

ENTOMOLOGY

Insect Pests on Upswing

➤ MILLIONS OF ACRES of forests, fields and farmlands will be engulfed and consumed by increasing hordes of insect pests this year, surveys reveal.

High on the list of the insect explosion are grasshoppers, Mormon crickets, 17-year locusts and forest tent caterpillars, U.S. Department of Agriculture scientists say.

Surveys last fall indicate many more pests than in previous years, and the winter mortality of most species was lower than expected, William L. Seal of the USDA Survey and Detection Operations Office told SCIENCE SERVICE. Predictions of the damage expected cannot be made since it varies with control procedures and weather, he said. But great increases in insect populations are expected in all areas of the country.

This is the year for swarms of the periodical cicada, or 17-year locust, to invade the Mid-Atlantic seaboard, their incessant singing a warning of their presence.

Damage is usually great in the year of the locusts. The females punch holes in trees and shrubs for egg-laying, killing the branches and allowing diseases and other insects to infest the trees and bushes.

Grasshoppers have been on the increase recently, Mr. Seal said. In Montana alone they infested 8,000,000 acres in 1961, nearly four times the amount of 1960. This year the increases will again be significant, the Agriculture scientists said.

Mormon crickets were found on nearly 98,000 rangeland acres in six states in the West and Midwest last fall.

The forest tent caterpillar has had a serious outbreak in Louisiana and Alabama, damaging nearly 2,000,000 acres of hardwood trees in the two states last year. Agriculture experts are worried about another, larger outbreak this year.

The West is in for a heavy infestation of the potato psyllid, an insect which indirectly damages tomatoes and potatoes.

The South will have another bad year with the elm spanworm, which caused damage in more than 1,500,000 acres of hardwoods last year.

The bark beetles will increase activities in the West, South and Southeast, while more than 10,000,000 acres of trees are expected to suffer from the spruce budworm.

Cankerworms, linden loopers and the gypsy moth are expected again to invade the East, defoliating many acres of forests.

Only two important insect pests are expected to decrease, USDA reported. The greenbug, a wheat-eating pest, and the European corn borer are becoming less active and less numerous, a relief to farmers in many parts of the country.

The major explanation for the great increases in insects in the past two years seems to be the weather, one expert said. Pest control is continuing at breakneck speeds and farmers and park officials have been warned about pest increases, but the public should be aware of the dangers, a Department official warned.

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OCEANOGRAPHY

Mohole Pioneers Form New Corporation

➤ THE IMAGINATIVE PIONEERS of a project to penetrate the earth's crust by drilling through the ocean floor have formed a new company.

The corporation, called Ocean Science and Engineering, Inc., Washington, D. C., will be spearheaded by the team of engineers who designed and carried out the world's first deep-ocean drilling experiment a year ago as part of the Mohole Project. Project Mohole is an attempt to drill through the earth's crust to the underlying mantle.

The group is developing a device for taking deep cores of the soft ocean-floor sediments, designing a method for mooring barges in deep water and taking oceanographic measurements from aircraft. They will also continue to work on the Mohole Project as advisers and subcontractors.

President of the new company is Willard Bascom, director of the Mohole Project for its first three years. Mr. Bascom is highly enthusiastic about the new venture, pointing out the almost limitless possibilities opened up by the increasing interest in oceanography.

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ACOUSTICS

"Voiceprints" Useful For Identification

➤ VOICES OF THE PAST may haunt you in the future with a new method of voice-printing similar to fingerprinting, the Acoustical Society of America learned in New York.

Little "pictures" of a word reveal the patterns of voice energy, a distinct and identifiable characteristic of each speaker, explained Lawrence G. Kersta of Bell Telephone Laboratories. The pictures are drawn as voice spectrograms and are more distinctive to the eye than the ear.

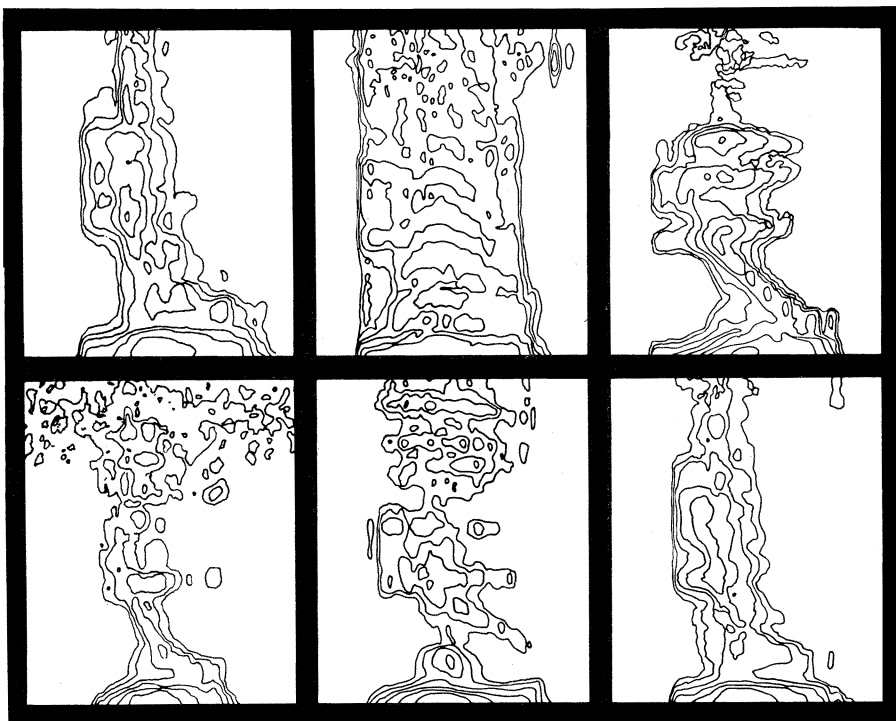
Experiments with voiceprints of the same word by several persons showed that although the prints were mixed up, trained scientists could select and group the correct cards from any speaker more than 97% of the time. Despite any attempt to disguise the voice, speakers can be identified, Mr. Kersta said. (See voiceprints at left.)

Acoustics engineers have known for some time of the wide variation in voices, he pointed out. This is the main factor which prevents building a voice-directed computer or robot.

The mouth, throat and nasal cavities concentrate a person's voice energy into bands of frequencies. Whether disguised by raising or lowering pitch or speaking with an accent, the voiceprint remains nearly constant.

Voice identification will eventually achieve accuracy somewhere between fingerprinting and handwriting identification, Mr. Kersta predicted. Anything you say may be held against you.

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WHICH "YOU" HAS A DOUBLE?—Six voiceprints of the word "you" spoken by five different persons are shown. From the similarity in the print the two made by the voice of the same person can be identified.