

## BIOLOGY

## Oysters Need Manganese To Make Them Mothers

**M**ANGANESE, the mother love metal, is needed by oysters no less than by higher animals if they are to function as mothers, Dr. Paul S. Galtsoff of the U. S. Fish and Wildlife Service reported to the American Society of Zoologists in Philadelphia. He found a marked rise in the amount of manganese present in oysters when their eggs were developing and ripening. This manganese content, moreover, was concentrated principally in their ovaries. Concentration was relatively low in other tissues, as it was also in the reproductive organs of oysters in the male phase of their existence.

This represents an extension of the known connection between manganese and maternity. Some time ago, other zoologists showed, in experiments with rats, that female animals on manganese-deficient diets might produce young but they would not suckle or otherwise take care of them. Apparently the Colonel's Lady (if she is a good mother) and the oysters she eats are physiologically "sisters under the skin."

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## BACTERIOLOGY

## Ultraviolet Light Plays New Detective Role

**I**NVISIBLE ultraviolet light, already used by G-men in running down foreign espionage agents and public enemies, acts as a detective in finding potatoes guilty of spreading one of the worst diseases of that important crop.

Prof. R. B. Harvey of the University of Minnesota told the American Association for the Advancement of Science of his experiences with a method for using this radiation in finding and eliminating carriers of bacterial ring rot.

Appearing only a few years ago, ring rot has already struck in 37 states, in some regions destroying 50% or more of the crop. Plant pathologists, cooperating in many states, discovered that the germ does not live in the soil but comes in with the seed. If the farmer doesn't plant it he won't have it.

In cutting the seed, the farmer spreads ring-rot germs on his knife, from a few diseased tubers to many healthy ones. This much was already known, but scientists did not know how to detect the diseased potatoes quickly and cheaply.

Then it was discovered that if ultra-

violet rays are turned on a lot of seed potatoes in the dark, the good ones remain invisible but the diseased tubers glow with a ghostly, greenish light that makes them easy to detect and cull out. The grower gets complete protection if he uses certified seeds that have been so treated.

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## AGRICULTURE

## Mountain Strawberries For Hardier Hybrids

**H**ARDIER strawberries, suitable for growing in parts of the country that cannot now produce strawberries successfully, are the promise of hybridization experiments involving wild strawberry species from the Rocky Mountain region, reported to the American Association for the Advancement of Science by Dr. A. C. Hildreth and Dr. LeRoy Powers. Present cultivated strawberries just can't "take it" from the winters of the northern Great Plains and the western mountain valleys and plateaus, where the cold is often intense, the winds high and dry, and snow cover scanty. The hybrids between wild and tame strawberries reported by Drs. Hildreth and Powers are not ready for general use yet, but they are regarded as giving promise of really good berries after further cross-breedings.

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## CHEMISTRY

## First High-Powered Look At Soap's Twisted Fibers

**B**Y AID of an electron microscope, magnifying reality 113,000 times, scientists have seen with their eyes into the mystery casually referred to as soap.

Soap is revealed as consisting of bundles of fibers, some of them twisted, reports Dr. J. W. McBain, Stanford University professor of chemistry, who becomes the first human being to observe the basic structure of soap.

Possibility that soap may be photographed in even greater minuteness, showing the very atoms that make up the molecules, is foreseen, as the next step toward solving soap secrets. Scientists admit that they still do not know what happens chemically when you wash your hands with soap.

Dr. McBain believes that when the physical structure of soap is understood, it will be easier to grasp the slippery chemical problem of what causes soap to dissolve dirt.

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## MEDICINE

## Diagnose Pancreas Tumors By X-Rays of Stomach

**T**UMORS of the pancreas can be diagnosed by X-rays, not of the pancreas, but of the neighboring stomach and duodenum, Dr. Samuel J. Brown, Dr. J. E. McCarthy and Dr. Archie Fine, of Cincinnati, announced at the meeting of the Radiological Society of North America in Cleveland.

Histories of 12 cases in which the diagnosis made in this way helped to successful treatment were reported.

The way in which the stomach, or the portion of the small intestine called the duodenum, are pushed out of place or out of shape, as shown by the X-rays, gives the clue to diagnosis of tumor of the pancreas, it was explained. The change in shape or location is caused by pressure from the tumor. Because the stomach and duodenum occupy a definite place in the abdominal cavity and are movable organs, their position, shape and distribution depends on the position, shape and size of neighboring organs. Changes occurring in the stomach and duodenum show certain characteristics, depending on the organ involved.

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## PLANT PHYSIOLOGY

## Birth Control for Apples May Come From Experiment

**B**IRTH CONTROL for apples, to break up the inconvenient habit certain trees have of producing huge crops one year and practically none the next, is a possible outcome of experiments reported by J. R. Magness and L. P. Batjer of the U. S. Department of Agriculture. They succeeded in breaking the rhythm of bearing in some of these "two-year" apple trees simply by spraying the buds, just as they began to show pink, with caustic chemicals that killed the flowers. The following season, when ordinarily the trees would have borne little or no fruit, they produced plenty of apples. The happy mean, a method whereby only part of the superfluous buds can be killed and equal crops produced every year, is still being sought.

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# SCIENCE FIELDS

## LANGUAGE

## Scouts Save Sign Language If Indians Want It Again

IF AMERICAN Indians of the future want to learn their own sign language, they may have to call in Boy Scout teachers, for youngsters are now the main students keeping alive this communication system.

Deploring oblivion into which Indian talk-without-talk has sunken—except in Boy Scout circles—Robert Hofsinde, writing in *Natural History*, urges reviving signs as a simple universal language for world use.

Sign language, he says, is spoken fluently in the Indian world only by a few aged Indians, now. Once, on the Plains, 15 or 20 tribes speaking different languages conversed by signs, demonstrating the practical usefulness of universal sign talk.

Using only 169 gestures, Mr. Hofsinde can tell a story that calls for about 1,000 words in English.

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## ARCHAEOLOGY

## Mummy of Wah Unwound But Put Together Again

HOW to take the mummy of a 4,000-year-old Egyptian business man apart, and keep the whole mummy, too, is a Humpty-Dumpty puzzle, but the Metropolitan Museum of Art has found a clever solution.

To satisfy scientific curiosity, the Museum's Egyptologists have finally unwound this mummy of a man named Wah, to examine jewelry which X-rays tantalizingly revealed in the swathed interior. The jewelry becomes a new exhibit of considerable public interest in the Museum, showing patterns of silver and gold bead necklaces, and others made of amethyst, moss agate, porphyry and other stones, worn by well-dressed Egyptians about 2000 B. C.

Making a faithful replica of Wah's mask and shawl and other windings—but minus the jewelry inside—the Museum has found its way to retain for exhibit the appearance of Wah as the modern world first met him.

"Only another X-ray could prove that it is not the original," says Dr. Herbert E. Winlock, director emeritus and noted Egyptologist of the Museum, praising accuracy of the result, which of course is now labeled as a replica.

Wah, who was an estate manager in Thebes, is shown by his gilded face mask as a man of rather pinched face, with tiny mustache and scant whiskers at the jowls. Egyptian funerary workers added to this portrait a conventionalized wig of light blue and dark green stripes and a crudely painted collar of red, blue and green beads, which Dr. Winlock calls "a barbarous-looking affair," done by the local labor in Thebes. Thebes later became an important city, but in Wah's day it was just a countrified town.

The workers were careless, too. Egyptologists found a mouse, lizard, and cricket all trapped in sticky pitch that held the linen windings in place.

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## OCEANOGRAPHY

## Flash Photos Taken Of Bottom of the Ocean

NO PLACE in the world, not even the bottom of the ocean, is safe from the prying eye of the candid camera and its accompanying flash bulb. A new kind of deep-sea photography, of use in fisheries management, was described before the meeting of the Limnological Society of America by Prof. George L. Clarke of Harvard University and the Woods Hole Oceanographic Institute. Prof. Clarke told of the biological application of apparatus invented by Dr. W. Maurice Ewing of Lehigh University for purposes of geographical research.

Dr. Ewing's deep-sea flash-bulb camera can be lowered to a position near the bottom, where it gets a snapshot of an area about 2 1/2 by 3 1/2 feet in size. It has worked successfully in waters from about 125 feet to more than half a mile deep.

Photographs taken in the waters of Georges Bank, famous fishing ground northeast of New England, show a dense bottom population of animals, said Prof. Clarke. There are crabs, a sea-snail, starfish, sea-urchins, sand-dollars, deep-sea scallops and other shellfish, tube-building worms, and sponges. In two of the photographs the sand-dollars are so numerous that they are actually piled on top of each other. Singularly enough, however, no sign of plant life could be found on any of the photographs.

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## BIOLOGY

## "Jelling" of Protoplasm Goes With Anesthesia

WHEN you can't smell the ether any more, and the voices of the doctors and nurses have faded into silence, and you sink comfortably into the dark and stillness—that means that the protoplasm in whatever of your cells are essential to consciousness has "set" and become jellylike rather than fluid.

A theory that anesthesia consists in the "jelling" of protoplasm was offered before a symposium on protoplasmic streaming by Prof. William Seifriz of the University of Pennsylvania. The symposium was held as part of the meeting of the American Association for the Advancement of Science.

Prof. Seifriz has devoted a quarter-century of research to the properties of protoplasm, principally as evinced in the lowly organisms known as slime-molds, whose bodies consist merely of blobs of naked protoplasm. Treating these primitive forms of life with various anesthetics, he found that the streaming movement that goes on almost incessantly in its protoplasm stopped for some of the drugs, but apparently was immune to the effects of others. In every case where the streaming stopped, Prof. Seifriz found, the protoplasm had set into a jelly-like consistency, instead of the viscous fluid which is its usual state.

"The gelatinization of protoplasm reduces all physiological activities, including irritability, to a minimum, and this is anesthesia," he concluded.

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## ENGINEERING

## New Exposure Meter Measures Light on Subject

ANY amateur photographer who has ever been bothered about making the correct exposure will be interested in a new light meter described to the Society of Motion Picture Engineers by Captain Don Norwood, retired U. S. Army officer. Negative exposure control can now be put on the basis of an exact science, he declared.

The meter measures the direct light, at the source, rather than that reflected from the subject, and its calibrations show how to set the lens. He stated that reflectance problems occasioned by different tones, colors and shades are compensated for, while effects of contrast, haze, color, etc. which are factors ordinarily inviting errors, are eliminated.

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