

An adult male gypsy moth - only <sup>3</sup>/<sub>4</sub>-inch long - is held captive while his reaction to various sex attractants is recorded by USDA scientists.



Hundreds of thousands of gypsy moth traps such as this are scattered through the eastern United States each year. The traps, which are baited with an artificial sex attractant, provide data on pest spread and population levels required for planning and conducting USDA and state regulatory activities.

## USDA Fights Constant War Against Gypsy Moth

Gypsy moths have been in this country since 1869, when imported specimens escaped during experiments being performed by a Massachusetts naturalist. Extensive Federal-State efforts confined gypsy moth destruction to New England, New York and Pennsylvania for many years.

But, in 1958, concern over the possibility of environmental contamination caused a switch from large-scale spraying of DDT to limited application of less persistent insecticides.

In recent years, gypsy moth populations have built up to alarming levels, with spread occurring throughout much of the Northeast and into parts of the South. The nearly 2 million acres of trees defoliated in 1971 doubled the acreage stripped in 1970, was six times more than in 1969, and was twelve times more than recorded in 1968.

The gypsy moth is a European insect and is one of the world's worst forest pests. They are harmless in the moth stage, but as caterpillars feed on the leaves of forest, shade, ornamental and fruit trees.

A single complete defoliation can kill some softwood trees; two or more defoliations can kill many types of hardwoods.

USDA has an intensified research and development program underway to provide nonchemical weapons to help bring the gypsy moth under control.

Biological controls expected to be operational in the next five years include: a bacterial insecticide, bacillus thuringiesis; a virus that is a critical factor in halting natural outbreaks; and the use of the artificial sex attractant, disparlure, to confuse male moths and prevent mating.

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Natural enemies of the gypsy moth are also being studied in the hope that man can learn to "manage" these biological agents. A battery-operated transistor radio signalling device is used to study movement patterns and mortality factors of white-footed deer mice--an important predator of gypsy moth caterpillars. The tiny device is inserted into a mouse's body cavity.

USDA and the infested States annually cooperate in importing, rearing and releasing millions of insect enemies of the forest pest.

Female moths attach their egg masses to tree trunks and other hard surfaces--including mobile homes and recreational vehicles. The velvety egg masses are covered with buff or yellowish hairs from the abdomen of the female and average about  $1\frac{1}{2}$ inches long and  $\frac{3}{4}$  inches wide. Each mass contains up to 1,000 eggs.

In their later stages, gypsy moth caterpillars are from 1½ to 2½ inches long and sport pairs of red and blue dots on their backs. Each mature caterpillar eats one square foot of leaves every 24 hours. Campers and mobile home owners can help stop the spread of gypsy moths by carefully inspecting their vehicles and camping equipment before traveling from infested to uninfested areas In the past, the pests have often achieved longdistance artificial spread by attaching their egg masses and "cocoons" to such equipment.

Lancaster Farming, Saturday, July 8, 1972–13

USDA does not undertake or cooperate in any spray programs until Department scientists have evaluated the environmental, biological and economic impact of applying different pest control methods versus the consequences of not taking any action at all.

Gypsy moth infestations leave their mark on urban and suburban areas as well as on forests. Caterpillars cover sidewalks and get into water reservoirs, stores, homes and swimming pools. They make parks and other outdoor recreational facilities temporarily unusable and lower property values with tree-killing defoliations.



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Scientists in an Agricultural Research Service laboratory in Beltsville, Maryland, are conducting chromatic separations of an active gypsy moth

sex lure material. This was an important step in the development of a powerful and persistent synthetic lure for trapping gypsy moths.