

## ENGINEERING

**Technologists for Defense Sought by Government**

**T**ECHNOLOGISTS of all grades, skilled in handling explosives, fuels, plastics, rubber, minerals and textiles, are being urgently sought for defense work, it is announced through the U. S. Civil Service Commission. Salaries range from \$2,000 to \$5,600 a year. Persons with proper education and experience are invited to get in touch with the U. S. Civil Service Commission, in Washington, D. C. or with the board of examiners at any first- or second-class post-office.

Technical editors are also needed by the War Department, the Commission states. Work of such editors will be confined largely to the fields of engineering, chemistry and physics. Applicants will not be given a written test, but will be rated on their education and experience.

*Science News Letter, February 1, 1941*

## CHEMISTRY—MEDICINE

**Tests for Diagnosing Pellagra May Result From Discovery**

**A**CHEMICAL test for diagnosing pellagra, more specific than any that doctors have had before, may result from a discovery announced by Dr. Victor A. Najjar and Dr. L. Emmett Holt, Jr., of the department of pediatrics, Johns Hopkins University, (*Science*, Jan. 3).

Diagnosis of pellagra now is made from the skin rash, inflamed tongue and other symptoms. A more exact method of diagnosis, such as a chemical test, would be extremely helpful because the symptoms of pellagra are sometimes confused with similar symptoms brought on by lack of other vitamin chemicals than the pellagra-preventive, nicotinic acid. With the aid of the chemical test, doctors could tell whether or not the patient needed treatment with nicotinic acid.

A chemical, as yet unidentified, appears with a bluish fluorescence in alkali-treated excretions of normal persons who have plenty of pellagra-preventing nicotinic acid in their bodies, the Johns Hopkins doctors discovered.

In pellagra patients, this substance does not appear, but another, also unknown, chemical which gives a whitish-blue fluorescence without alkali treatment appears instead.

Disappearance of the bluish fluorescent substance, called F<sub>2</sub>, is apparently the earliest change in the kidney excretions

in pellagra patients. As the disease progresses, the other substance, called F<sub>1</sub>, appears. Treatment of the patient with nicotinic acid, which cures the pellagra, banishes F<sub>1</sub> and allows F<sub>2</sub> to appear again. Both of these substances can be measured quantitatively by the fluorophotometer, although the doctors do not yet know what they are.

An enzyme of which nicotinic acid is a component, Drs. Najjar and Holt suggest as explanation of their findings, serves normally to convert the substance F<sub>1</sub> into F<sub>2</sub>. In states of nicotinic acid deficiency, this conversion does not take place and as a result F<sub>1</sub> accumulates. The findings also suggest, the doctors point out, that they may be dealing with the material responsible for the sensitiveness to sunlight of pellagra patients.

*Science News Letter, February 1, 1941*

## ARCHAEOLOGY

**American Archaeologists Help Greeks Save Relics**

**T**O TOPSY-TURVY developments in world turmoil, add the vote of American archaeologists to send \$2,000 to help the Greeks hide from bombs treasured antiquities, which—before war's outbreak—archaeologists were busily digging up.

The American School of Classical Antiquities, in Athens, donor of the typically war-time gift, has practically abandoned digging. Members of the school still in Athens are delving into comparatively peaceful libraries and making discoveries—such as forgotten letters by the famous Heinrich Schliemann who opened the ruins of Troy.

Greek officials, who have already stored much statuary and other ancient art in caves, vaults and other hideouts, have a trebly hard task. Funds are limited. Greece is so rich in antiquities that only Egypt and Italy could claim to rival it. And the limestone on which Athens and other Greek cities are built does not encourage tunneling of deep subways or other underground shelters. The limestone does provide caves, and they are useful.

Most fear has been felt for museums and ruins in Athens, Delphi, Olympia, and Corinth. The Athenian military air-drome, Tatoi, experienced Italian attack, but fear of retaliation on Italy's cherished archaeological cities has apparently thus far protected Greek shrines from indiscriminate bombing.

*Science News Letter, February 1, 1941*

**IN SCIENCE**

## BIOLOGY

**Related Mollusk Species Show Opposite Tendencies**

See Front Cover

**D**IAMETRICALLY opposite biological behavior is often displayed by closely related species. This is well demonstrated by the shells in one of the new Smithsonian Institution displays, illustrated on the front cover of this issue of THE SCIENCE NEWS LETTER. One species is a fixed conservative, the other constant only in its variability.

The paler shells in the display are those of the mollusk *Donax gouldii* Dall, from the Pacific coast of the United States. They are always alike—amateur collectors soon tire of them. The more vividly marked ones are appropriately known as *D. variabilis* Say; they occur on the Gulf coast of Florida. Despite the wide variation in markings, the specimens shown were all collected in the same locality.

Less learnedly, *Donax* shells are called wedge-shells or coquina shells. The mollusks that form them are edible; Floridians make soup out of their species.

*Science News Letter, February 1, 1941*

## MEDICINE

**Cuff Made from Artery Used to Mend Cut Nerve**

**T**HE ENDS of small nerves that have been cut can be reunited by holding them tightly together in a cuff made from a fragment of an artery, Dr. Paul Weiss, of the University of Chicago, reports. (*Science*, Jan. 17)

In the case of very tiny nerves, Dr. Weiss states, neat stitching to hold the cut ends together "becomes a mechanical impossibility." Holding these little nerve ends together by ordinary sewing can never be precise enough, he says, to prevent masses of nerve fibers from "escaping into the surroundings and straying off to uncontrollable destinations."

These undesirable results, he says, can be avoided by the use of the artery cuffs.

*Science News Letter, February 1, 1941*

# CE FIELDS

## ORNITHOLOGY

### Britain's Wild Falcons Are Doomed To Be Shot

**W**ILD FALCONS that still nest along the coasts of Britain are doomed because they follow their instincts to capture birds as food for their young. They have been making heavy inroads on carrier pigeons used as means of communication from R.A.F. patrol planes out over the sea to bases on land, so official hunters have been instructed to shoot them and destroy their nests.

These birds, the peregrine falcons, furnished the stock for the hunting birds maintained by nobility and royalty during the days of chivalry. Naturalists are lamenting the decree of death passed against them, but the Air Ministry insists that "safety of the Realm must come first."

*Science News Letter, February 1, 1941*

## MEDICINE

### Warns of Possibility of Lead Poisoning From Bullets

**S**URGEONS in civil and military practice should remember the danger of lead poisoning when deciding whether or not to remove a bullet from a wounded person or to leave it in the tissues where it has buried itself. This warning appears with a report by Dr. Willard Machle, of Cincinnati, of cases of lead poisoning by bullets. (*Journal, American Medical Association*, Nov. 2.)

Lead poisoning from bullets left in the body is rare, but lead can be absorbed from the bullets, particularly if they lodge in the bones at the joints, as in the two cases which Dr. Machle saw. Altogether only 40 such cases have been reported since 1867, he says, and in some of these it is doubtful whether the diagnosis of lead poisoning would be made today when doctors have laboratory tests to help interpret the symptoms.

Shrapnel pellets, rifle and pistol bullets, musket balls and bird and buckshot were all included in the 40 cases of lead poisoning from bullets left in the body. Considering the large number of shrapnel and rifle bullet wounds sustained in

the war of 1914-18, Dr. Machle points out that it is particularly noteworthy that bird and buck-shot accounted for a fairly high proportion—about one-fourth—of the 40 cases reported between 1867 and 1940.

*Science News Letter, February 1, 1941*

## PHOTOGRAPHY

### New Lens Speed Rating Permits Better Exposure

**A** NEW system of rating the speed of movie camera lenses, was described by D. B. Clark, executive director of photography in the 20th Century-Fox Studios, speaking before the Society of Motion Picture Engineers. It may prove useful for all amateur and professional photographers.

Usual method of rating the speed of a lens is by its "F. value." This is the ratio of the diameter of the front part of the lens to the distance from its optical center to the film when focussed on a distant object. However, some lenses contain more pieces of glass than others, and more light is lost by absorption and reflections from the various surfaces.

Cameramen noticed, said Mr. Clark, that when they interchanged lenses during a shooting, the picture was far from uniform, even though all lenses were set to the same F. number. Some ratings were as much as 100% in error, when reduced to the actual light that reached the film. With the new method the lenses are tested with an "electric eye," and rated in terms of a standard 35 millimeter lens at F. 3.2 with a light source of fixed intensity.

"The result," he said, "is a lens system wherein a light speed-rating represents the same amount of light, and the different light stops on the different lenses indicate a true proportional value of the basic light."

*Science News Letter, February 1, 1941*

## INVENTION

### Motor Driven Eraser Corrects Mistakes Easily

**E**RASING of mistakes by accountants or draftsmen is made easier with a new motor driven eraser. A rod shaped eraser, seven inches long, runs through the center, and through the armature shaft of the ball-bearing motor unit. It is held at the end by a chuck. The machine is operated by a control button under the index finger. (*Charles Bruning Co., 100 Reade St., New York City.*)

*Science News Letter, February 1, 1941*

## PHYSICS

### Six Elements Produced by Transmutation of Uranium

**F**IRST determinations of the amounts of various elements produced by transmutation of uranium 235 in the breaking-up process by which it is hoped to produce atomic power have been made by Drs. A. V. Grosse, E. Fermi and H. L. Anderson, of the Columbia University Department of Physics. Their results are announced in a report to the *Journal of the American Chemical Society*. (Dec. 26)

When the form, or isotope, of uranium known as U 235 is hit by a neutron, a tiny atom fragment, it breaks up into two pieces, which are different elements. Dr. Grosse and his associates find that the results of this division, or fission, fall into two groups, one of heavy elements, the other lighter ones. In the first is iodine, xenon, caesium, lanthanum and cerium; in the latter molybdenum. They have computed the proportions of each that will result from the fission of 100 U 235 atoms.

On the average, they have determined, the yield would be a little more than 50 of the heavy group elements, and about 6 of the lighter.

However, they point out, the equation they have made to show the results "is as yet incomplete, for the fission of 100 atoms of U 235 will produce 100 atoms of the heavy group and simultaneously 100 atoms of the light element group (in addition to neutrons and energy). It indicates that the discovery of additional fission fragments is to be expected."

*Science News Letter, February 1, 1941*

## NUTRITION

### Hungary Invents Ersatz Hamburgers

**H**UNGARIANS are now eating ersatz meat, concocted cheaply from "twelve garden plants and vegetables", and Germany may borrow the idea for large-scale production, says the U. S. Department of Commerce's Foreign Commerce Weekly.

Put up as a powder, the meat invention is made edible by adding water, salt, and bread, and can be cooked in hamburger or sausage-cake style by adding butter, cream, and spices, according to report. About 2.2 pounds of artificial meat are said to contain 3,727 calories, and to consist of 40% carbohydrate, and 22.3% of white albumen. Cost of four portions is figured at less than 20 cents.

*Science News Letter, February 1, 1941*