

## BOTANY

## Tobacco Quality Improved When Grown After Ragweed

**R**AGWEED, bane of hayfever sufferers, has a use in the world after all. U. S. Department of Agriculture scientists have found that tobacco is of higher quality when grown in a field that has been permitted to produce a crop of this vegetable vagabond during the preceding season.

Horseweed is another plant that appears to improve the quality of tobacco if it possesses the field during the fallow year preceding cropping. Not all weeds are good for such fallowing, however; lamb's-quarters, for instance, was followed by some reduction in yield. Well-behaved "orthodox" cover crops like lespedeza and sweet clover do not seem to be as good for the following crop of tobacco as the right kind of weed fallow.

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## AERONAUTICS

## "Airport On Wheels" Shipped To France

**A**N ELABORATELY equipped "airport on wheels" developed by the Couse Laboratories of Newark, N. J., was recently exhibited to Army Air Corps engineers at Wright Field prior to shipment of the huge motor unit to France for war duty.

Four of the mobile airports, each of which carries complete machine shop equipment, and lighting facilities to transform any cow pasture into an emergency airport for warplane use, have been ordered by the French government at a total cost of \$200,000. One of the airports is already en route to France, the unit exhibited is the second, and two others are in production.

The 75-horsepower engine which furnishes the motive power for the six-wheel drive unit also drives a generator when the "airport" reaches its temporary station. The generator supplies current in various voltages to operate a lighting system for the airport, to recharge batteries, to power a lathe, drill and other tools in the machine shop compartment of the unit, and to operate a 2½-ton boom rigged on top of the unit.

Two spare tires are mounted in front of the unit and act as a bumper with which the unit can push disabled airplanes around on the field. The complete unit weighs 26,000 pounds.

Thirty-five smaller "traveling shops" have already been shipped to China.

The "airport on wheels" is manned by

a three-man crew, commander, radio operator and driver-mechanic. The units being shipped to France are not radio-equipped, since the French government prefers to install its own sets. However, space is provided for a complete two-way radio installation in the cabin of the truck. Sleeping facilities for two men are provided in the cabin while the third is supposed to stand watch.

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## ICHTHYOBOTANY

## Garfish Scales Made Into Attractive Art Objects

See Front Cover

**S**CALES from a Southern fish that nobody has much use for, the garfish, are dyed to appropriate colors and used in the making of attractive mosaic pictures of flowers, jewelry and other interesting art objects, by Percy Viosca, Jr., of New Orleans. The purpose is to help reduce the numbers of this destroyer fish.

Among the flowers which Mr. Viosca has modeled are poinsettia, tulip, lady's slipper, daisy, sunflower, Indian pipe and black-eyed Susan. He has even worked up whole landscape "paintings" in the colored garfish scales.

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## ARCHAEOLOGY

## Bones of Tribesmen Of Powhatan Come to Light

**A** MASS of bones, believed to be remains of nearly 100 of Chief Powhatan's proud tribesmen, has been unearthed in an ossuary—ceremonial burial pit—beside the York River near West Point, Virginia.

Dr. T. D. Stewart of the Smithsonian Institution was sent to investigate and excavate the bones, when residents notified the Smithsonian that high water had washed away the river bank, exposing human bones. The village of Chief Powhatan, father of Pocahontas, was presumably a short distance away, but Dr. Stewart reported finding no trace of it. A good deal of the shore has washed away.

The burials, he said, represent an Algonquian Indian custom of digging up individual burials at stated times and re-burying them in mass, with ceremonies. Jesuit priests in Canada told of witnessing such ceremonies. Archaeologists have previously found ossuaries as far south as the Potomac, but Powhatan's neighborhood represents a new southward limit for discovery of the custom.

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# IN SCIENCE

## ZOOLOGY

## British Fight Rabbits As Well as the Germans

**T**HE British are fighting rabbits as well as Germans.

On Skokholm Island, off the Pembrokeshire coast, rabbit warrens have been attacked by large scale cyanide fumigation in order to eradicate them and render the island suitable for farming: to produce needed food during the war.

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## CHEMISTRY

## Survey of Chemical Research in Colleges

**Q**UIETLY and without fanfare the chemistry and chemical technology division of the National Research Council in Washington has been piling up information on the exact status of chemical research in America for potential use of the Chemical Warfare Service in event of any emergency.

Through a subcommittee the NRC has been sending elaborate questionnaires to leading universities and colleges of the nation to ascertain just what type of chemical equipment and apparatus leading academic laboratories possess.

Moreover, and specifically to the point, the questions seek knowledge of the types of researches now in progress, the names of the professors directing them and other pertinent information. Out of replies to these questionnaires, of which some 250 have already been returned, there is growing a card index file with cross references that permit one to spot, in a few minutes, the leading active workers in almost any type of chemical research one can imagine.

While the important survey is designed primarily for emergency purposes where a quick mobilization of academic chemistry will be needed, the file is expected to have a valuable peacetime use in serving as the nucleus for a national center of information by which duplication of research may be avoided.

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# E FIELDS

## AGRICULTURE

### "Bath Tub Farm" on Island Is Now Being Enlarged

**T**HE FAMOUS "bath tub farm" on Wake Island—stop on the overseas air line to the Orient—is being enlarged.

So successful has been soilless farming that a large Hydroponicum (that's what they are calling it) is being constructed with concrete tanks, totalling 70 feet long, 14 feet wide, 980 square feet of growing space.

In one corner, Wake Island's new chief gardener, Torrey Lyons, who has relieved the original experimenter, Lamory Laumeister, will be growing fifty pounds of tomatoes a week from seed, chemicals and water in six weeks.

So a soilless desert island that previously raised only hermit crabs is producing by new scientific methods fresh vegetables for those who fly between America and Asia.

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## MEDICINE

### Diet and Iron Treatments May Prevent One Cancer

**H**OPe for prevention of one type of cancer in women appears from recent investigations showing that it is linked with a nutritional disorder that is curable by large doses of iron. News of these investigations is hailed in the *Journal of the American Medical Association*, Nov. 11, with the following comment:

"It is noteworthy that there seems to have been uncovered an apparently preventable malnutritional condition that greatly favors the development of cancer."

The malnutritional condition is known medically as the Plummer-Vinson syndrome. It occurs exclusively in women and is featured by anemia, difficulty in swallowing, choking spells due to spasm, and inflammatory changes in the mouth, pharynx and upper esophagus or gullet.

This condition apparently paves the way for cancer, especially in the mouth, pharynx and upper esophagus, Dr. Hugo E. Ahlbom has discovered at Radiumhemmet in Stockholm, where large numbers of cancer patients are seen.

In 90% of the cases of cancer in the region of the esophagus, the patients were women, he found, and of these women, 90% gave a history of illness like the Plummer-Vinson syndrome.

The real nature and cause of this condition are not known. Nutritional deficiency, especially lack of iron, seems to play a fundamental role, since large doses of iron lead to improvement and sometimes recovery. Because the condition is limited to women, it is believed to be in some way connected with glandular and other functions peculiar to women.

To forestall the cancer which may follow this condition, early diagnosis with prompt and effective treatment is urged in the *A.M.A. Journal*.

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## ICHTHYOLOGY

### Fish "Canned" in Mud Barks When Released

**C**ANNED fish can be kept for months and transported thousands of miles—but not, as a rule, live fish. That's what makes news of the journey of a live lungfish, kept in a can in a lump of dried mud, that started at Lake Nairobi in central Africa and wound up 10,000 miles away in Chicago.

Dr. Homer W. Smith of the New York University College of Medicine tells of the strange fish's strange Odyssey, in *Natural History*, the magazine of the American Museum of Natural History.

Lungfishes are evolutionary leftovers from the Devonian geologic period, 50 million years ago, when all higher-class fishes breathed air with lungs. They are adapted to survival through long periods of drought, sleeping inside lumps of hardened mud, protected by cocoons of their own secreting.

The fish of which Dr. Smith tells was put into a can in a quantity of soft mud, which was permitted to dry out slowly. Until it became too stiff and hard, the fish kept coming to the surface at intervals, to fill its single lung. Finally it settled to the bottom and secreted its cocoon, obtaining the extremely small amount of air it needed through the channel to the surface which its risings for air had formed.

At the end of its long journey the mud was removed, and the fish was found in the cellulose-like wrapping of its cocoon. It awakened from its dormant state very quickly, and made barking sounds by expelling air explosively from its lung. Aside from being thin from its long fast, it was lively and in apparent good health.

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## ZOOLOGY

### Long-Distance Breeding Used Increasingly in U. S.

**T**HERE are lambs on the outskirts of Washington whose sires have never been east of Idaho; lambs in Idaho whose sires live in the pastures of the U. S. Department of Agriculture station at Beltsville, Md. Airplanes carried the prize rams' semen that made these long-distance breedings possible.

This animal parentage at a range of a couple of thousand miles is only the most spectacular aspect of the rapid development of the technique of artificial breeding in this country. A little over a year ago, it was well established in only one state, New Jersey. Now there are artificial breeding associations in 15 states, either actually operating or in process of formation.

Artificial breeding enables a farmer or rancher to have his new stock sired by the choicest animals available, regardless of distance, at fees so moderate that it becomes unnecessary for him to maintain sires on his own place, or to patronize nearby owners of male animals of possibly less desirable qualities.

Artificial breeding is being encouraged as part of the Farm Security program, with the cooperation of state extension dairy specialists. While first attention has been thus far focussed on cattle and sheep, it is expected that community livestock centers will become established for the artificial breeding of hogs, horses and mules as well.

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## CHEMISTRY

### Hydrogen Peroxide Made With Less Electric Energy

**G**OOD news for synthetic blondes: A new commercial method for production of hydrogen peroxide uses only a third or a quarter of the electrical energy required by older processes.

Such news is even more interesting to industries using this important bleaching chemical. Prof. E. Berl of the Carnegie Institute of Technology has reported to the Electrochemical Society his new cathodic process which uses cathodes made wholly or partly of activated carbon of good electrical conductivity. One trick in the electrochemical process is that starting with a cheap potassium chloride solution, it is possible to produce chlorine at the anode and alkaline peroxide at the cathode, producing a combination of the two bleaching agents for cotton in the cheapest possible way.

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