

## ENTOMOLOGY

**Radar Is Newest Weapon In Fight on Locusts**

➤ TRACKING LOCUST swarms by radar is now seen as the newest means for providing data to carry on successful aerial warfare against these ravenous insects.

Held only as a theoretical possibility heretofore, the use of radar in supplying information on the structure, density and movements of flying swarms has now been confirmed, Dr. R. C. Rainey of the Desert Locust Survey Headquarters, Nairobi, Kenya, reported in *Nature* (Jan. 8).

The first radar-sighting of a locust swarm, the scientist said, was recorded on March 22, 1954, in the Persian Gulf by H.M.S. Wild Goose.

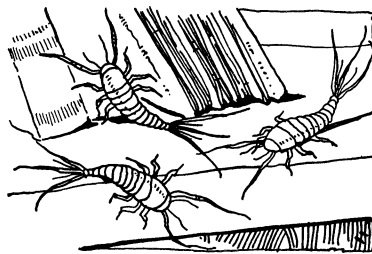
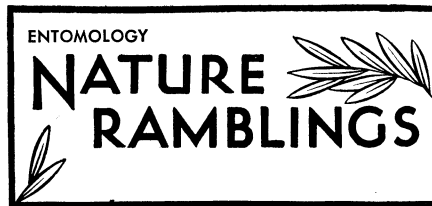
"The locusts appeared to constitute a swarm of at least 15 miles radius," he stated, "and were detected at ranges up to 60 miles over a sector of up to 80 degrees, giving large 'fluffy' echoes on a plan-position-indicator, similar to the effects of mechanical jamming."

Before this recording, radar monitors faced the problem of trying to distinguish between a heavy rainfall echo and that caused by the locusts. The use of newer radar sets has now made the distinction in echoes possible.

What it will mean in the locust warfare can be likened to that of human warfare. The data from the radar, similar to early warning systems for detecting aircraft, together with meteorological and other information, will permit airplanes to engage the flying swarms in mid-air and spray them with insecticides.

In an earlier report, Dr. Rainey and H. J. Sayer of the Survey, stated that application of this "aerial curtain" was responsible on one occasion for killing 3,000,000 locusts following the use of 300 gallons of spray on a single flying swarm.

Science News Letter, January 22, 1955



**Silverfish**

➤ ONE OF the most bothersome of household insect pests, one that does not suspend operations even in the winter, is the silverfish, a bristle-tailed insect seldom seen and hard to catch when it is seen.

Its tapering body suggests a fish, and it is covered with glistening little scales, so the name is not inappropriate. Also it slips through the fingers that try to imprison it, like a wet fish.

Silverfish will turn up in the best-kept of houses, and indeed are especially likely to appear in homes that boast a library. For they are among the most troublesome of book pests. They will eat paper, being particularly fond of high quality papers with a glazed surface.

They may also eat the paste that holds the binding together, and if their nefarious work goes on long enough, it may require the rebinding of whole sets of volumes. By the same affinity for glue or paste, they are enemies of wall paper.

Besides ruining books and wall paper, the silverfish aims at the destruction of anything held together with paste or gum. It plays havoc with starched clothing, chews at the gum-glazed cardboard labels in museum cases, and gets into stored cereals and other starchy foods. It is fond of rayon and may cause serious damage to fabrics made of this fiber.

The silverfish multiplies most annoyingly. Like several other insects, it does not need a water supply to exist. The water needed for life is obtained by chemical processes within the body. The insect just manufactures it as required from its food material.

Silverfish are among the most primitive insects, according to the classification schemes of naturalists. Their body-structures are little specialized, their reactions are among the least complex known, and they have no wings. They have a number of relatives, including the so-called bristle-tails, and these all have the same shy and furtive habits.

Efforts to discourage these pests have been made by bookbinders who "dope" their paste with arsenic. More effective in controlling silverfish is DDT, used either

as a spray or a dust. When this pest-killing chemical is applied thoroughly to the spots where the insects occur, death comes quickly, and a deposit of the chemical remains to kill those that later crawl over the treated surface. Pyrethrum sprays also kill the pests, but they act only upon direct contact with the silverfish and do not have a lasting effect.

It is rather in the nature of these seclusive pests to be in places not normally treated for their occurrence. Attics or basements, for instance, where books, magazines, papers and clothing are often accumulated make excellent hide-outs.

Representatives of the Department of Agriculture's Bureau of Entomology and Plant Quarantine vouch for the statement that one species, called the firebrat, is a veritable salamander, preferring to live in the vicinity of a fireplace, furnace or other hot spot. It crawls rapidly over hot bricks or metal and shows the most surprising immunity from the effects of high temperature.

Science News Letter, January 22, 1955

## Questions

**ENGINEERING**—What materials in automobile exhausts react to make ozone? p. 55.

**GENETICS**—How thick are the fibrils that make up chromosomes according to the latest theory? p. 53.

**GEOGRAPHY**—Where is Timbuktu? p. 59.

**RADIO ASTRONOMY**—In what constellation is the center of the Milky Way? p. 51.

**ZOOLOGY**—Where is the largest herd of Texas longhorns? p. 61.

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