

## MEDICINE

**Aureomycin May Be Remedy Against Whooping Cough**

► YOU'LL give a hurrah but not a whoop about this: Aureomycin, golden-yellow antibiotic drug, is apparently going to take the whoops out of whooping cough. U. S. Public Health Service scientists announce that it has given "beneficial results" in 20 patients.

Some who got it early in the disease recovered completely in a few days. In practically all cases, the severe coughing spells promptly though gradually became less frequent and less severe.

Scientists working on the project were Drs. Joseph A. Bell, Margaret Pittman and Byron J. Olson.

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## BACTERIOLOGY

**Protection Needed for Protein Fiber Fabrics**

► YOUR milk coat, peanut suit and corn dress, not to mention the window draperies and furniture coverings which may be made of such materials in the future, will need storage protection against warmth and dampness. Otherwise they may be damaged by molds and other microorganisms that flourish in the soil in humid places, much as cotton is damaged by mildew.

Experiments showing this possibility of damage to the fabrics of the future that have protein fibers in them were reported by Dr. Margaret T. Goldsmith, U. S. Department of Agriculture, to the meeting in Cincinnati of the Society of American Bacteriologists.

Manufacturers are now trying to make textile fabrics from many different plants and animals. Some of these synthetic fibers are commercially used in combination with wool, rayon, cotton, nylon, mohair and fur. Paint brushes are being made from the casein in milk.

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## GENERAL SCIENCE

**Department of Agriculture Honors Five Scientists**

► FIVE veteran research scientists of the U. S. Department of Agriculture were honored by their colleagues when they were presented with the Distinguished Service Awards of the Department. Each year a group is given this recognition as a kind of birthday party for the Department itself; the Congressional act organizing the Department of Agriculture was approved May 15, 1862.

Recipients of this year's awards were:

Dr. Elmer W. Brandes, who has literally made life in America sweeter through

his research programs for the improvement of sugarcane and sugar beets, and for his work on the cause and control of sugarcane mosaic. He has also done research on rubber.

Dr. Charles A. Cary, whose investigations of milk led to the discovery of a factor of great importance in the nutrition of mammals. He subsequently identified this food factor as vitamin B<sub>12</sub>.

Edgar S. McFadden, who has done much towards keeping America's wheat-bins heaping full, through his development of Hope wheat. This was the original rust-resistant variety, and has been the parent of other rust-resistant wheats.

Leslie J. Sullivan, a Forest Service worker, "for heroism beyond the call of duty which resulted in saving the life of a co-worker."

Claude R. Wickard, formerly Secretary of Agriculture, now head of the Rural Electrification Administration. Mr. Wickard's selection was based on his long record as an agricultural administrator and his leadership in advances in agricultural activities.

*Science News Letter, May 28, 1949*

## NUCLEAR PHYSICS

**Uranium Belongs to Family of Seven Members**

► THE atomic bomb element uranium is a family with probably seven members. And like a large human family, it can get pretty complicated.

The uraniums are known by their weights—the atomic weights of chemistry which are based on giving the oxygen atom a weight of 16.

Uranium 235 is the atomic bomb variety or isotope. It is found in natural uranium in small amounts—about 11 pounds in a ton of the concentrated metal. This is the stuff that is reported missing from the Argonne National Laboratory. Because uranium is about the heaviest stuff known, the missing amount—some seven grams—would be about the size of a pea, if it's all in one chunk. (Uranium is nearly 19 times heavier than water; lead is only 11 times heavier.)

U-238 is the common metal which makes up most of the natural uranium found on the earth. The uranium being peddled in Germany is natural uranium. Like all forms of the element it is radioactive, but it is not fissionable—will not release atomic energy.

Other members of the family are: U-233, possible bomb stuff made from another element, thorium; U-234, made in the laboratory and not reported capable of releasing atomic energy; U-237 and U-239 also are man-made and not believed to be fissionable. Seventh member of the family may be U-236. This isotope has not been reported, but chemists suspect it can exist, probably for a very short time.

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**IN SCIENCE**

## MEDICINE

**Radioactive Phosphorus Reveals Deep Brain Tumors**

► PROBING the brain with a miniature Geiger-Muller counter will help surgeons locate more accurately the deeply buried tumors that threaten life, Drs. B. Selverstone, A. K. Solomon, and W. H. Sweet of the Massachusetts General Hospital and the Harvard Medical School, report to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (May 21).

The Geiger counter is the same instrument in miniature used to detect radioactivity in atomic laboratories.

Patients suspected of having brain tumors are given injections of radioactive phosphorus from approximately two hours to three days before operation. Tumor tissue concentrates the radioactive phosphorus. When probed by the Geiger counter, the tumor reveals its location by the accelerated ticking of the instrument.

In 14 patients brain tumors have been precisely located by this method, the Boston doctors report.

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## NUCLEAR PHYSICS

**Smuggling A-Bomb Called Possible But Not Probable**

► AN ENEMY nation could smuggle atomic bombs into the United States, a military scientist declared, but he doesn't think any will.

Dr. R. E. Lapp, of the Office of Naval Research, explained that smuggling a bomb into the U. S. would involve "terrific risks, any one of which might be so great that military men would veto clandestine delivery."

Voicing his own views, Dr. Lapp said that "if (atomic) bombs are delivered to this country, they will probably come by air." His reason: "A bomb burst high in the air is the most effective way to cause maximum damage."

Best American a-bomb targets, he said, are our big cities. "Today some cities are hardly adapted to the automobile, much less the atomic bomb," Dr. Lapp pointed out.

His solution, pointed up in a recent book, *MUST WE HIDE* (Addison-Wesley), is dispersion of American cities. Not only would this make us a less attractive atom bomb target, but it would also make our cities "better places to live in, less crowded and better equipped with transportation facilities," Dr. Lapp concluded.

*Science News Letter, May 28, 1949*

# CE FIELDS

## MEDICINE

### New Radioactive Isotope Promising for Bone Cancer

➤ A NEW radioactive isotope, gallium-72, may prove an unexpected ally in the fight against cancer. Animal experiments have shown that it concentrates in bone tissue and may heal tumors by its beneficial rays, the American Chemical Society meeting in College Park, Md., was told.

Approval for treating a few select patients with bone cancer at the U. S. Naval Hospital in Bethesda, Md., with the new isotope has been granted by the Atomic Energy Commission, Comdr. Horace C. Dudley of the Naval Medical Science Corps revealed.

Gallium is a rare silvery metal related to aluminum. The metal is made radioactive by bombarding it with neutrons in the uranium pile at Oak Ridge, Tenn.

Comdr. Dudley predicted that the radio-gallium may open a new path to the study of bone tumors and other bone diseases. He added a word of caution against displaying too much enthusiasm for the isotope as a tool for cancer control because its effectiveness still remains to be proved outside of the laboratory.

"Sufficient information is not yet available," he pointed out, "to allow anyone to predict the ultimate therapeutic applications, if any, of this new radioactive tool."

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## PUBLIC HEALTH

### Little Danger to Firemen In Industry's Use of Atom

➤ THE NATION'S fire fighters have little cause for alarm in the increasing use of atomic energy in American industry, the National Fire Protection Association was told in San Francisco by Edward J. Kehoe of the New York Operations Office, U. S. Atomic Energy Commission.

"We humans have a natural tendency to fear the unknown," he said, "and some of us may fear radioactivity because it cannot be seen."

Radioactivity can be dangerous, he indicated, but protective measures in use greatly decrease the hazard. During the entire period of operation of both the Manhattan project and the Atomic Energy Commission, he said, there have been only two deaths due to radiation.

"Considering the fire fighting aspects of radiation, there should be no great reason for alarm on the part of local fire department personnel who may be called on to assist us," he declared. "In the first place,

our scattered New York plants and laboratories do not generally involve 'hot' radioactive sources. In some locations where we might have fires, radioactivity would not be a factor at all. In other locations, where it could enter into the picture, we are equipped to monitor the area with survey meters to indicate intensity of radiation while the fire is in progress and to equip all or some firemen with film badges.

"The important thing to remember," he continued, "is that our tolerances have been set very low since they are based on a life time exposure where a worker may be exposed day after day for many years. Individuals such as local firemen who receive a single exposure can take many times the daily tolerance limit without ill effects."

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## MEDICINE

### Older Mice Are Tougher To Infect With 'Flu

➤ THE older the tougher seems to be the case with mice infected with influenza virus. It takes a smaller dose of the 'flu virus to kill three-week-old mice than six-week-old mice. These in turn are killed by less than it takes to kill 12-week-old mice, Dr. Seymour S. Kalter of the University College of Medicine at Syracuse, N. Y., reported to the meeting of the Society of American Bacteriologists in Cincinnati.

The difference in the killing dose for mice at different ages depends on several factors, he states. These are:

1. The immune mechanism which prevents the spread of the virus from parasitized cells to normal ones;
2. The amount of available lung tissue that may be put out of action without harming lung functioning; and
3. "Intrinsic factors of as yet undetermined nature," which Dr. Kalter says may have to do with the animal's ability to manufacture protein.

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## NUCLEAR PHYSICS

### New Baby Atom Smasher Developed in Holland

➤ A BABY atom-smasher with a 9,000,000-electron-volt punch has been built at the famous Philips Research Laboratories in Holland. It is so light and easy to handle that it will be taken to the job instead of moving the job to it.

This new type of betatron, a device for speeding up electrons to high energies, is the invention of Dr. A. Bierman. It has no heavy and expensive iron yoke with which such machines are usually constructed. It was reported in NATURE (April 23).

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## BIOCHEMISTRY

### Female Mammal Hormone Found in Roosters' Blood

➤ JUST what would roosters be doing with a body chemical, the principal known function of which is to help female mammals bring their young to live birth?

This is the physiological riddle that confronts Dr. Richard M. Fraps of the U. S. Department of Agriculture, Dr. Charles W. Hooker of Emory University and Dr. Thomas R. Forbes of Yale University.

Some months ago the three investigators found in the blood of hens the hormone known as progesterone, which had until that time been known only in mammals, where it brings about the attachment of the early embryo to the maternal tissues that will nourish it until it is born. This seemed odd enough; but at least the hens were female animals, and thus might be considered physiological "sisters under their skins" to female mammals.

Now, however, the scientists have found progesterone in the blood of roosters—which aren't even females. What it's doing there—if anything—they haven't any idea. That is what they are going to try to find out next.

Details of their new findings are given in the journal, SCIENCE (May 13).

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## VETERINARY MEDICINE

### Cabbage-Worms Poison Young Ducks Eating Them

➤ AN effective but expensive way to get rid of cabbage-worms: let young ducks eat them. It eliminates the cabbage-worms all right—but it also eliminates the ducks.

Several cases of poisoning in ducks that had been allowed to eat their fill of the "squidgy" caterpillars of the common white cabbage butterfly are reported by Drs. J. E. Wilson and R. H. Duff of the veterinary laboratory of the British Ministry of Agriculture and Fisheries.

Dead ducklings were sent to the two veterinarians by their puzzled owners, who wanted to know what was killing their young birds. In each case it was found that they had been given the run of a cabbage-patch infested with the caterpillars.

Experimental feedings were undertaken, and it was found that if a month-old duckling ate 40 to 50 cabbage-worms it would sicken and very probably die. The poor birds would stop eating, stand motionless with ruffled plumage, and finally pass into a coma from which they did not recover.

The poisonous principle in the caterpillars has not yet been isolated. Drs. Wilson and Duff are waiting now for a new caterpillar season so that they may continue their investigations.

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