

ANIMAL HUSBANDRY

Pigs Thrive on Eggs Spoiled in Incubators

Possible use for eggs that fail to hatch in incubators is suggested by a series of experiments conducted at Cornell University: feed them to pigs.

Two pigs were fed on a mixture of ground corn and eggs that had failed to hatch after 21 days of incubation. Unappetizing as the diet may seem to human imagination, the pigs apparently liked it, and gained nearly a pound a day on it.

The record is all the more noteworthy, since raw egg white usually disagrees with animals receiving it in too large quantity. Two possible explanations are suggested: either the pig has a special set of digestive enzymes that can handle raw egg white, or the incubation amounts to a kind of long, slow cooking process.

The experiments were performed by a four-man research team consisting of J. P. Willman, C. M. McCay, O. N. Salmon and J. L. Krider. They are reported in the first issue of a new scientific publication, the *Journal of Animal Science*. (Reviewed, SNL, this issue.)

Science News Letter, March 28, 1942

PUBLIC HEALTH

Care of Babies During Air Raids Is Explained

IF AN air raid comes, never let the baby suspect how scared you are. Compel yourself to an appearance of calm at least, so that the child's confidence in your protectiveness may be unshaken, advises the American Committee on Maternal Welfare. The Committee has drawn up a set of instructions for the care of babies during air raids. (*Journal, American Medical Association, March 21.*)

It is inadvisable even to talk about air raids in their presence, no matter how young, the Committee declares. Children frequently understand more "grownup talk" than their elders suspect, and terrors impressed on young minds may result in life-long mental maladjustments. It is stated that many problem cases among grownups of the present generation in Europe are traceable to their parents' unguarded talk during the first World War.

Some suggestions by the Committee: "When the raid signal sounds, the first move should be in the direction of the nearest shelter. If there is no shelter, take

the baby to the safest room in the house or to a closet under the stairs or under a table or bed, so that he may be protected from flying debris, which presents the most frequent danger.

"Take with him garments enough to keep him warm according to the season, a basket or pillow on which he can lie, a first aid outfit in case of need; a toy to amuse him; his bottle of milk and bottle of water, together with extra diapers and related equipment. The baby's ears should be blocked with cotton to minimize the effects of concussion, leaving plenty outside so that it may be easily withdrawn afterward.

"If the raid should come while the baby is away from either house or shelter—for an airing in the park, for instance—find the nearest wall or ditch, however low, place the baby on the ground beside it, with pillows from the baby carriage or a heavy coat under and over him, and lie down beside him."

Science News Letter, March 28, 1942

ENGINEERING

American Tanks Best Because of Engine Power

American tanks get the better of their opponents very largely because of their great engine power, declares Brig. Gen. G. M. Barnes (*Army Ordnance, March-April*). Compared with their European "opposite numbers," our tanks have twice the horsepower per ton of weight, he states. This gives them greater speed and maneuverability, enabling them to get into positions where their formidable gun power can be used to greatest advantage, and also making them fleeting targets that enemy anti-tank guns find it difficult to hit.

This advantage, already well demonstrated with our light and medium tanks in recent fighting in Libya, has been built into the new 60-ton "heavies" as well. Says Gen. Barnes:

"While there are heavy and supertanks in existence in Europe, there is no vehicle known to exist which would approach the American 60-ton supertank in regard to power of weapons carried and horsepower of engine used to drive it at high speeds across country. The Ordnance Department has maintained in this vehicle the same high horsepower-weight ratio employed in the designs of its light and medium tanks so that the cross-country mobility of the vehicle should in every way duplicate that of the smaller vehicles developed previously."

Science News Letter, March 28, 1942

IN SCIEN

BIOLOGY

American-Grown Supply Of Rat Poison Available

RED SQUILL, one of the most effective rat poisons, may be obtained from American-grown sources, thanks to a "fortifying" process developed by Glen Crabtree, biologist at the Wildlife Research Laboratory. The poisonous drug has always been imported from the Mediterranean region, and this source has now been cut off. Red squill has been grown in this country, but for some unknown reason the American-grown bulbs have never been sufficiently toxic to kill rats.

Mr. Crabtree's process consists simply in extracting the poisonous principle from pulverized American bulbs with alcohol, and adding it to other dried squill to raise its level of toxicity.

Large supplies of effective rat poison are needed more than ever, now that necessary protection of Army cantonments has been added to the already existing danger of these plague-carrying pests, and the \$189,000,000 worth of property damage yearly for which they are held responsible.

Science News Letter, March 28, 1942

ASTRONOMY

Star-Like Object May Be Year's Second Comet

FROM Finland comes news of a mysterious celestial object traveling rapidly northward in the same part of the sky that was traversed a few days ago by Whipple's comet. If the new object turns out to be a comet, it will be the year's second, Whipple's being the first. The discovery was made March 12 by Y. Vaisaëla, director of the Observatory of Turku, Finland.

The Harvard College Observatory, clearing house for astronomical information, received the news and transmitted it to American observatories. None of these has as yet confirmed the discovery, and the Harvard astronomers have been unable to find the object on their patrol plates.

Science News Letter, March 28, 1942

CIE FIELDS

PHOTOGRAPHY

Army Planes Photograph By Brilliant Flash

HOW U. S. Army planes can photograph enemy territory at night without themselves being seen was revealed by Ernest E. Johnson of the General Electric Company in a forum address.

Photographic planes drop flares that light up the countryside below very brilliantly for just an instant. The camera shutter in the plane is synchronized with the flash by means of a photoelectric cell. The flash is so brilliant and blinding that no one from the ground can see anything above. The plane carries home photographs that tell much more than the unaided human eye could ever see.

Science News Letter, March 28, 1942

BIOLOGY

No Rest For Living Cell Even At Start of Growth

A LONG-SOUGHT clue to a more complete understanding of the living cell, the basic unit of all life, has been found in experiments with the atom-smashing cyclotron at the University of California.

An investigator has shown that in the first stage of development of the cell, which is called the resting phase, and during which time the cell is supposed to remain inactive, this tiny unit of life is constantly changing.

One function of the cell is to reproduce, and it does this by progressing through a number of fairly definite stages until it finally splits into two cells.

It is the simplest biological unit, consisting of a nucleus with chromosomes, rod-like structures considered to be the carriers of genes, chemical entities which determine heredity.

According to classical biological teachings the cell in the resting phase is inactive. In the second phase of development the number of chromosomes doubles, in the third the membrane around the cell nucleus disappears, and in the final stage the cell splits in two.

The new cells enter immediately into the resting stage, and according to the theory remain dormant for a while before they start the cycle over again.

The new findings were brought out in experiments with cancer and plant cells by Dr. Alfred Marshak, research fellow in the Radiation Laboratory.

Dr. Marshak bombarded the cells with both X-rays and the neutron rays produced by the cyclotron, and made a comparison of the damage to the chromosomes of the cells in the resting phase.

The investigator found that neutrons produced relatively more damage to chromosomes in the resting phase. At certain definite periods in this phase the relative efficiency of neutrons in producing this damage is much greater than at others.

Dr. Marshak said this clearly indicates distinct physiological states, rather than one inactive phase. He said that he has no idea of the character of these states, but that the evidence does give science a new clue to the functioning of life's simplest unit.

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POPULATION

American Population Is Becoming Stationary

AMERICANS are probably headed toward a stationary population and perhaps even a declining one, according to findings of statisticians of the Metropolitan Life Insurance Company.

To reach this conclusion, statisticians studied fertility rates in this country for the past twenty and more years. Fertility rates, it is explained, may be measured by the number of daughters born annually to a thousand women within the child-bearing age groups. For each of seven age groups the fertility rates dropped in passing from 1920 to 1930 and again to 1940.

As a result, the rate of population increase fell from 8 persons per 1,000 in 1920 to one person per 1,000 in 1940. For 1941 the rate increased to 2.8 per 1,000 due to more prosperous times and increased marriage rates due to the war.

It is pointed out, however, that "with a large element of our able-bodied men in the armed services—and the consequent disruptions of family life and postponements of marriage—the effective fertility of the American people is likely to fall below the level required to maintain a stationary population."

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VETERINARY MEDICINE

Sulfa Drug Effective Against Poultry Disease

SULFAGUANIDINE, one of the more recently developed drugs of the sulfa group, has been found effective in the treatment of cecal coccidiosis, one of the most troublesome of poultry diseases, by Dr. J. R. Beach of the University of California College of Agriculture. Dr. Beach is now engaged in experiments to determine the possible value of the drug in other related poultry maladies.

As yet, the treatment is on an experimental basis, for sulfaguanidine has not been released for general use and is still quite expensive. Its cost may be brought down, however, if a large-scale use can be found.

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GEOLOGY

Adirondacks Half as Old As Is the Earth Itself

THE Adirondack mountains are half as old as the earth itself. New measurements of the age of these northern New York uplands, based on the relative amounts of thorium and lead in one of the minerals found in them, indicate an antiquity of 1,100,000,000 years. This confirms an earlier estimate, made in 1939, based on a different mineral. The Adirondacks are of the same age as the Laurentian highlands, a much larger ancient mountain mass in Canada, on the other side of the St. Lawrence river, and separated from the Adirondacks by a wide zone of much younger rocks.

The new age determination was made on a mineral known as allanite, specimens of which are in the U. S. National Museum, by Dr. J. P. Marble of the National Research Council's committee on the measurement of geologic time. The 1939 determination, made on a uranium-containing mineral known as uraninite, was carried out in a laboratory in Vienna, now inaccessible because of the war.

Age determinations of this kind are based on the fact that radioactive elements like thorium and uranium undergo a series of breakdowns, during which they gradually change into lead. Since the rate of the element-changing decay is known, the age of the rocks can be calculated from the relative amounts of radioactive element and lead present in them.

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