Habits and Control: Gypsy Moth

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Gypsy Moth

By William E. Wallner, Extension Specialist in Entomology

The Gypsy moth, *Porthetria dispar,* a native of Europe and Africa, was accidentally introduced into Massachusetts in 1869. Since then, it has spread throughout New England and gradually south and westward an average of 3 to 6 miles a year—principally by larval dispersion. Long-distance spread has been attributable to man and his activities, such as moving infested material (trailers, recreational vehicles, etc.) containing egg masses or other life stages (Fig. 1).

It is believed this is how the Gypsy moth was introduced into Michigan near Lansing in 1954, and Duck Lake in Calhoun County in 1966. Both of these infestations were believed eliminated by chemical control. Then in 1972, Gypsy moth was detected in Isabella County and control programs were initiated in 1973. Male trappings later in 1973 indicated that the infestation was more extensive than suspected, as males were detected in some 21 counties. At least 600,000 acres in Michigan are probably lightly infested.

Damage

Gypsy moth is a nuisance to people in addition to being a forest pest. Larvae are normally very numerous and interfere with acceptable outside activities such as camping, picnicking or merely enjoying one's own home grounds. Trees can be killed by 2 or more years of complete defoliation; however, this mortality is highly variable. Factors such as tree type, age, growing site, amount of defoliation and environmental conditions will influence the impact on the tree.

It is highly unlikely that Gypsy moth will be numerous enough in Michigan to cause severe problems in the immediate future. The Michigan Department of Agriculture and the USDA's Animal and Plant Health Inspection Service hope to contain and suppress the spread of Gypsy moth. However, it is important that you understand some basic facts about this insect, its biology, and how to recognize it so that newly established infestations can be located.

Overwinter

The Gypsy moth overwinters as masses of up to 1,000 eggs covered with buff or yellowish hairs from the abdomen of the female. Masses, about 1 1/2 inches long and 3/4-inch wide, are laid on the bark of trees, under stones, in hollow trees, on buildings or any other solid material affording protection from the weather. During

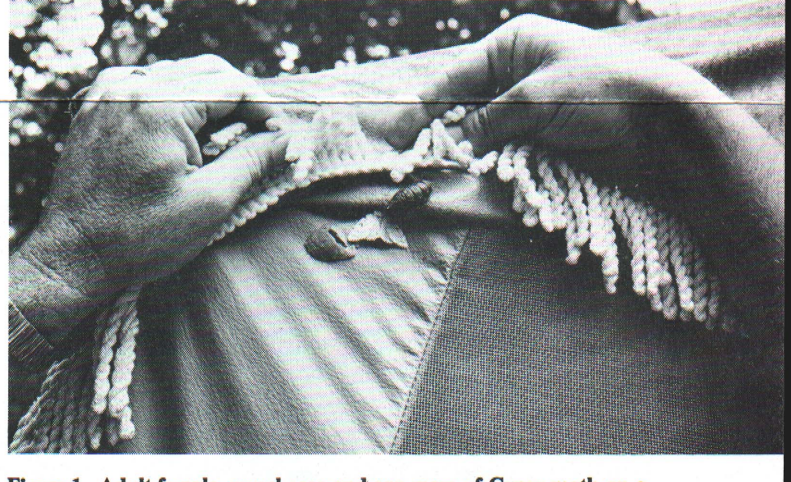

Figure 1. Adult female, pupal case and egg mass of Gypsy moth on a recreational vehicle. It is by this method that Gypsy moth is believed to have been introduced into Michigan.

late April or early May, eggs hatch (Fig. 2) and young larvae move to the tops of trees where they spin down on silken threads allowing air currents to blow them considerable distances. This is the principal means of natural dissemination. Larvae feed on most hardwood species, but oak, poplar, apple, gray birch, hawthorn and willow are preferred hosts. Newly hatched larvae feed on the leaf bases, then leaf surfaces where they chew holes in the leaves. The older larvae feed inward from the leaf edges completely consuming the leaves, leaving only midribs and larger veins.

Larvae are hairy caterpillars about 1 1/2 to 2 inches long with the first five body segments blue and the last six brick-red. They mature during late June and pupate. Pupae are normally located on the bark of trees or in a place protected from the weather. Adults emerge about mid-July (Fig. 3); both males and females are winged but only the males can fly. Females, white moths with a buff or yellowish abdomen and a wingspan of 2 inches, lay their eggs near the pupal case from which they emerged. Males, dark brown moths with a wing expanse of 1 1/2 inches, find females by means of a pheromone (sex lure produced by the female). This scent or odor, which attracts males up to 3/4 of a mile, has been chemically duplicated. This chemical, known as Disparlure, is used to bait sticky traps to detect new infestations, or determine the extent of old ones, by trapping males.

Control

It is too early to anticipate controls for Gypsy moth on private property. Past experience in the eastern U.S. indicates that several years are required for severe populations to develop. In the meantime, research is continuing on the Gypsy moth by Michigan State University and the USDA. More sensitive methods of detection and survey are being developed. Assessment of biological controls, including those parasitoids and predators native to Michigan and the impact of weather upon the survival of Gypsy moth, are currently underway.

If you discover what you regard as a life stage of the Gypsy moth, please contact your County Extension Agricultural Agent or Michigan Department of Agriculture inspector.

Use this bulletin as a descriptive guide to recognize the Gypsy moth and help prevent its further dissemination in Michigan and other lake states.

Figure 2. Gypsy moth egg mass with 1st stage larvae just hatching from the eggs. These small (less than 1/4") larvae are disseminated by wind and account for the major means of natural spread of the insect.

Figure 3. Adult female (left, white) and male (right, brown) Gypsy moth. Males seek out females by the sex odor (pheromone) emitted by the female. This pheromone has been chemically duplicated and is used to detect new infestations by baiting sticky traps with it to capture males.

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