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INSECT DIAGNOSTIC LABORATORY
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Gypsy Moth

Lymantria dispar (Linnaeus); Family: Lymantriidae

Injury

The gypsy moth is one of the most important forest pests in the Northeast. The caterpillars feed on leaves of forest, shade, ornamental and fruit trees, and shrubs. A single defoliation can kill some evergreens, but usually two or more defoliations are needed to kill hardwoods.

Description

Larvae (caterpillars).
Photo from www.forestryimages.org
USDA APHIS, Oxford, North Carolina Archives.

Small larvae are dark brown to black and very hairy. As they reach maturity they become slate colored and have 2 rows of blue spots (5 pairs) followed by 6 pairs of red spots on the back. Fully-grown larvae are 2 to 2 1/4 inches (50-56 mm) in length.

Pupae.

Photos from www.forestryimages.org
Terry McGovern, USDA APHIS PPQ.

Adult moths.

Pupae are brown and teardrop shaped. A few threads of brown silk hold the pupae in place on the tree trunk.

Male moths are brownish with black markings and have a wingspan of 1 to 1 1/4 inches. Females have white wings with dark markings and a tan to buff colored body. Females are heavy bodied and do not fly.

Egg mass and hatching larvae.
Photo from www.forestryimages.org
William M. Ciesla, Forest Health Management International.

The egg masses are 1 1/2 inch long by 3/4 inch wide (38 x 19 mm), covered with a dense mat of buff colored hairs. They are often found on trunks of trees or underside of larger branches. Current year egg masses have a good buff tan color and are hard and velvety to the touch; older ones are faded, and soft to the touch as the eggs have hatched.

Life History

There are four distinct stages to the development of the Gypsy moth -- egg, larva, pupa and adult (moth). The eggs are round, black to brown in color, and deposited in masses of 100 to 600 eggs in July and August. The tiny caterpillar overwinters inside the eggshell, but does not hatch until the following April or May. When the eggs hatch, the 1/4 inch (6-8 mm) long caterpillars remain on the egg mass for a few days before climbing to the tree to feed.

The young caterpillars also spin silken threads and hang down from the tree branches. Wind often breaks the threads and carries the caterpillars to nearby trees and shrubs. This is called "ballooning." Long range dispersal is aided by man -- egg masses or pupae may be inadvertently carried on vehicles, outdoor furniture, plants and the like.

The female passes through 6 caterpillar growth stages; the male, 5 stages. Each time the larva grows it sheds its skin and a new larger skin forms. The larval stage lasts for about 7 weeks.

In June and early July, full-grown larvae may leave the host plant and seek out protected places to form the pupa or resting stage. At this time, the large caterpillars may be seen crawling across walkways or roads, or up the side of a house. The pupal stage lasts about two weeks.

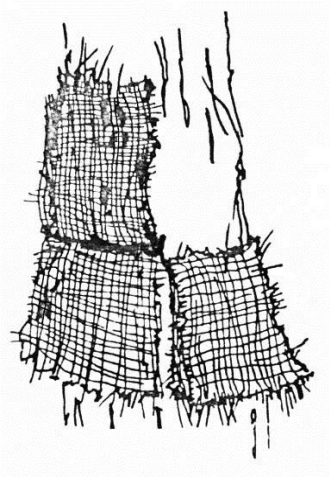
Moths emerge from the pupae -- the males usually emerge first. Males are strong fliers and may be seen flying in a zigzag pattern during the daytime. The female does not fly, but remains near the pupation site and releases a sex attractant (pheromone) which attracts males. After mating she deposits her eggs in a single mass and then dies. There is one generation per year.

Management

Before mid-April, look for overwintering egg masses on tree trunks, rock outcroppings, fences, sides of buildings and woodpiles. Scrape off the fuzzy buff colored egg masses into a container, and destroy them.

Young caterpillars may be controlled by spraying. The homeowner can spray small trees and shrubs, but larger trees should be done by a professional arborist. READ and FOLLOW the manufacturer's instructions when using any pesticides. If needed, spray foliage in May after larvae hatch (90–448 GDD; growing degree days). If using Bt (*Bacillus thuringiensis* ssp. *kurstaki*), apply before larvae reach 1 inch in length.

Pupae may be crushed when found on the trees or in other protected places. It is not practical to try and control the adults. The females might be collected by hand and destroyed, but trapping the males or trying to catch them in flight is not effective for control in areas of high populations.



Burlap folded over a string wrapped around a tree trunk.
Left side of the burlap fabric is lifted up to show where to look for and remove any caterpillars.

Older caterpillars can be controlled to a degree by banding the trees. The older larvae move up the trees in the evening to feed and back down at dawn to seek shelter during the day.

A burlap strip 12 to 18 inches wide can be cut and tied around the trunk with twine. Fold the top half of the band down and over the lower half to provide a sheltered area for the caterpillars to hide under during the day. Lift up the burlap and look between the layers, to collect and destroy caterpillars daily.

Alternatively, a 6 to12 inch band of nonporous material can also be wrapped around the trunk and smeared with a sticky substance such as Tanglefoot (available at many garden supply centers.) The caterpillars will stick to the Tanglefoot as they try to move over it. Remove caterpillars by raking the band with a comb whenever they become numerous, and destroy them.

NOTE: the hairs on the caterpillars can be irritating, causing itchy bumps on the skin. Use gloves or tools rather than bare hands, when picking up, brushing off, or crushing gypsy moth caterpillars.

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