ENTOMOLOGY

U. S. Ready for Fruit Fly

A RECEPTION committee is always ready to greet the dreaded Mediterranean fruit fly if it should stray across the U.S. border from Central America.

The fly, probably the world's most destructive fruit pest, does not now infest the United States. Three invasions of the fly have been successfully stamped out during the past 36 years.

In an effort to stop a growing invasion of the Mediterranean fly in Central America, a million-dollar battle will start next July under the direction of the International Atomic Energy Agency and the Food and Agricultural Organization, a project of the United Nations.

Having appeared in Costa Rica in 1955, the insect has spread to Nicaragua and western Panama.

The destruction it causes costs fruit growers some $7 million per year, and it is estimated that if all adjoining countries become infested, destruction could reach $82 million per year.

The dread fly has not yet shown up in Mexico, but it could.

The three invasions of the fruit fly into Florida were controlled in two ways, it was learned from the plant pest control division of the U.S. Department of Agriculture.

The first, in 1929, was stopped by a huge program that destroyed the host fruit. The second infestation, in 1956, and a very small one last year were controlled by chemical pesticides.

A program of sterilization is now underway to combat the Mexican fruit fly in California and lower California. With this sterile-male technique, similar to that to be used in the UN Central American program, billions of insects are reared, sterilized and released. Sterile males then compete with wild ones in the breeding grounds, and since their matings produce no offspring, the species dies out.

Experiments with the sterile-male technique began about 20 years ago. The method achieved its first great success when the screwworm fly was completely eliminated from the island of Curacao. This screwworm fly is constantly being controlled by the U.S. Department of Agriculture along the Mexican border.

Basic work was undertaken against the tropical fruit flies at the Department of Agriculture's station in Honolulu about ten years ago. Many flies reared there are flown to islands in the western Pacific.

The technique eliminated the oriental fruit fly from some of the Pacific islands, and the melon fruit fly from an island north of Guam.

The UN project for sterilization of the Mediterranean fruit flies in Central America is not aimed at complete eradication, but rather at development of methods. Under the present project, $1.2 million will be spent in three years, with nearly $824,000 coming from a special UN fund for the purpose, and $425,000 provided by the concerned countries—Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama.

The joint Food and Agriculture Organization and International Atomic Energy Agency's division of atomic energy in agriculture was formed last year, with Maurice Fried as director.

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Yale University News Bureau

FIGHTING SAWFLIES — Professor Francois Mergen and Associate Professor Walter R. Henson check the paper filters which separate infant, pine needle-eating, Neodiprion sawflies on jack pine cultures, in a study to breed pine trees with greater resistance to these sawflies. →

FORESTRY

Grant Made to Save Pines From Killer Sawflies

BY GROWING pine trees that are able to resist the destructive sawflies, scientists at Yale University hope to save some of the valuable U.S. pine trees.

The sawfly larvae, which cause extensive damage by eating pine needles until the trees die, resemble greenish-brown caterpillars, with dark brown heads, rows of brown spots on their sides and dark brown streaks on their backs.

The sawflies have caused extensive damage over large sections of Quebec, Michigan, Wisconsin and Minnesota. Other sawflies cause serious problems in Southern pines, Western ponderosa pines, lodge-pole pines, and white pines of the Northeast.

A grant of $100,000 from the U.S. Forest Service for five years' research for breeding sawfly-resistant pine trees has been given to Drs. Francois Mergen and Walter R. Henson of Yale's School of Forestry.

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PLANT PHYSIOLOGY

New Plant Hormone May Improve Crops

PLUMPER FRUITS may result from the use of a new plant hormone that makes some plants shed their leaves and die and thus permits remaining plants to grow better in the thinned-out areas.

The new hormone, called abscisin II, was extracted from cotton plants, said Dr. Fredrick T. Addicott, University of California at Davis. The chemical helps develop a special layer of tissue at the base of leaves or fruits which then weakens the stalks and causes the plant parts to drop, he told the 149th national meeting of the American Chemical Society in Detroit.

This is the first such natural defoliant to be chemically identified, he said. Scientists may later develop "anti-abscisins" to keep fruits and leaves on a plant for a longer time than usual.

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ICHTHYOLOGY

Strange New Fish Found Off Coast of Florida

See Front Cover

A TINY BLACK FISH with enormous eyes and trailing orange spots has recently been discovered 150 miles off the coast of Florida.

The inch-long fish, magnified about five times, seen on this week's front cover, scientifically named *Kasidoron edom,* has a broad flat head and trails a long filament from its underside, from which stream many leafy appendages. On each appendage is an oval luminescent orange spot which shines in the dark, Drs. C. Richard Robins and Donald P. de Sylva, Institute of Marine Science, University of Miami, Fla., reported.

Other specimens of the same fish family were captured. The fish are believed to inhabit regions from about 450 to 1,500 feet deep during the day and to come near the ocean surface at night. The biologists believe the appendages may serve as camouflage, for the orange spots in darkness resemble a cluster of stinging jellyfish-like animals found in the same region.

The first specimen of the new group of fishes was caught in a plankton net near midnight last summer at a depth of about 60 feet. It was alive, in excellent condition, and swam vigorously around the laboratory aquarium aboard the research vessel, John Elliott Pillsbury.

Two other specimens of the family, both smaller than the first caught, were taken the same night, but were brought aboard dead, as is usually the case with fish caught in nets at these depths. Upon examination of previous hauls, scientists found an immature fish less than one-third of an inch long of the same group, which had been netted four days earlier.

"Finding a new family of fishes in this day and age is an extraordinary achievement," stated Dr. F. G. Walton Smith, director of Miami's Institute of Marine Science.

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