks at various temperatures. Loss was greatest at the higher temperatures: one-eighth of the vitamin vanished at 32-33 degrees Fahrenheit, but at 45-48 degrees the loss rose to one-third.

Science News Letter, January 13, 1940

Clues to Rhythms

IMPORTANT clues to the little understood biological rhythms which induce such animal cycles as sleep, reproductive activity and hibernation have been found in daily color changes in the eyes of crayfish, Dr. John H. Welsh, Harvard Biological Laboratories, reported.

The theory that there is a "sleep center" in the brain which acts as an internal master-clock of human activity is definitely refuted, Dr. Welsh said, by his studies, which were made on crayfish and rats living continuously in dark, soundproof rooms. *(Turn to Page 28.)*

instances, men of letters reflected in their work the stimulus of new scientific ideas."

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"Blueprint for After War"

A POST-WAR world from which mammoth armed nations shall have disappeared like the over-muscled, under-brained dinosaurs of old was forevisioned by Dr. Julian Huxley, noted English zoologist and grandson of the great friend and champion of Darwin. Dr. Huxley, who is secretary of the London Zoological Society, spoke on an exchange arrangement known as the British and American Association Lectures.

After the war, change is inevitable, the speaker declared, and he insisted that stubbornly conservative resistance is "not only useless but immoral." Nevertheless, change cannot come as quickly as some impatient men may demand:

"The zeal of the revolutionary for getting rid of the old system root and branch is thus likely to be wastefully destructive and in the long run to delay progress."

However, although the great power-states must go like the dinosaurs, a development of small, flexible nations like the mammals that followed the dinosaurs was not foreseen by Dr. Huxley. Such particularism is precluded by the complexly integrated state of human society all over the world. He visioned a federal system for world peoples, beginning probably on the basis of great regions but aiming eventually at complete world unity.

Throughout, Dr. Huxley cautioned against haste. He does not believe that Europe, for example, is yet ready for as close a union as that of the United States, but he does feel that something closer than the present League of Nations organization is essential. He pictured a League having its own administrative set-up, its own budget, its own armed forces, and especially an organization for the promotion and application of scientific research.

Science News Letter, January 13, 1940

PHYSICS

Water Obtained Solidified In The Form of Glass

Thin Stream Passed Between Metal Disks Chilled To Liquid Air Temperature in Novel Experiment

WATER solidified in the form of glass was described by Dr. B. J. Luyet of St. Louis University before the American Association for the Advancement of Science in Columbus.

Dr. Luyet passed a thin stream of water from a pipette between two metal disks chilled to liquid air temperature. One disk was fastened behind the stream and the other disk was driven against the stream by the spring of a toy pistol. Thin layers of solid water were thus obtained. When removed to a Nicol analyzing microscope apparatus using polarized light, the frozen films stayed dark between crossed Nicols until the stage of devitrification occurred as the temperature rose.

Science News Letter, January 13, 1940

Thin Films on Lenses

THIN FILMS of evaporated metallic fluoride on an f:2 camera lens increase the speed of the very fast lens by a factor of two, Dr. C. Hawley Cartwright of Massachusetts Institute of Technology told the physicists.

At the same time, he said, the troublesome "ghost" images which occur under adverse lighting conditions disappeared.

The increase in lens speed is rather subjective, he pointed out, for the added transmission of the lens is accompanied also by more contrast and by an observable increase in detail in the picture.

Science News Letter, January 13, 1940

Rouge Becomes Shutter

MOST remote from Milady's thoughts as she applies rouge to her face is the experiment reported to the meeting of the American Physical Society in which rouge is heated to increase its ferromagnetism and then used as a shutter to govern intensity of a beam of light.

Prof C. W. Heaps of the Rice Institute, Houston, Texas, took ordinary rouge, heated it, and then stirred the powder in water or oil.

Held in suspension, the magnetic rouge particles have at first a random sort of orientation. If a small hand magnet is brought near the container, however, the little rouge magnets line up. If their long axis is at right angles to a beam of light, the intensity of the light will be greatly diminished. If the hand magnet is moved so that it orients the rouge magnets parallel to the light beam, the light transmission is increased. Prof. Heaps was thus able to make a light shutter which can be controlled by the strength of the magnetic field.

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Although the work was done on a low animal form, it represents, Dr. Welsh said, a definite step toward explaining the causes and nature of human sleep, one of science's major mysteries.

Nervous activity, gland secretions and general metabolism are interlocked in a complex chain of events to cause the daily color or pigment changes in the eye of the crayfish, Dr. Welsh found. This daily color change is a typical daily internal animal rhythm.

Many studies of persisting 24-hour animal rhythms have been made previously but this research on the crayfish has provided the first satisfactory experimental evidence of a complete internal series of events capable of keeping such a cycle in operation.

Science News Letter, January 13, 1940

Snakes Have "Ersatz" Eyes

THE EYE of a snake is an "ersatz" organ, declared Dr. Gordon L. Walls of the Wayne University College of Medicine, speaking before the American Society of Zoologists. Snakes are known to have evolved from lizard ancestors, and