



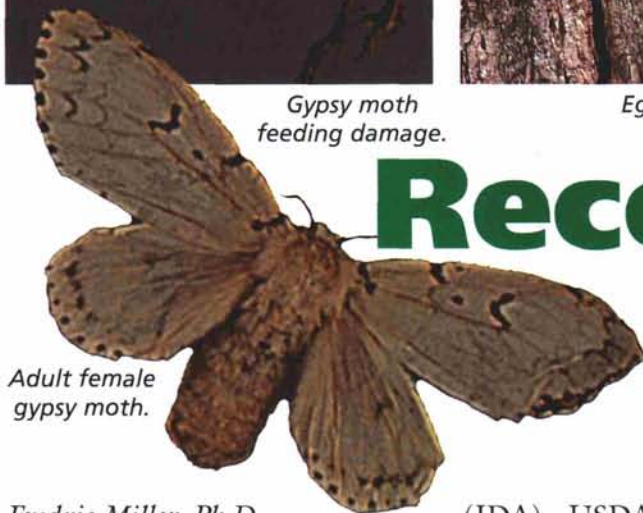
Gypsy moth feeding damage.



Egg mass.



Gypsy moth larva.



Adult female gypsy moth.

Recognizing and Living With the Gypsy Moth

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When you think about all the possible insect pests that affect our shade trees, the gypsy moth is probably one of the most destructive. Feeding by gypsy moth larvae results in complete defoliation of preferred tree species; and when populations are high, the sheer number of caterpillars are a major nuisance and even pose potential public health problems. The hairs that cover the caterpillar's body can cause skin, eye, and respiratory problems for people, and the heavy "rain" of fecal pellets make outdoor events less desirable. In spite of the extensive defoliation experienced in the northeastern United States, so far Illinois has been spared the ravages of the gypsy moth. Thanks to the extensive and dedicated efforts of the Illinois Department of Agriculture

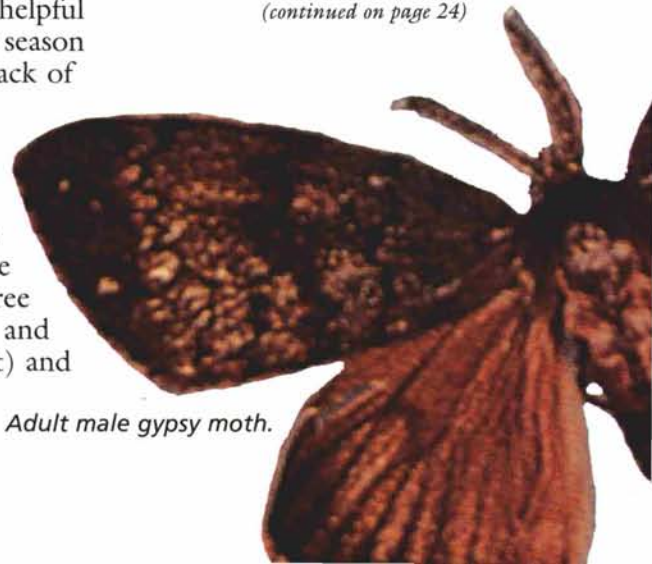
(IDA), USDA APHIS, and the USDA Forest Service (USDAFS), the gypsy moth has been kept under control. However, the next five to ten years will tell the real story. With surrounding states heavily infested, it will be very difficult to keep the gypsy moth out of Illinois.

Understandably, people confuse the eastern tent caterpillar, fall webworm, cankerworm, and other leaf-eating caterpillars. How does an arborist or golf course manager really know if they have the beginnings of a gypsy moth infestation? Some helpful tips include the time of the season when feeding occurs, the lack of a web or nest, and the type of feeding damage. Gypsy moths overwinter as eggs that hatch in the spring, usually mid-May in northern Illinois. The young caterpillars feed on tree foliage throughout May and early June (usually at night) and

spend the daylight hours clustered together on the trunks and branches of trees. In late June, the fully grown larvae migrate to protected areas to pupate.

In early July, adult moths emerge and mate. The male moth is attracted to a strong sex pheromone emitted by the female moth. After mating, the female moth lays her egg mass under loose bark, in woodpiles, on outdoor furniture, or in any other concealed location. The eggs overwinter and do not hatch until the following spring.

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Adult male gypsy moth.

Recognizing and Living With . . .

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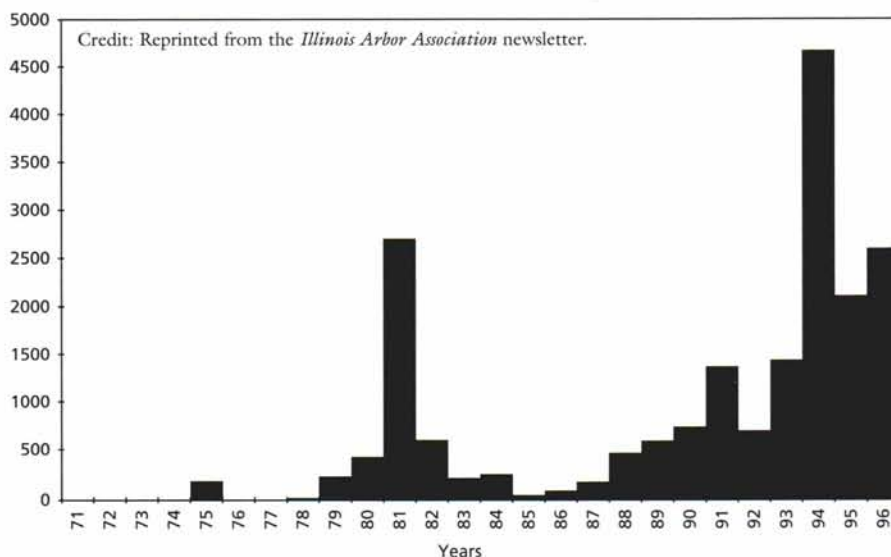
The egg masses will be 1-1/2 inches long and 3/4 inches wide and buff color. Egg mass surveys can be done in the fall. The movement of articles containing these egg masses is the major way in which the gypsy moth is spread from place to place. There is one generation of the insect per year. Comparing the gypsy moth with other leaf-eating caterpillars, you can see that the gypsy moth does not form a web or nest like the fall webworm or eastern tent caterpillar and is much earlier than the fall webworm, which appears in late summer (i.e., late July, August).

The eastern tent caterpillar has a much narrower host range (i.e., *Rosaceae*, *Prunus*) as compared to gypsy moth which feeds on a wide variety of hosts, including the most preferred hosts of oak, apple, aspen, basswood, hawthorn, and birch. Additional hosts include beech, cherry, black gum, hemlock, hickory, hornbeam, larch, maple, pine, sassafras, and spruce. Tree species not normally attacked are ash, balsam fir, butternut, black walnut, catalpa, red cedar, dogwood, holly locust, sycamore, and tulip poplar.

Spring and fall cankerworms and other "loopers" usually appear just before and may overlap just a bit with gypsy moth activity, but they can easily be distinguished apart. Cankerworms do consume the entire leaf like the gypsy moth but lack the hairy body, are smaller in size (1-1/2 inches long), vary in color (e.g., brown, tan, green), form a "loop" when they move, and have two to three sets of prolegs.

On the other hand, the gypsy moth larva is 1-1/2 to 2-1/2 inches long when full grown, is brown, hairy, and has a double row of several red and blue dots down its back.

Adult Gypsy Moths Captured in Traps in Illinois



Why are gypsy moths such a threat to our shade trees? As we have learned through research and observation, consistent extensive defoliation of trees can result in stress problems. Studies done on oaks in the northeastern United States have shown that when trees are repeatedly defoliated year after year that the trees are weakened and become vulnerable to wood-boring insects (two-lined chestnut borer) and root rot fungi (i.e., *Armellaria*) which eventually will kill the tree. As we all know, most of our shade trees are already experiencing some degree of stress as it is.

What can we do to prevent the spread of gypsy moth; and if it shows up, what are our best management options? To prevent spread, keep a sharp look out for egg masses and be able to properly identify the larvae. Do not assume that everything that eats leaves is a gypsy moth. Properly identify the pest! If you need help, feel free to contact your local regulatory agency or university extension office.

When damage does become a problem, other management options include chemical sprays

and use of microbial insecticides. At this point in time, only the state and federal regulatory agencies have been active in applying insecticidal sprays. Natural controls that will be helpful include predators, pathogens, and parasites. For example, the fungus *Entomophaga maimaiga* caused drastic reductions in Michigan gypsy moth populations during 1996. This fungus is most effective during cool, wet springs which occurred in 1995 and 1996. Whether this fungus will continue to be effective, only time will tell. In any event, timely and judicious use of chemical pesticides is important in order to minimize adverse effects on these natural control agents.

To wrap up, be vigilant in your monitoring activities for all potentially harmful pests and use good pest management decision-making processes. If we continue to work together, hopefully, we can keep the gypsy moth at arm's length for a time. 