

## PHARMACOLOGY

**New Anti-Ulcer Drug  
Akin to Soapless Soap**

► A NEW drug for ulcer patients is on the market. It is a quaternary ammonium compound, akin to some of the new so-called soapless soaps. It acts to relieve stomach ulcers by stopping the stomach's output of hydrochloric acid.

The new drug, called Pamine, was developed by Dr. Robert Bruce Moffett and associates at the research laboratories of the Upjohn Company, Kalamazoo, Mich. Chemically, it is epoxytropine tropate methylbromide.

On the basis of ability to produce a non-acid state in the stomach and to be effective in the smallest dose when injected into the muscles, Pamine rated top among 16 drugs tested by Drs. Joseph B. Kirsner and Walter L. Palmer of the University of Chicago School of Medicine.

Side effects, such as dryness of the mouth and throat, were less troublesome with Pamine, Chicago doctors found.

Although some of their testing was done on effects of the drugs injected into the muscles, the doctors found Pamine also effective when given by mouth, which is the way most patients probably will take it.

The goal of an anti-ulcer drug is to reduce stomach acidity for long periods, five, six or eight hours, without any side effects. While this has not yet been achieved, Pamine seems to approach it.

Pamine will be sold only on doctor's prescription. It is expected to retail for about two and one-half cents a tablet.

Science News Letter, July 11, 1953

## CHEMISTRY

**Invisible Sugar Causes  
Mystery Clothing Stains**

► BROWN STAINS that first show on a dress or suit after it has been dry cleaned are due to certain kinds of sugars used in artificial flavoring for candies and beverages, most types of fruit juices, and cocktails, beer and ale.

This solution to a mystery that bothers the dry cleaner and his customer was discovered in research reported by Dorothy S. Lyle of the National Institute of Drycleaning, Silver Spring, Md., at the meeting of the American Home Economics Association in Kansas City, Mo.

The stains are invisible when fresh but turn brown when heated. To make matters worse, the stains are different depending on the fabric. One, found commonly on wool but also on silk and nylon, is called the "wool-sugar stain." Once set by heat, this stain is not affected by any chemical.

The other, called the "sugar-alkali stain," comes on cotton, linen, acetate, rayon and other cellulose materials. This is encouraged to brown by alkalis as well as heat, but it does not develop if the atmosphere is

neutral or acid. It can be removed by acid spotting formulas commonly used in the dry cleaning industry.

To keep the heat down below a temperature at which either of these sugar stains develops, the National Institute of Drycleaning recommends that dresses be "tumbled" at 120 degrees Fahrenheit.

Science News Letter, July 11, 1953

## AERONAUTICS

**Radar on RAF Jets  
Aims Planes' Guns**

► BRITISH ELECTRONIC engineers have created a radar-ranging system, called Ecko, that promises to help RAF jet fighter pilots shoot down three or four times more enemy planes than they can at present.

The radar gear, housed in a one-cubic-foot package, locks on the target and feeds range information continuously to the gunsight. The gunsight in turn makes sighting allowances automatically for range and deflection.

Ecko is much simpler and smaller than the automatic radar now used for all-weather and night fighters. This equipment is so bulky that a small, light plane cannot carry it. Until now the day fighter pilot had to feed ranging information to the gunsight by hand, the Society of British Aircraft Constructors reports.

By relieving the pilot of the task of ranging and feeding the distance information to the gunsight, Ecko should permit the pilot to give much more of his attention to the attack itself.

It was possible to make the new system less complex because the day fighter pilot can look for targets. At night this is impossible. More complex searching and tracking radar is required. The night-fighter radar, furthermore, feeds into an automatic pilot so the whole attack is automatic.

Science News Letter, July 11, 1953

## ECOLOGY

**Beef, Bread and Beer  
Create English Heaths**

► ENGLAND'S "BEEF, bread and beer agriculture" is not necessarily the best for all parts of the island, believes Dr. W. H. Pearsall, Quain Professor of Botany at the University of London.

At a meeting of The Royal Institution of Great Britain, Dr. Pearsall said that deforestation of many areas of the British Isles to produce farmland for grazing and cereal crops led to the creation of sterile, acid heaths of no economic value.

To return the heaths to a state of productivity, the destructive processes caused by deforestation must be reversed, Dr. Pearsall said. Planting of new forests in the barren areas should lead to returned fertility and stability of soil.

Science News Letter, July 11, 1953

**IN SCIEN**

## TECHNOLOGY

**Midget Motor Made  
For Navy Torpedoes**

► A MIDGET motor slightly bigger than a rolled-up newspaper currently is being hurried along assembly lines to help submarine crews blast their targets from the seas.

The 25-horsepower motor will be used in new electric torpedoes. It will start the torpedo's heavy gyroscope, the device that guides the torpedo to its target.

The life span of the "suicide" motor, made by Westinghouse Electric Company at East Springfield, Mass., is a matter of seconds. Its working life is even shorter. In about a fifth of a second, the powerful little motor can set the gyroscope's flywheel spinning nearly 13,000 revolutions a minute. Its work done, the motor then disconnects from the gyroscope.

Seconds later the motor is blown apart as the deadly torpedo rams into its prey.

Standard 25-horsepower industrial motors are about 16 inches in diameter, 22 inches long and weigh about 415 pounds. The mighty midget, in comparison, is 3.5 inches in diameter, 10 inches long and weighs 10 pounds.

Science News Letter, July 11, 1953

## CYTOLOGY

**Movies to End Old  
Science Controversy**

► MOVING PICTURES may end a 55-year-old scientific controversy. The controversy concerns a very delicate network of fibers inside living cells called the "golgi net" or "golgi apparatus."

Ever since it was first described in 1898 by an Italian scientist, Camillo Golgi, scientists have been divided over its existence. Its function is not known. However, with motion pictures made by Prof. F. B. Adamstone and Prof. A. B. Taylor of the University of Illinois, it is possible to see the slow pulsating movement caused by the shifting of the meshes of this delicate net-like structure inside each tiny nerve cell.

The movies, taken at the normal rate of speed, show also that the living nerve cell is a center of bustling activity in addition to the movement of the golgi net. Rod-like structures which are probably the source of many enzymes, and granules of various other kinds dart to and fro. Heretofore, the nerve cell was thought to be a quiet, jelly-like mass of protoplasm.

Their work is reported in the *Journal of Morphology*. The movies will be used for class instruction and further research.

Science News Letter, July 11, 1953

# CE FIELDS

## OCEANOGRAPHY

### Skin-Diving Scientists Find "False Bottom"

► TWO SKIN-DIVING oceanographers, swimming through the mysterious "false bottom" of the ocean, have discovered that countless tiny marine organisms cause the troublesome double lines that show up unexpectedly on echo depth-sounder charts.

Diving to depths between 55 and 140 feet off Pt. Loma with Aqualungs, Robert F. Dill of the Navy Electronics Laboratory, and Conrad Limbaugh of the Scripps Institution of Oceanography, found the layer, "like the top of a Los Angeles smog," to be full of white organisms about two to four millimeters long.

Visibility dropped from 150 feet above the layer to about 10 feet inside it, they reported, and there was approximately a 10-degree drop of temperature inside the scattering layer.

On a second exploration, equipped with echo-sounding gear and plankton nets, the oceanographers found that the layer was double. Taking samples, they determined that the upper layer was composed mainly of jellyfish and animal plankton.

The lower layer, separated from the upper by a zone of clear water, was made up chiefly of diatoms and larval stages of bottom-dwelling marine animals. No fish or other large marine life were noted.

Since the scattering layers first appeared as "false bottoms" on echo-sounding equipment several years ago, scientists have speculated about their composition. They generally believed the layers were made up of marine organisms, but because of sampling difficulties the scientists could not accurately describe the small-organism population of these layers.

Science News Letter, July 11, 1953

## ENTOMOLOGY

### Termite Gourmands Eat Arsenic, Lead, Concrete

► TERMITES THRIVE on arsenic on Barro Colorado Island, the Smithsonian Institution's tropical research center in the Panama Canal Zone. Others of the 42 recorded termite species on the island do such versatile things as gnaw through lead and concrete or carry fungi with them to kill wood so they can eat it.

With such a talented termite population, Barro Colorado has become a center for termite control research.

James Zetek, director of the station, is in charge of anti-termite work. Up to now, he has made nearly 35,000 tests, using woods

impregnated with various repellents and poisons. About 400 different forms of treatment against termite attack have been tried out on the various woods, some with success, but most merely a testimonial to the termites' near-indestructibility.

The reason termites are hard to dispose of completely by poison lies in the way they obtain their nourishment. Termites eat wood for its cellulose content, but they alone cannot digest it. Special bacteria living in the termites' digestive tract break down the cellulose into a form which can be used by the termites. Without the bacteria, they would starve to death surrounded by food.

Thus, one of the best ways to kill termites would be to poison their bacteria. But, just as bacteria build up strains that resist penicillin or streptomycin, the termites' bacteria after a few doses of poison may form strains that are unaffected by it.

One race of Barro Colorado termites has thus acquired the ability to crunch heedlessly through arsenic to get to a tasty morsel of poisoned wood.

Science News Letter, July 11, 1953

## MEDICINE

### Gamma Globulin May Save 100 Children

► WITH 250,000 cubic centimeters of precious polio-fighting gamma globulin given on an emergency basis to children in Montgomery, Ala., one big question is: How many of the children will escape paralysis?

It may be a dozen. It may be a hundred. The exact number will never be known. Health officials and physicians gave the material to all children in the county under nine years of age, according to one report. The Public Health Service sent enough to cover all children under 13 years in the metropolitan area.

If 30,000 children got gamma globulin and it protects at the rate it did in controlled studies last summer in Harris County, Texas, only 12 children will escape paralysis. If it protects at the rate it did last summer in a controlled study in two communities in Iowa, 102 children will escape paralysis.

The actual number protected will depend on many factors, such as how fast the expected epidemic develops, whether all the children get the material early enough, how long the epidemic continues, and whether if it lasts a long time, mass inoculations are given a second time.

But because this was not a controlled study as the two last summer were, no one will be able to tell whether children who escape paralysis do so because they got gamma globulin or whether they would have escaped anyway.

Even if all 30,000 who were inoculated escaped paralysis, which is highly unlikely, no one will ever be able to say that it was due to gamma globulin's protective power that they were not afflicted.

Science News Letter, July 11, 1953

## BOTANY

### Radioactive Strontium Called A-Bomb Hazard

► RADIOACTIVE STRONTIUM, one of the fission products of an A-bomb blast, can be taken up readily from the soil by such vegetables as beans, radishes, carrots, barley and lettuce.

Thus it may be a future hazard to human beings and animals eating these vegetable crops, research at the University of California at Los Angeles Atomic Energy Project has indicated.

The vegetables were planted in various types of soil made radioactive artificially with five such elements. In addition to strontium, cesium, ruthenium, cerium and yttrium were used. Only strontium indicated it might be taken up in sufficient quantities by plants to be a serious hazard.

Radishes and beans took up more of the radioactive material than the other plants. The investigation also indicated that the rate of uptake by plants varied in different types of soil. The uptake was influenced by the amount and type of clay present in the soil.

The research was conducted by J. W. Neel, J. H. Olafson, A. J. Steen, Barbara Gillooly, Dr. Hidoe Nishita and K. H. Larsen.

Science News Letter, July 11, 1953

## ENTOMOLOGY

### Melon Fly Pest Brought Under Control

► THE MELON fly, a pest that in the past has curtailed melon, cucumber and tomato crops in Hawaii and posed a threat to California agriculture, has been brought under control.

The melon fly for years has defied the best efforts of scientists. Control of the insect, however, has been accomplished through new applications of an old technique, developed in field tests in Hawaii by Dr. Walter Ebeling of the University of California at Los Angeles and Dr. H. A. Bess and T. Nishida of the University of Hawaii.

It consists of planting "trap crops" and treating them and surrounding vegetation with insecticides such as parathion and DDT.

This technique takes advantage of a peculiar habit of the melon flies. The insects enter the fields for only short periods during the day to lay eggs among the crop plants and fruits. They then return to certain plants surrounding the field, where they spend most of their time.

Thus planting a row of corn around melon or tomato fields and spraying the corn plants and nearby wild vegetation with insecticides effectively controls the pests.

The fact that the technique eliminates treating of the crops with poisonous insecticides further enhances its value.

Science News Letter, July 11, 1953