

## AGRICULTURE

## Helicopters Used to Dust Wheat Fields with 2,4-D

➤ HELICOPTERS and airplanes were used to distribute weed-killing 2,4-D over wheat fields in the neighborhood of Dodge City, Kansas, Sunday, May 16. It was the first large-scale use of 2,4-D to kill weeds among the wheat ever undertaken in this country.

Special interest attaches to the use of helicopters for this work. Sprays released from airplanes elsewhere in this country have been partly wasted through drifting down the wind, and in the South a good deal of trouble was caused by the injury and killing of cotton plants by these unintended doses of the chemical. If the down-thrust of the helicopter rotors can make the 2,4-D spray "stay put," it may solve what has grown to be a major dilemma in weed-killing.

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## PHYSIOLOGY

## Smoking Produces Tremor In Fingers if You Inhale

➤ SMOKING even half a cigarette will make your fingers tremble—if you inhale. This was shown by experiments on 100 college students at Athens, Ga., of whom 50 were smokers and 50 non-smokers.

The smokers show more finger tremor as a result of the smoking than do non-smokers, Dr. A. S. Edwards, of the University of Georgia, who conducted the experiment, reports in the current issue of the *Journal of Applied Psychology*. This he attributes to the fact that the habitual smoker generally inhales. For non-smokers, the finger trembling went up 18%. For smokers the increase was 39%.

In another experiment, the students took eight puffs on a cigarette in a minute. Habitual smokers showed an increase of 84%. For the non-smokers, this time, it was noticed which inhaled and which did not. The inhalers among the non-smokers averaged 129% and for seven of these the average ran as high as 272.3%. Compare this with 9.9% for the non-smokers who did not inhale! Neither was any tremor increase noticed after the students had sat in a smoke-filled room, provided they did not do the smoking.

What causes the tremor? Is it the nicotine? To test this point, the students were given nationally advertised "denicotinized" cigarettes. Results were

practically identical as with the standard tobacco. But when cornsilk was used no increase in tremor resulted even after an hour of smoking. The cornsilk was smoked in pipes, because the students had difficulty in making cigarettes of it.

Dr. Edwards also tested out the claim made by some students that they should not be expected to go through a two-hour examination without a smoke. After two hours of deprivation of cigarettes, the finger tremor was measured. If there was any nervousness as a result of going without smoking it did not show up in trembling finger tips.

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## NUTRITION

## Rice-Eaters Susceptible To Hidden Hunger Diseases

➤ RICE-EATERS are more likely to suffer hidden hunger diseases than wheat-eaters, Dr. W. R. Aykroyd, director of the nutrition division of FAO, told the International Congress on Tropical Medicine and Malaria meeting in Washington.

The reason is not any deficiency in rice itself. Husked rice, Dr. Aykroyd said, is about as nourishing as other cereals in the same state. But processes between harvesting and eating of rice rob it of many of its nourishing substances.

Making a bad situation worse, the rice-eaters of the world depend much more heavily on rice for their chief food than wheat-eaters depend on wheat. Almost three-fourths (70%) of the total calories in the rice-eater's diet come from rice. This is just too much rice. Even if the rice is enriched or specially processed to contain thiamin and other vitamins, rice-eaters would still suffer from diet deficiency diseases.

They would be better nourished if they ate more meat, milk, eggs, and fish. Rice-eaters, however, are generally poor and live where the land is so densely populated that very little if any can be spared for cattle pasturage. So they are not likely to get more meat, milk and eggs in the near future.

An immediate practical way of improving their diet, Dr. Aykroyd suggested, would be to eat more fish, pulses, beans, vegetables, fruits, roots and tubers, rice polishings, food yeast and coconuts. The available supply of pulses, vegetables and fish could be increased in most rice-eating countries in a relatively short time.

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# IN SCIENCE

## PALEONTOLOGY

## Ancient Fossils Found In Pre-Flooding Surveys

➤ SIXTY-MILLION-YEAR-OLD fossils, dating back to the last days of the dinosaurs, are being turned up in quantity by scientists making surveys of areas that are to be permanently flooded when the new reservoirs now projected are completed. Thus far, 94 such reconnaissance surveys have been made in the Missouri river basin, and promising sites for digs by trained paleontologists have been marked for exploration before the waters rise.

Surface scrapings have turned up many fossil fragments of primitive horses, tapirs and lower primates belonging to the beginning of the Age of Mammals. Somewhat earlier, contemporary with the last of the dinosaurs, is the three-foot shell of a soft-shelled turtle, found on the Big Horn river near Shoshone, Wyo.

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## ANIMAL HUSBANDRY

## Famed Holstein Bull Dead; Sired 15,000 Offspring

➤ RAG APPLE, a famous Holstein bull credited with siring more than 15,000 sons and daughters through artificial insemination, is dead. A post mortem disclosed a small piece of wire in his intestinal tract.

Rag Apple was owned by the New York Artificial Breeders' Cooperative in Ithaca, N. Y. He had been in service for three years four months. Dairy specialists look for an increase in the production of thousands of dairy herds which boast descendants of the famed bull.

Had Rag Apple stayed in natural service during this period, his ability to transmit high production would probably have been limited to slightly more than 100 offspring, it is estimated.

Rag Apple's record is one that few if any bulls in the world have equalled. His reputation went far beyond state boundaries. One of the first questions of visitors from all parts of the country and abroad was always sure to be, "Where's Rag Apple?"

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# E FIELDS

## AERONAUTICS

### Track-Tread Landing-Gear Permits Use of Soft Field

➤ TRACK-TREAD landing-gear on a heavy airplane made successful take-offs and landing on an unimproved runway at the Idlewild International Airport, New York. The track-gear performs the same function as the belt-like tread on a tractor or tank, thus spreading the weight of the plane over a greater area.

The plane equipped with the track-tread gear was a Fairchild Packet grossing 54,000 pounds. It was the first of its size to be supplied with this landing gear. This twin-engine cargo transport was chosen for the test because it was originally designed to operate in and out of short, unimproved airstrips.

The 14-inch-wide ribbed track on the steerable nose gear in the tricycle installation on the plane, and 19-inch-wide tracks on each main gear, were designed by Firestone Tire and Rubber Company. They are single-piece belts made of rubber reinforced with steel cables.

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## MEDICINE

### Worm Disease Causes Fits Like Those in Epilepsy

➤ A WORM disease that can cause fits like those in epilepsy and which may be mistaken for epilepsy or some mental trouble was reported by Lieut. Col. W. H. Hargreaves, medical liaison officer of the British Joint Services Mission, to the International Congress of Tropical Medicine and Malaria meeting in Washington.

The disease is called cysticercosis and is caused by the larval form of pork tapeworm. When the larvae get into the body they are surrounded in time by calcium. These hard lumps or cysts may be found anywhere in the body. They can sometimes be seen under the skin. When they get in the brain they may cause fits.

The condition may occur here in the United States or in any other country where pork tapeworms are found, Col. Hargreaves said. He and Dr. H. B. F. Dixon screened every British Army veteran reported to have fits and found

more than 300 of them had worm cysts in their brains. Most of the men had seen service in India and apparently picked up the worm larvae there through contaminated food or drink.

Individual worm cysts can often be located with X-rays and removed, even from the brain. But since there are usually many of the cysts, this treatment is not very practical. Some patients who were going blind because of the cysts were helped by a decompression operation.

The disease has a low death rate, eight percent, and very few of the surviving patients show any signs of the disease getting worse. More than a third are improving and one-sixth, approximately, have recovered.

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## HORTICULTURE

### Pollen-Hoarding Tomato Makes Hybridizing Easy

➤ HYBRID tomatoes, with all the advantages of size, quality and abundance that go with hybrid production, are brought nearer to American tables by the discovery, at the West Tennessee Experiment Station, of a tomato plant that is unable to shed its pollen. Its significance is discussed in *Science* (May 14) by Dr. W. E. Roever.

In breeding hybrid strains of plants, it is desirable to have the female or fruit-producing individuals "male-sterile," that is, incapable of being fertilized by pollen from its own flowers. As a rule, such male-sterility is due to the production of defective pollen, or even of practically no pollen at all. This, however, imposes a handicap in that it is difficult to keep the parent line going on what few grains of good pollen can be found.

The tomato plant which Dr. Roever discovered, however, does produce good pollen, and plenty of it. But the pollen sacs at the ends of the stamens simply fail to open, so that under natural conditions in the field there is no chance for self-pollination. The parent line can be kept going with pollen artificially extracted. In the field, hybridization is assured with pollen from a different line.

This pollen-hoarding tendency is a hereditary character, capable of being transferred to new lines of tomato plants by suitable breeding procedure. Dr. Roever estimates that it will save about 75 per cent of the labor involved in hybridizing.

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## AGRICULTURE

### Four Researchers in Agriculture Get Award

➤ FOUR leading research workers of the U. S. Department of Agriculture were presented with certificates of the Department's Distinguished Service Award, at a ceremony attended by many of their colleagues.

Those honored are:

Philip V. Cardon, Bureau of Plant Industry, Soils, and Agricultural Engineering, Beltsville, Md., "for outstanding service and exceptional leadership in the advancement of agricultural science."

Dr. John I. Hardy, Bureau of Animal Industry, Beltsville, Md., "for his imagination and persistence in inventing and constructing altogether new devices for measuring important qualities of wool and other fibers."

Frederick D. Richey, Bureau of Plant Industry, Soils, and Agricultural Engineering, stationed at the Agricultural Experiment Station, University of Tennessee, Knoxville, "for outstanding service in organizing and leading the co-operative corn breeding program which gave hybrid corn to American agriculture."

William D. Smith, Grain Branch Office, Production and Marketing Administration, New Orleans, "for outstanding service to agriculture and rural life through the invention of a machine for testing milling quality of rough rice and the development of rice standards."

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## PHOTOGRAPHY

### Newly Patented Camera Uses Two Films at Once

➤ SNAPSHOTS can be taken either in color or in black-and-white with the same camera, simply by turning a knob; or any other combination of two different kinds of film can be used, in the invention on which Walter D. Teague of New York has received U. S. patent 2,439,112.

The trick is very simple. There are two film-exposing frames set back to back, with film-roll holders at either end. The entire setup is mounted in a pair of light-tight metal circles at either end, and a knob or key is provided to bring either frame into position behind the lens, as the operator may desire.

Rights in the patent have been assigned to the Eastman Kodak Company.

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