

## AGRICULTURE

# Science Preparing the Feast

Thanksgiving menus this year will profit from the work of plant and poultry scientists who have given us small turkeys and improved sweet potatoes.

## By MORTON STARK

► YOUR ideal Thanksgiving feast is being prepared now, not by chefs but by scientists at plant and poultry experiment stations.

Some of the scientists' handiwork, like the Beltsville Small White turkey and well-fleshed sweet potatoes, are already available. Others, like bigger cranberries and home-grown chestnuts, are still on the way.

The small turkey, product of years of breeding experiments, was tailored to the needs—and kitchenettes—of the small-size family of today. The market bird averages around 11½ pounds, has a compact body carrying a high percentage of edible meat.

### Compact Turkey

The desired compactness, intended for small ovens as well as small families, comes from the fact that the Beltsville turkey does not have the gap that turkeys usually have between the rear of the breast bone and the legs.

The sweet potato that you will find when you go marketing is another product of the plant breeders' skill. Although the varieties on sale don't show the striking modifications of the diminutive turkey, they are improved types.

### Improved Sweet Potato

One of the more common, called Orlis (a contraction of orange-little-stem), has been bred as a successor to older less satisfactory sweet potatoes. It is high in carotene content, a vitamin A element. This and other kinds which have been developed by the plant breeder assure the housewife that the potatoes she buys will not be stringy and that the flesh will be firm, moist and of an appetizing color.

Your succulent turkey with its attendant yams will no doubt be garnished in the traditional manner with cranberry sauce and chestnut stuffing. If these fall short of the plant breeders' highest expectation for them, it will not be for lack of trying.

It is a long uphill road from the drawing board to the festive board. Take chestnuts, for example.

Back around 1915 Department of Agriculture scientists started to introduce foreign chestnut trees into this country. Their object at the time was not better nuts, but better trees for timber. Our own trees produced an abundance of excellent chestnuts, which duly found their way on Thanksgiving Day into the very center of the center of interest. Into the turkey, that is.

Unfortunately, the introduced chestnut

trees, mostly from the Orient, brought with them the chestnut blight. American trees were fatally susceptible to the blight, and have been all but wiped out. The market chestnut is an import from Italy or Spain.

### New Chestnut Types

In the intervening 40 years since the Oriental trees were first brought in, government scientists have been at work trying to develop a new chestnut to replace the native type. Only a few weeks ago, they announced that they have succeeded. Now that the three new types, with large, sweet nuts, are going out to tree nurseries, it can be predicted that within a span of years American-grown chestnuts may once more be available for their traditional task of stuffing the traditional bird.

Cranberries are another matter. Good domestic cranberries are to be had, and no apologies need be made for them. They too, like the sweet potatoes, have benefited by years of selective breeding for the most desirable characteristics. But the extra big berry with which Agriculture Department small-fruit breeders have been hoping to

tickle the American palate this year is not yet ready.

It looked for a while as though it might be available in time. The type berry has already been developed, but all the experimental work that goes into the launching of a new variety has not yet been completed. After certain trials and crosses now under way have been tallied, it is hoped that this large-size, high-gloss, high-yield berry may be ready to announce in the spring.

There are many things that Americans have to be thankful for this Thanksgiving. It might not be amiss, after the more reverential solemnities, to make a small secular bow in the direction of the scientists who are constantly at work improving the menu's classic ingredients.

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### GEOLOGY

## Crossing Nile by Dry Land Bridge Impossible Now

► NOT Biblical like crossing the Red Sea, but it is a fact that crossing the Nile on dry "land" was possible up until a few years ago. But the bridge, which was a mass of floating vegetation, was washed away in the floods of 1946.

About a year ago there were reports that



**NEW CHESTNUT VARIETY**—America's bid to replace her vanished native chestnut, new blight-resistant strains, will not be available in quantity to stuff many birds this year.



**SMALLER TURKEY**—S. J. Marsden, in charge of the Department of Agriculture research that developed the Beltsville Small White Turkey, holds one of the compact 11½ pounders.

another bridge was beginning to form, with grass, trees and other vegetation being brought down the river and held by a large rock in mid-stream which acted as a foundation. But the very heavy floods of last October washed it away. This year there was a search along the banks of the Nile, from Nimule to Juba, without finding a sign of a dry crossing.

Elephants were able to cross the bridges that were successively in existence for eight and 10 years. They were located where the river is 80 yards across and the bridges were about 250 yards wide.

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#### CHEMISTRY

### Fluorine Plastic for Industrial Use Developed

➤ A FLUORINE plastic in a form that will stick to many metals, to glass and to porcelain for industrial use was announced. Fluorine is a very reactive chemical that has only recently been tamed.

Known for its outstanding resistance to heat and chemical attack, the plastic, tetrafluoroethylene, has previously been difficult to fabricate because of these very properties.

Chemists at Du Pont Company, Wilmington, Del., have increased the possible uses of the compound, trade-marked Teflon, by reducing the size of the plastic bits until they are so small that they remain suspended in a carrying liquid, somewhat the way butter fat is suspended in fresh milk.

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#### VETERINARY MEDICINE

## New Foot-Mouth Virus

This new type of virus, foreign to Mexico where it was found, is disturbing since its source is unknown and present vaccine is not effective against it.

➤ THE unexplained appearance in Mexico of a foot-and-mouth disease virus of a type hitherto unknown there is a matter of grave concern, but U. S. government officials do not think it will turn into a runaway plague like the original outbreak in December 1946.

The single known site of the new virus Type "O", a ranch near Mexico City, has already been cleaned out. And all the experience and equipment gathered in three years of fighting the disease is in readiness, should it reappear.

This high state of preparedness permits a certain amount of optimism, but members of the Joint Mexican-United States Commission for the Eradication of Foot-and-Mouth Disease are deeply concerned over the outbreak. So are Department of Agriculture officials in Washington, one of whom labelled it "extremely serious".

They are concerned because of mystification over the source of the new virus. The original infection was caused by virus Type "A". The vaccine now in use is only effective against Type "A". The new virus is Type "O", known in Europe and South America but hitherto undetected in Mexico.

There are two possible sources of Type "O". It might have been brought in from outside the country. The authorities have been vigilant in their efforts to guard against importation, but it still might have slipped in despite these precautions.

The other source is by natural mutation of a Type "O" strain of virus from the original Type "A". This theory has never been proven, and scientists are not certain the new type could arise in this way.

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#### BIOLOGY-BOTANY

## Test Tube Tomatoes Grown

➤ RED tomatoes, as tasty as vine-ripened ones, have been grown on synthetic food from a flower detached from the plant.

This is the first time that fleshy fruits have been grown by a test tube process though such growth of isolated roots, stems and seed embryos has become classical.

The test tube tomatoes were grown by Dr. J. P. Nitsch of the Kerckhoff Laboratories of Biology at California Institute of Technology, Pasadena, Calif.

The tomatoes "tasted like usual tomatoes," he reports in the journal, *SCIENCE* (Nov. 11). They were seedless and small. Each was about one inch in diameter. But each flower had only about an ounce of food supply at its disposal. The lack of seeds, Dr. Nitsch says, may have been due to the lack of pollination, because the plants were raised in a greenhouse where pollination was very poor, or to killing of the pollen tubes by the sterilizing chemicals.

The tomato flowers that yielded the test tube tomatoes were of the San Jose variety. They were cut from the plant, sterilized with calcium hypochlorite, and planted in glass flasks containing various chemicals. No growth occurred in a medium containing only mineral salts, sugar, vitamin B one and the amino acid, cysteine. The addition of sterile juice from either green or red tomatoes caused the ovaries to develop.

A week after planting in the glass flasks, the ovaries became visible, pushing up the

petals and stamens which had kept them hidden. They then enlarged regularly until about the 25th day after full bloom, when growth slowed down.

About the 35th day, fruits turned red and ripened at the same time as tomatoes left on the plant.

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#### AERONAUTICS

### Droppable Fuel Tanks Give B-50 Bombers Longer Range

➤ DROPPABLE external fuel tanks, one under each wing, give a new version of the Boeing B-50 Superfortress a longer range, it was revealed in Seattle, Wash., by Boeing officials. The two tank fittings when not wanted to carry fuel can be used to carry a 4,000-pound bomb.

The best known of the B-50s is "Lucky Lady II" which circled the earth relatively recently in a non-stop flight, being refueled in the air several times on the trip. The new bomber, known as B-50D, is now being delivered to the U. S. Air Force.

Other improvements in addition to the detachable fuel tanks are included in the advanced version. They are new radar equipment, a new molded plexiglass nose section, a modified four-gun turret, and a new refueling system by which the plane is fed with fuel from a single intake.

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