

AGRICULTURE

New Foods From Abroad

Uncle Sam's plant explorers and agricultural chemists team to make earth yield more food with less labor, discovering new plants for food and industry.

By JANE STAFFORD

► A BONANZA harvest of new, better plants for food and industry will be reaped during the second 50 years of Uncle Sam's plant hunters and breeders.

More than 32 billion dollars worth of food and non-food products for industry is coming from American farms this year, not counting the 2 or 3 billion dollars worth of food that stays on the farm to feed farm families and the additional billions in grain kept on the farms to feed livestock there.

Many of these billions in bread and butter, meat and potatoes, onions for the steak, rubber and oil are the golden anniversary gift to the American people from their Department of Agriculture's Bureau of Plant Industry, Soils and Agricultural Engineering, which is just 50 years old. And yet Dr. Robert M. Salter, chief of the bureau, states:

"The big harvest is still ahead."

Plant hunters of the bureau who range the world, sometimes at risk of life, have played a key part in doubling the return from American farms during the past 50 years.

Our Major Crops Not Native

All the major crops grown in this country are of foreign origin. Corn and tobacco were brought here by the Indians from South America. Pioneer settlers from Europe brought in our hay and cereal crops.

Soybeans, one of the most versatile crops grown on American farms, were known in the United States more than 100 years ago. But American farmers did not "strike it rich" with this crop until Uncle Sam's plant hunter, W. J. Morse, in the late 1920's, searched the Orient for breeding material for the improved varieties now grown on more than 14 million acres in the United States. Soybeans now provide raw materials for more than 400 manufactured products including edible oils, industrial oil, paints, varnishes, adhesives, soaps, plastics, vegetable fiber, printing ink and hundreds of others.

The soybean crop is but one example of how Uncle Sam's plant hunters and breeders have in the past 50 years made it possible for our farmers to get more from their land and their labor.

During the past half century, reports Dr. Salter, all crop plants have been made better and some new ones have been introduced. Thousands of improved varieties

have been developed that thrive better under specific soil, climatic and other growing conditions. Shown on the cover of this week's SCIENCE NEWS LETTER is a close-up of an improved strain of Western wheat-grass developed for sand tolerance.

On most farms the variety of each crop grown has been changed several times during the last half century. About 200,000 new plant varieties have been introduced through Uncle Sam's organized program of plant hunting. Notable among these have been:

Ladino clover from Italy, Tung nuts from China, Trebi barley from Asiatic Turkey, Acala cotton from Mexico, dates from Africa, Hegari sorghum from Africa, Ladak alfalfa from India, Federation wheat from Australia, Korean lespedeza, Sericea lespedeza, Abaca from the Philippines, Victoria oats from Uruguay, Russian wild rye from Siberia.

To the city dweller many of these strange names mean little or nothing. But ladino,

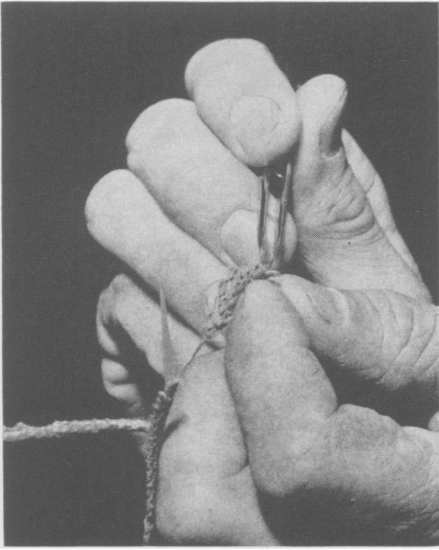
lespedeza and some of the other forage crops can be transformed via livestock to more meat and milk and butter. And since crippled, arthritic joints hurt just as much in the city as on the farm, both town and country folk watch eagerly for results of one party of plant hunters now in Mexico looking specifically for plants that might yield cortisone, the drug that relieves suffering from arthritis.

Plant "blood banks" are one of Uncle Sam's operations for improvement of our farm yields. At these banks, germ plasm of plants discovered by the hunters is catalogued, retained, propagated and made available to plant breeders.

Of the thousands of new plant introductions in the past few years, some are already showing signs of future value. From the Midwest there are reports that an alfalfa introduction from Turkey has outstanding resistance to the leaf hopper insect. From Florida there are reports that certain of the introductions of rye, obtained from the high Himalayan area of India, are far better than any other strains so far observed for winter pasture and forage. One of the wild potatoes picked up exploring Mexico has shown high resistance to the Colorado potato beetle.



NEW CROPS—For the big harvest to come, thank U. S. plant hunters and breeders, such as Dr. Edward E. Clayton, who explore the world for new varieties and cross them with others for better yields in bread, oil, rubber and medicines. These future crops, developed by the U. S. Department of Agriculture, are not yet commercially available.



BREEDING STUDIES — Close-up view shows flower of a selected strain of Bermuda grass being emasculated for breeding studies at the Georgia Coastal Plains Experiment Station in Tifton.

In California one cantaloup introduced from India appears resistant to a new strain of Downy Mildew that has attacked the cantaloup industry in that state. From New York we have reports that beans introduced from Turkey show resistance to bean anthracnose, a disease that so far we have had little success in combating. In North Carolina plant breeders have recently found nematode resistance in lespezea. The recently introduced Roan variety is the first lespezea with nematode resistance. The source for that resistance was an introduction from the Orient.

Castor beans look like a possible crop for replacing cotton on some lands in Oklahoma, western Arkansas, and northern Texas. Castor beans are a source of oil for many industrial uses. Research is under way on breeding and selecting high-yielding, shatter-resistant varieties adapted to mechanical harvesting. About 90,000 acres are being grown this year.

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Safflower is a promising new oil crop adapted to the wheat areas of the Western Plains. Safflower seed yields are of very high quality for cooking or for paints and varnishes and meal of high protein content for livestock feed. Seed of high-oil-content varieties was available for planting about 150,000 acres last year.

Sesame is under study as a possible vegetable oil crop in the Coastal Plains area from North Carolina to east Texas. The development of non-shattering high-yielding varieties of sesame is far enough along that the first seed may be offered to farmers within relatively few years.

And if you like sweetened jujubes, you can get a superior American variety of this centuries-old Chinese fruit, thanks to plant explorer Frank N. Meyer who in 1908 brought large-fruited varieties to the Southern Great Plains Field Station at Woodward, Okla. Although the jujube may never be a major crop, it meets the Southwest's needs for a fruit tree that thrives in hot, dry weather and withstands winter freezes without injury.

Science News Letter, November 3, 1951

MEDICINE

Aid for Childless Women Seen in Hormone Chemical

► RESEARCH FOR couples wanting children and for others wanting to postpone parenthood was reported at the New York Academy of Sciences conference in New York on world population problems and birth control.

A hormone chemical from the pituitary gland in the head, which has given the famous anti-arthritis ACTH, will be the answer to the problem of the woman who cannot have children because of ovarian failure, in the opinion of Dr. M. Edward Davis of the Chicago Lying-In Hospital and the University of Chicago.

For the woman blessed with enough children, there is a gel which has provided effective birth control in 98.2% of 704 patients. This was reported by Drs. G. Wilson Hunter, C. B. Darner and J. B. Gillam of Fargo, N. D., and Dr. William B. Stromme of Minneapolis, Minn.

The gel is a "smooth, white, odorless preparation" containing the sperm-killing chemicals, Ricinoleic acid and p-Diisobutylphenoxy-polyethoxyethanol. It is non-irritating, spreads readily and has been found acceptable as well as effective.

"The marked improvement in maternal and infant mortality and morbidity (sickness) statistics in the last 20 years," the North Dakota and Minnesota doctors stated, "is due to the widespread availability of contraceptive information as well as the improved methods of treating these patients."

Their studies were designed to test a method which besides being effective would be easy to use, non-irritating, inexpensive and do away with mechanical devices.

The discovery of ACTH, hormone chemical from the pituitary gland which stimulates the adrenals to produce cortisone, should spur scientists to find a similar hormone that would stimulate growth and rupture of the egg-containing sacs in the ovaries and production of corpus luteum which produces the pregnancy hormone.

ACTH has been tried in the hope of correcting ovarian failure in childless women, but the results have been irregular and not sustained.

Science News Letter, November 3, 1951

ACOUSTICS

Hearing Aid Automatically Suppresses Loud Noises

► A HEARING aid with a self-regulating noise suppressor to dull sudden, loud sharp noises is the latest help to hard of hearing persons.

It also has a finger-tip control that dims background rumble, designed to help in listening to conversation in a busy restaurant or on the street.

In this last respect, the new aid is "an improvement on the human ear," says Dr. Irving I. Schachtel, president of Sonotone Corporation of New York which manufactures it.

Science News Letter, November 3, 1951



I Discovered How To
HEAR AGAIN
IN 20 SECONDS

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