

## ENTOMOLOGY

# Alien Beetle on Rampage

A potential economic threat to next year's spring wheat crop is the cereal leaf beetle imported from Europe, which devours oats, wheat, barley, rye, corn and succulent grasses.

## See Front Cover

► ONE OF NATURE'S newest potential threats to the country's breadbasket—the spring wheat region of the Dakotas and Montana—is the cereal leaf beetle, now spreading through grain belt counties in Michigan, Ohio and Indiana.

The dread of grain farmers, the cereal leaf beetle devours everything—oats, wheat, barley, rye, corn and succulent grasses, leaving only the leaf skeleton behind.

The beetle, like the European corn borer, is a foreign import. It slipped into Michigan several years ago, possibly via the St. Lawrence Seaway, and has since overrun Indiana and Ohio. The adult beetle, magnified approximately 23 times, is shown destroying an oat stalk on this week's front cover.

Agriculturists fear that the hardy flying beetle, which can successfully withstand cold Siberian winters in Asia, may spread farther north by next spring, seriously damaging the spring wheat crop.

Larvae hatch sometime in May and feed on the young tender oat shoots or any other available host. The pupa stage, during which the larvae become adults, occurs in June, and the adults emerge in July. They feed on corn and grasses until autumn when they retire to fences, hedgerows, trash piles and clumps of grass for the winter.

By now, 99% of the beetles are adults and going into a decline for the 1963 season.

Experts state in Cooperative Economic Insect Report that no more severe damage is expected until the new 1964 brood appears early next spring.

However, agriculturists are seriously concerned about the beetle's threat next spring and its possible threat to the winter wheat and barley crops. The Department of Agriculture plant and pest control division is studying insecticides, resistant varieties and natural biological controls.

U.S. information concerning the cereal leaf beetle, identified here in 1962, is very sparse, and American entomologists must rely on European information about the beetle.

Experiments with insecticides in Sweden in 1959 showed that the larvae can be satisfactorily controlled by spraying parathion, lindane, or malathion. This year about 39,000 acres were sprayed via helicopter and airplane in Berrien and Cass counties in Michigan alone.

Quarantines, in which all possibly infested equipment or grain leaving the county is investigated, are in effect in 17 counties in Michigan, 14 in Ohio and several in Indiana.

Natural biological control of the insect is also being studied. European parasites that feed on the quarter-inch-long beetle have managed to check its spread abroad where it is prevalent in Asia, the Near East, North Africa, the Mediterranean and south-

ern European countries. U.S. scientists are now in Europe to check on these natural parasites, previously unknown in the U.S., with plans of introducing them into this country next spring.

The adult beetle is recognized by bluish black wing covers and reddish brown legs. The larvae have yellowish bodies with brown-black legs. The beetle is known to entomologists as *Oulema melanopa*.

Several species of North American beetles such as the asparagus beetle closely resemble the cereal leaf beetle, but the unusual colors of the adult are not found in these species.

• Science News Letter, 84:83 Aug. 10, 1963

## MILITARY SCIENCE

### Two Nations Expected To Join Test Ban Club

► LOOKING A DECADE in the future, two nations with atomic bomb potentialities are expected to join the three-power atmosphere test ban club which has just been formed by the treaty concluded in Moscow.

They are France, which has exploded an A-bomb of the fission type, and Communist China, which is expected to have a crude A-bomb in a year, effective fission bombs in five years and thermonuclear weapons in five more years.

Meanwhile the test ban by no means will limit nuclear weapon development but it will drive it underground literally. It may take Russia as much as six months or a year to build the underground test facilities that the United States already has installed.

The United States will be saving possibly a billion and a half dollars, a few hundred million due to lower testing costs and a billion or so as the result of a cutback in bomb production that is expected to be justified.

Underground testing will keep our atomic laboratories active, strong and alert to improved weapons. A bright new idea in physics research may at any time give a new departure that could be of great importance. The hope is that this will occur in an American rather than a Russian laboratory.

Any nation with an industrial and scientific potential as high as Sweden can probably achieve atomic bombs if it desires to spend the high price. This means that China, Italy, Japan, Israel and Sweden could in the near future engage in the atomic game, provided they wished to use their resources in that manner.

Switzerland, India, Indonesia and Belgium are not far behind. Some South American countries could reach atomic capability in another decade. But for policy reasons, it is not believed that nations like Sweden and Switzerland, for instance, will be entering the race.

The cost of becoming an atomic power is less now than other nations have shown the way because the nations desiring atomic arms are not starting from scratch. This is true because much information that cannot be held secret is developed by scientists and these facts point direction on the atomic road.

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USDA

**BEFORE AND AFTER**—The oat plants (left) have been literally devastated in the picture on the right by the cereal leaf beetle, potential economic threat to the 1964 spring wheat crop.