

## SEISMOLOGY

**Japanese Homeland Again Shaken by Earthquake**

➤ ANOTHER earthquake has shaken the Japanese homeland, seismologists of the U. S. Coast and Geodetic Survey announced after examining data transmitted through Science Service by five observatories in this country. The shock, of only moderate intensity, had its epicenter in the region of latitude 38 degrees north, longitude 136 degrees east. This is near the Noto peninsula, on the west coast of Honshu, the island on which Tokyo and most of Japan's other large cities are located. The quake started at 5:37½ p.m., EWT, on Sunday, March 11.

Stations reporting were those of the Jesuit Seismological Association at Georgetown University and St. Louis University, the Utah State Agricultural College at Logan, Utah, and the observatories of the U. S. Coast and Geodetic Survey at Tucson, Ariz., and College, Alaska.

*Science News Letter, March 24, 1945*

## MEDICINE

**Some Diseases Cured by Swallowed Penicillin**

➤ HOPE that in future patients can swallow their doses of penicillin instead of having them injected by hypodermic needle every three hours is increased by a report to the *Journal of the American Medical Association*, (Mar. 17)

Penicillin by mouth was effective in a number of cases of gonorrhea and other diseases, Drs. Paul Gyorgy, H. N. Vandegrift, William Elias and L. G. Colio of Philadelphia, and F. M. Barry and J. D. Pilcher of Cleveland report.

With the penicillin, trisodium citrate was given to act as a buffer against the acid in the stomach. Destruction of the mold chemical by the stomach acid before it could get into the blood and achieve its healing effect has been the difficulty heretofore in giving it by mouth. Penicillin is sensitive to alkali as well as acid, so giving it with an alkaline antacid was considered impractical and undesirable.

The gonorrhea patients were cured in one to three days with doses of penicillin comparable in amount to those given by injection for treatment of this disease.

A three-year-old boy with chronic otitis media (running ear) had been getting sulfathiazole for 23 days without any improvement. He was cured after 20 doses

of penicillin with sodium citrate had been given by mouth every three hours, which would take two and one-half days.

Penicillin could be detected in the blood, some of the studies showed, four hours after it had been swallowed, whereas it is rare to find it in the blood even three hours after injection into the muscles.

*Science News Letter, March 24, 1945*

## RADIO

**New Television Receiver Shows Brighter Pictures**

➤ A NEW television receiver for post-war homes that projects pictures like movies that are brighter, clearer, and five times larger than were possible on prewar sets was demonstrated by Dr. C. B. Jolliffe, vice-president in charge of the laboratories of the Radio Corporation of America.

The screen of the new receiver is 16 by 21 1/3-inches in size and is made of a special plastic that has been treated to make the pictures show up brighter and clearer. It was made possible by four prewar technical developments which Dr. Jolliffe credited to RCA scientists and engineers. These include an improved high-voltage projection tube, a unique high-efficiency optical system, the plastic screen, and an automatic frequency control system.

Floor or console models incorporating the new television screen will cost about \$395, including equipment for picking up FM and standard broadcast (AM) programs. Several models, selling as low as \$150, will also be available. These less expensive models will be equipped with tubes for viewing pictures directly in a manner similar to that used in prewar television sets.

The optical system in the new television receiver consists of a bowl-shaped mirror and a specially designed molded plastic lens which delivers to the back of the viewing screen a picture six times brighter than could be obtained with an ordinary movie projector. The cathode ray receiving tube is mounted downward in the cabinet, with the bowl-shaped mirror below it and facing upward. Light from the face of the tube is reflected upward from the mirror through the plastic lens to a flat inclined mirror near the top of the cabinet. From the mirror, the light is reflected upon the back of the viewing screen. The entire receiver is not much larger than an average prewar radio receiver.

*Science News Letter, March 24, 1945*

**IN SCIENCE**

## CHEMISTRY

**New Vitamin A Discovered, Twin to One Already Known**

➤ DISCOVERY of a new vitamin A, twin to the one already known, is announced by C. D. Robeson and J. G. Baxter of the Laboratories of Distillation Products, Inc., in Rochester, New York.

In their report to the British scientific journal, *Nature*, they suggest calling these vitamin twins Gadol and Galol. Gadol comes from the Latin word for codfish and is given to the vitamin A which has long been known and was isolated in pure form about five years ago. Galol is derived from the word for shark, the fish from whose liver the second vitamin A was first isolated.

Existence of Galol has been suspected for some time but it eluded detection because it is present in smaller proportions in most fish liver oils. Its crystals are quite different in shape from those of the previously known vitamin A and it differs in some other respects, but it has similar potency as a vitamin. The two vitamins are believed to be geometric isomers.

Vitamin A is required for normal growth and health. Lack of it may lead to serious changes in the eye, including night blindness, and in other tissues of the body. Fish liver oils are the chief source of the vitamin, but foods such as carrots, sweet potatoes and green leafy vegetables furnish carotene which the body can convert into vitamin A.

*Science News Letter, March 24, 1945*

## HORTICULTURE

**Good Bread Made From Twenty-Year-Old Wheat**

➤ WHEAT, kept over 20 years, still makes good bread if properly stored, report scientists of the U. S. Department of Agriculture and the Colorado Experiment Station. Baking tests with wheat kept 14 to 22 years in a dry, unheated room showed that the protein content was unchanged, the acidity had not increased enough to show up in the flavor of the bread, and the thiamin content of the wheat was still high.

*Science News Letter, March 24, 1945*

# CE FIELDS

## NUTRITION

### Spinach May Come Back Into Nutritionists' Favor

► SIGNS THAT spinach may get back into favor with nutritionists, if not with small boys, appear in a report by Dr. Roe E. Remington and Dr. Cecil L. Smith of the Medical College of the State of South Carolina. (*Science*, Mar. 16)

Junior could, if he would, eat as much as two and three-quarters pounds of spinach daily without having his growth stunted or his bones malformed, so long as his diet is not short in calcium, if the scientists' studies with rats can be transposed to humans.

Chief objection to spinach by nutritionists had been that some substance in it, presumably oxalic acid, interfered with the utilization of calcium for bone formation. In the course of experiments testing the availability of iodine in certain vegetables, Drs. Remington and Smith had occasion to feed a commercially prepared powdered spinach to young rats on a diet that for years had been successfully used as a breeding ration. They decided at the same time to test the effects of the spinach on growth and bone formation.

The rats ate daily what would amount roughly to two and three-quarters pounds of spinach in a human dietary of 2,500 calories. No decline in appetite or efficiency of food utilization was noted, their growth was not stunted, and there was no harmful effect on their bones, where calcium deficiency would show up.

*Science News Letter, March 24, 1945*

## GENETICS-MEDICINE

### RH Positive Sensitivity May Last for Lifetime

► WARNING that great care should be taken in giving blood transfusions to women with Rh negative blood who have given birth even as much as 16 years earlier to Rh positive babies is given in a report by Dr. Lawrence E. Young and Dr. Donald H. Kariher, of Rochester, N. Y. (*Journal, American Medical Association*, Mar. 17).

Some physicians have believed that the antibodies built up in the mother's bloodstream by the Rh positive infant, which may cause a violent reaction to transfusion with Rh positive blood, will

disappear in the course of three or four years.

"Sensitivity to the Rh factor," these investigators report, "once it is acquired, may persist for many years, probably for life."

Although physicians are accustomed to expect dramatic symptoms such as chills and fever as danger signs of transfusion with incompatible blood, serious reactions can take place without any of these dramatic warnings, the physicians report. And Rh incompatibility is often unpredictable by any sort of matching test.

"The importance of vigilance on the part of those in charge of transfusions and the necessity of systematic investigation of any untoward symptoms or signs cannot be overemphasized," the physicians warned.

They recommend that nothing but Rh negative blood be transfused into Rh negative patients regardless of how long it is since they gave birth to an Rh positive baby or of any previous history of transfusions.

*Science News Letter, March 24, 1945*

## CHEMISTRY

### Flame-Resistant Plastic Developed for U. S. Navy

► FLAME-RESISTANCE, shock-resistance, and easy molding are outstanding properties of a new plastic developed in the laboratories of the General Electric Company for the U. S. Navy. The product can withstand fire without toxic effects during battle action, it is claimed, as well as the concussions and vibrations of battleship broadsides, and has good electrical properties.

Company chemists, working with Dr. Howard W. Haggard of Yale University, found that they could not use any appreciable amount of organic filler in a laminated plastic or molding compound to fit the Navy specifications without obtaining a material that gave off toxic gases likely to be fatal to human beings.

They therefore turned to experimenting with asbestos, glass fiber and other inorganic materials. The new plastic uses asbestos filler, because it provides the high flame-resistance, low toxicity and shock-resistance, and makes a material that is easily molded. Glass is used in another plastic development for the Navy for panel board on ships. It is made by bonding layers of glass cloth together with melamine resin under high pressure.

*Science News Letter, March 24, 1945*

## ZOOLOGY

### Earthworms That Glow Like Fireflies Found

► SMALL earthworms that shine like fireflies are the find reported by Cyrus N. Ray of the Texas Archaeological and Paleontological Society. (*Science*, Mar. 16)

Mr. Ray describes them as "small round, slender, pink earthworms varying from one-half inch to one and one-fourth inches in length and about as large in diameter as the small end of a hardwood toothpick. These earthworms have the same color, general appearance and movements as those of the much larger worms usually known as angle- or earthworms."

He first noticed the worms on a near-frosty night, when a chance scraping of leaf-mold on the ground disclosed small, glowing pellets, which at first he could not identify by casual outdoor examination. Scooping up some of the surface soil and taking it indoors, he discovered that the objects were the small worms, tightly coiled into little balls.

As the worms warmed up to the indoor temperature they apparently lost their power to glow, but regained it when chilled to the 36 degrees Fahrenheit that prevailed outdoors. Touching them with a sensitive fingertip, Mr. Ray believed that they felt warm; but he lacked suitable physical instruments to make an exact measurement of the heat given off.

*Science News Letter, March 24, 1945*

## CHEMISTRY

### Safer Manufacture of Smokeless Powder

► SAFER manufacture of smokeless powder is the objective of processes on which two Hercules Powder Company chemists, Bernhart Troxler and Leon W. Babcock, have taken out three patents, Nos. 2,370,130, 2,370,209 and 2,370,271.

The first two patents cover the use of inert gases, such as nitrogen, helium or carbon dioxide, as an atmosphere in the closed vessels in which all steps of manufacture are carried out. This is to minimize the danger of accidental ignition, always present when atmospheric oxygen is present. The third patent is on a large, bin-like apparatus into which the powder is introduced, after formation into grains, for its final steps of cleaning and drying, which at present involve several separate handlings, with transfers from building to building.

*Science News Letter, March 24, 1945*