

## BOTANY

**Fungi Present Evidence Of Aid to Plant Roots**

► PROOF that fungi on plant roots help the plants in absorbing mineral nutrients from the soil has been written by the fungi themselves on photosensitive plates, in experiments carried out by Drs. Paul J. Kramer and Karl M. Wilbur at Duke University in Durham, N. C.

Many species of trees and shrubs, and some herbaceous plants as well, have the smaller branches of their roots densely covered with a fine web of fungous hairs, known to botanists as mycorrhiza. It has long been assumed that mycorrhiza aid roots in absorbing water and minerals from the soil, but conclusive proof has been lacking.

Drs. Kramer and Wilbur prepared a solution of radioactive phosphate, and immersed in it the roots of pine seedlings, both with and without mycorrhiza. Then they laid the roots on photographic plates, separated from the plates only by a thin layer of aluminum foil. The radioactivity of the phosphorus recorded itself as bright outlines on the sensitive emulsion. Roots with mycorrhiza registered themselves much more strongly than roots without the fungous webs.

An illustrated report of the results of these experiments is presented in the journal, *SCIENCE* (July 1).

*Science News Letter, July 16, 1949*

## MEDICINE

**Allergic to Cottonseed but Not to Cottonseed Oil**

► APPARENTLY you can be allergic to cottonseed without being allergic to cottonseed oil such as you get in some salad dressings.

Two cases of this kind of allergy, which is somewhat contradictory to textbook statements on the subject, are reported by allergy researchers of the Department of Agriculture and a Washington, D. C., physician in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* (July 9).

The scientists are Drs. E. J. Coulson, Henry Stevens and H. S. Bernton.

One of the patients was a physician who himself is a recognized specialist in allergies. He had had hayfever since 1930 and since 1932 hives which could be brought on by trial with non-absorbent cotton or by sleeping on a cotton-filled mattress. He was sure that he also was allergic to cottonseed oil, reporting that he got hives and prolonged abdominal distress with acute griping pain and diarrhea if he ate even a little of it in foods, for example in baked goods made with vegetable oil shortening.

The other patient was a 34-year-old man with asthma who showed an allergic reaction to skin tests with cotton and cotton-

seed, but who stated he had no symptoms from eating cottonseed oil.

Special blood tests, called passive transfer tests, showed that the asthma patient's blood had material that would pass on to others sensitivity to cottonseed, but the blood of the physician did not.

The allergy specialist was then persuaded to try taking some cottonseed oil, along with corn oil and olive oil, to see whether he could tell by his reactions which was the cottonseed oil. The samples of oil were made to look and taste alike. The allergy specialist was not able to tell the oils apart in quantities commonly present in foods, such as bread or salad.

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## GEOLOGY

**Billion-Year-Old Burrows Found in Michigan Rocks**

► BILLION-year-old wormholes, or burrows made by some creature equally low in the evolutionary scale, have been identified in Michigan rocks by Dr. Henry Faul, Massachusetts Institute of Technology geologist, who reports his studies in the science magazine, *NATURE* (July 2), published in London. Traces of life of any kind in rocks as old as this are exceedingly rare.

Some of the burrows are as much as two feet long, and all of them curve and wind more or less. Average width is about one-eighth inch. Dr. Faul suspects that the worms, or whatever made the burrows, were feeding on decaying vegetable or animal matter left on top of ancient shore sand that subsequently hardened into quartzite.

The specimens were found in a gold mine near Ishpeming, Mich. Age estimates based on helium contained in rocks of the same mine are on the order of 1,200,000,000 years.

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## MEDICINE

**Red Noses Believed To Be Caused by Guilt Feeling**

► A DEFINITE personality type has been established for the disease called "brandy nose" or rosacea in medical language.

Dr. I. B. Sneddon, of Sheffield, told the British Medical Association at its meeting in Harrogate, England, that the condition which produces a red coloration of the nose, forehead, and cheeks is brought on by an acute emotional crisis involving guilt or indignation.

In support of his theory he quoted studies made on patients with rosacea at the Sheffield Royal Infirmary.

"The fact that so many methods of treatment are successful in improving rosacea is further evidence that the condition is psychosomatic in origin," he declared.

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**IN SCIENCE**

## PALEONTOLOGY

**Rare Fossil of "Croc"-Like Animal Given Smithsonian**

► ONE of the rarest of fossil finds, the skeleton of a phytosaur, crocodile-like animal that lived 150,000,000 years ago, has been received at the Smithsonian Institution in Washington. It was found in Arizona by workers of the U. S. Geological Survey.

Although shaped like crocodiles and living more or less as they do, the phytosaurs were not closely related to the "crocs." They were closer kin to the dinosaurs, though the cousinship even here was rather remote. The true crocodiles began to evolve at about the same time as the phytosaurs, and apparently were the fitter to survive. At any rate, they have survived, and there have been no phytosaurs since Upper Triassic geologic time.

Since most phytosaur skeletal remains hitherto turned up have been fragmentary, the newly discovered, almost complete skeleton has especially high scientific value.

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## PSYCHIATRY-MEDICINE

**Mentally Ill Less Likely To Be Hay Fever Victims**

► THE MAN who has hay fever may be afraid that it will drive him crazy, but if he really were crazy he probably would not have hay fever. The mentally ill do not generally suffer from this affliction.

At the height of the ragweed season, tests were made on 1,875 patients at the Coatesville, Pa., Mental Hospital of the U. S. Veterans Administration, and on 757 well employees of the same institution.

Signs of hay fever or other allergy were found in only 2.9% of the patients with the common mental illness schizophrenia and in only 1.4% of those suffering from manic-depressive psychosis. By contrast, 13% of the employees had allergies from the ragweed pollen. Among epileptics the incidence was the same as in the comparison group of employees—13%.

Somewhat more of the patients had a history of allergic symptoms in the past than were actually showing signs of allergy at the time of the test. Altogether, 5.7% had such a history. Of the comparison group, 21% had a history of past symptoms.

Details of the test are reported in the *AMERICAN JOURNAL OF PSYCHIATRY* (May), by Dr. Robert M. McAllister, of the Coatesville Hospital, and Dr. Arthur O. Hecker, clinical director of the institution.

*Science News Letter, July 16, 1949*

# THE FIELDS

## NUCLEAR PHYSICS

### Exploding Atoms Mailable If Radioactivity Is Weak

► EXPLODING atoms may now be sent by mail.

New Post Office regulations allow isotopes, clock dials, uranium ores, luminous compounds, and radium paints to be mailed if their radioactivity is weak enough.

The amount of radiation at the surface of the package is limited to one-tenth of the maximum that is considered safe for human body exposure daily. In terms of the measurement of radioactivity, this is 0.010 of a roentgen during one day.

This is less radioactivity than would fog an undeveloped photographic film in 24 hours.

Uncle Sam's mailmen have relaxed their stringent embargo on radioactivity because of an increasing demand from industry to allow the mildest sort of radioactive materials to be carried in the mails. Heretofore, except for very small quantities of luminous paint and polonium, a radioactive element, radioactive materials have had to be sent by express.

The radioactive materials sent by mail may be in the form of liquids, solids or gases, but they must be properly packaged and labeled. The gamma radiation must be less than 10 milliroentgens for 24 hours at the surface of the parcel, and there must be no significant alpha, beta or neutron radiation.

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## ENGINEERING

### Device Records Time on Teletypewriter Messages

► A STATION identification and time line is added automatically to almost every telegraphic message sent out by the Army Communication Center in the giant Pentagon building in Washington, by means of a complicated electronic device invented in the center's shop by Syrl K. Ferguson, the Office of the Signal Corps has revealed.

This automatic device saves the necessity of making a manual notation on a message of the time it was sent, and it guards against the possibility of errors in the record. The heart of this electric timer is an electric clock. The time line, which includes station identification, is added to the end of the message, and it gives a record of the exact time the message is received at its destination or at the first relay station en route. It operates only for outgoing messages. Incoming communications must still be recorded manually.

This timing mechanism is designed to serve a maximum of 100 teletypewriter circuits that are operated by hole-punched paper tapes. It also stops and starts transmitting machines when appropriate and, after adding the station identification and dispatch time to the message, causes the tape to move enough to permit tearing it between messages. By adding more circuits, the message timer can be enlarged readily to serve many more machines than the present 100.

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## GENERAL SCIENCE

### Atomic Scientist Attacks Non-Communist Affidavit

► REQUIREMENT of a non-Communist affidavit from scientists receiving Atomic Energy Commission fellowships was bitterly attacked by an atomic scientist.

Dr. Leo Szilard of the University of Chicago criticized science leaders for accepting the affidavit. Writing in the BULLETIN OF THE ATOMIC SCIENTISTS (June-July), Dr. Szilard called the AEC fellowship oath "the lesser evil."

Science leaders agreed to the oath to ward off a requirement that all fellowship candidates be investigated by the FBI, the physicist contended. Dr. Szilard said they felt the oath was a lesser evil, but he believes they were wrong.

If it's "reasonable", as some science leaders stated, to ask for the oath, Dr. Szilard argues that it is also reasonable to refuse to take an applicant's word that he is not a Communist. The result, he points out, would be an investigation of all applicants for fellowships. In the end, suggests the University of Chicago scientist, it might be felt "reasonable" to investigate all faculty members and students of universities receiving federal aid.

Scientists criticized by Dr. Szilard for acceptance of the affidavit requirement include Dr. A. N. Richards, University of Pennsylvania scientist and president of the National Academy of Sciences, Dr. Detlev W. Bronk, president of Johns Hopkins University and chairman of the National Research Council which administers the AEC fellowships, and members of the executive committee of The American Institute of Physics. Members of the committee are: Prof. G. R. Harrison of the Massachusetts Institute of Technology; Dr. Paul E. Klopsteg, president of Central Scientific Company, Chicago; Prof. F. W. Loomis of the University of Illinois; Prof. George B. Pegram of Columbia University; and Wallace Waterfall of the Acoustical Society of America.

The Institute committee approved the oath requirement in a statement sent to the Congressional Joint Committee on Atomic Energy, while Drs. Richards and Bronk testified before the committee on the subject.

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## GENERAL SCIENCE

### Choice Wood for Army Skis Bought Back from Europe

► CHOICE hickory wood needed for American Army skis has been sent to Europe and bought back at premium prices by U. S. ski makers, an Army officer told a scientific meeting on wood in Washington.

Lt. Col. R. H. Wilhelm, a wood expert from the Department of Army's Quartermaster Corps, described the exacting requirements for wood for Army skis at a symposium sponsored by the National Research Council and Office of Naval Research.

Col. Wilhelm declared, "Several manufacturers have stated that large quantities of choice hickories are being shipped to several European nations and in various instances it has been necessary for manufacturers in the United States to buy our hickories back from these same European nations.

"The result is that they must pay an enormous premium for this wood," he charged.

This situation "may have been taken care of" in the past few months, Col. Wilhelm added.

If you've had any trouble getting plywood in the last few months, the Quartermaster Corps may be to blame, the spokesman indicated.

Col. Wilhelm said that the Corps has procured half a million locker trunks—25 square feet of plywood in each one—during the past six months.

The Army officer said he understood that this had "caused a considerable drain on the plywood manufacturers due to the accelerated delivery schedule we had in the contract."

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## ASTRONOMY

### Camera Replaces Eyes for Reading Astronomy Scales

► ASTRONOMERS no longer rely on their eyes to read off the scale markings on their most precise instruments.

E. G. Woolsey of the Dominion Observatory, Ottawa, Canada, told the American Astronomical Society meeting that cameras are being used to photograph the division marks on the declination scale of the Observatory's meridian circle telescope.

Declination measure of star positions, made with this telescope, can be used to determine latitude exactly. Latitude changes because the axis on which the earth rotates keeps moving around a bit inside the earth. Greatest change from a mean position is about 40 feet.

A similar use of camera apparatus is for similar studies at the U. S. Naval Observatory in Washington.

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