Gypsy Moths in Our Parks

Washington, D.C.

Little engine of destruction: the gypsy moth caterpillar

True to their name, gypsy moths have hitched rides from place to place, traveling forest to forest southward from New England. In the Washington area, where their favored oak trees are plentiful, gypsy moths have multiplied in a few years to numbers that threaten to destroy trees that are the pride of the nation's capital.

The moths' voracious appetites pose a severe problem for many grand groves already weakened by air pollution and other urban pressures. The National Park Service, charged by Congress "to preserve forests and natural scenery in and about Washington," is attempting to control the gypsy moth population and minimize the damage.

The Moths' Story

The decimation of millions of trees in eastern forests can be traced to the accidental release of a few moths more than a century ago from a Massachusetts laboratory where they had been brought from Europe for an experiment with silkworms. Meeting few natural enemies, the moth population multiplied.

Despite its name, this insect is not a threat as a moth; the damage it causes comes during its caterpillar stage. The gypsy moth's life cycle has four stages: egg, larva, pupa, moth. When the tiny young caterpillars, or larvae, hatch in April, they float on silken threads or crawl upward seeking topmost tree leaves as food. Although they prefer oaks, they will also munch on many other varieties such as sweet gum, willow, birch, beech, and apple trees. Chewing constantly, the larvae grow through stages called instars, molting five or six times to develop into 2 1/2-inch long, tufted, brownish caterpillars with five pairs of blue dots and six pairs of red dots down their backs. They do not form webs or tents.

Beginning mid-June, mature caterpillars transform themselves into reddish-brown teardrop cases or pupae. Within the month, adult moths emerge. Males, brown with black markings, look quite different from females which are bulkier and light in color. Only males, attracted by the females' sex odor, can fly to find mates; the females, heavy with eggs, wait for the males. In early August the female deposits as many as 1000 eggs in a fuzzy tan oval 3/4 inch by 1 1/2 inches, called an egg mass, and dies soon after. The eggs' long dormant period holds through winter until April when the hungry new wigglers hatch.

Unwelcome Visitors

Gypsy moths have made their way to the national parks as tiny larvae hanging on silken threads drifting in the wind. They sometimes ride from infested areas in camping gear or under cars and recreational vehicles. First detected here in 1982, their numbers have spread to Rock Creek Park, Fort Dupont Park, George Washington Memorial Parkway, Great Falls Park, Catoctin Mountain Park, and other parklands.

Gypsy moths have shown a remarkable capacity to survive. There is as yet no practical way to get rid of them without severe harm to other woodland life. To deal with the problem the National Park Service has endorsed a series of steps known as Integrated Pest Management (IPM). Its purpose is to limit chemical treatments so that natural controls can take effect where possible. In metropolitan Washington local agencies, the U.S. Forest Service, and the National Park Service are working together to implement appropriate controls.

In the parks, personnel first monitor the moth population by counting egg masses and trapping male moths in many locations. When heavy infestation that would damage foliage is found, the manager marks the area for a spring spraying. The program changes each year depending on what the monitors find. Moths in small numbers are left to

From pupa cases (right), female moths emerge to carry on the cycle.

PHOTOS: U.S. DEPARTMENT OF AGRICULTURE

Female moth deposits tan egg mass.

natural controls—predators, parasites, disease, and adverse weather.

For the spray, the National Park Service has chosen the biological insecticide B.t. (*Bacillus thuringiensis*), known by such tradenames as Dipel and Thuricide. This is a naturally occurring bacterial pesticide which the Environmental Protection Agency registers as harmless to humans, pets, plants, and wildlife. It is toxic only to caterpillars and some leaf-chewers that feed at or near the site of application. The spray has short-term effects, causing larvae to die of starvation; and it leaves no residual buildup. It protects foliage when chewers are in moderate numbers.

Experiments in some parks have used small amounts of a spray called Gypchek, a commercial virus used to suppress gypsy moths. It is more selective, attacking only gypsy moth caterpillars, but it is more expensive and difficult to apply.

Other controls are under study or being tried: traps baited with pheromone (a sex attractant), mating disruption, predators and parasites, even ways to alter trees genetically to repel the hungry hordes. Much research is under way and new approaches will surely appear. For the present, the National Park Service has chosen the integrated approach, combining many of these methods along with moderate spraying when necessary.

What You Can Do

Informed and alert park visitors and neighbors can help stem the spread of these unwanted gypsies. Learn to recognize their life stages, from buff egg mass to caterpillar to pupa case to moth. Then, when visiting parks or camping, check the dim undersides of your vehicle and camping equipment with a flashlight for egg masses or dangling pupae that might try to hitch a ride to your next stop. Scrape and destroy any you find.

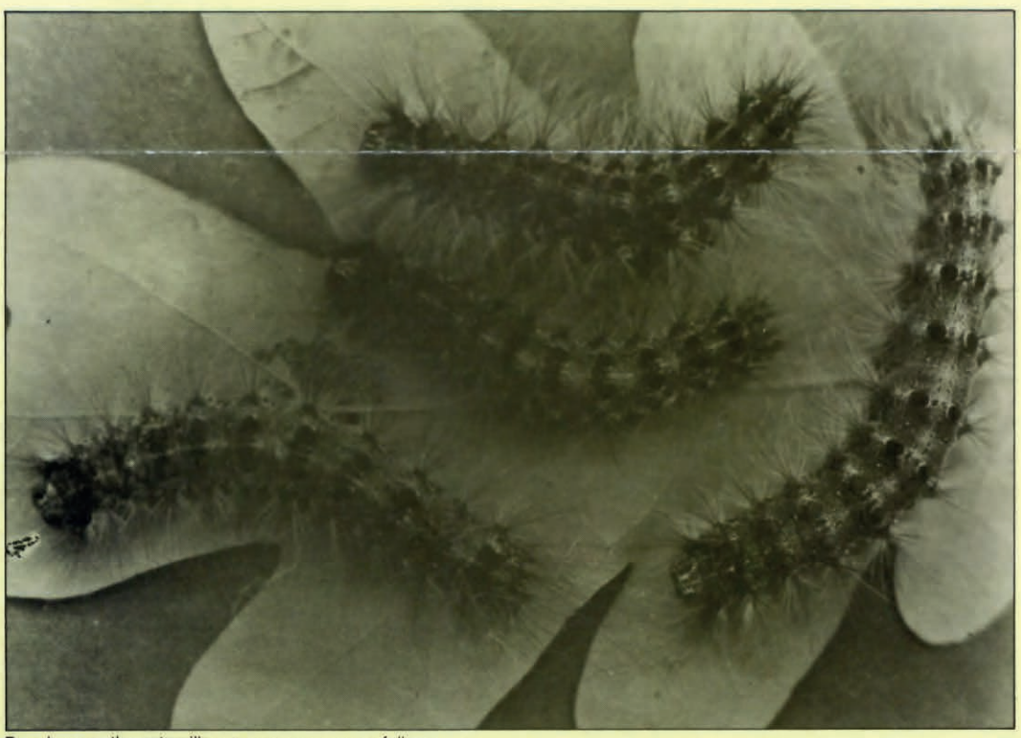
At home, locate possible hiding spots in your yard. Check lawn furniture, behind shutters, beneath sills, and in cracks of tree trunks. Douse any eggs and pupae you find in soapy water or bleach. Use gloves; some people are sensitive to the fuzz of egg masses or hairy caterpillars.

To protect special trees in your landscape, try banding. One method is to tie strong twine around the tree and tuck long strips of burlap 18 inches wide inside the string, folding half the burlap down to make a hiding place. Bands should be placed in April as a barrier to trap larvae migrating from the ground to the treetop or older caterpillars on the move. Mature caterpillars travel down the tree in daytime and creep back up for night feeding. Every day or so, collect and destroy any larvae hidden in the folds or the band will actually become a refuge for the caterpillars. Remove bands in early summer to prevent damage to the tree's growth.

In the long run, your participation as a monitor may be the best prevention measure. If you notice egg masses and leaf damage increasing in your neighborhood, notify your county or municipal authorities. Local experts will suggest how you can take part in the pest program. Your information will help to determine where control is needed.

Gypsy moths will be sharing the environment for a long time to come. In large natural parks and wilderness areas, where spraying is not practical, factors such as weather, disease, and predators will have to serve as the main controls against gypsy moths. By destroying forest cover, the gypsy moth may cause changes in some habitats for plants and animals; but eventually, the pests will eat themselves out of house and home.

For Washington area parks, however, the National Park Service will use Integrated Pest Management to preserve the region's historic landscapes and recreational values.

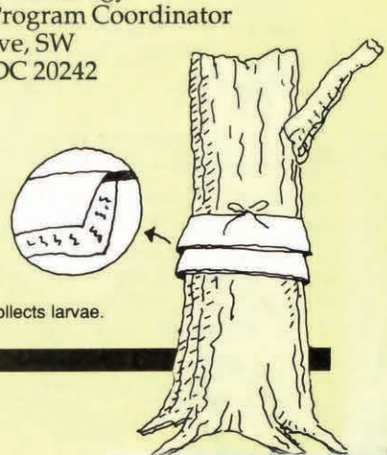


Born hungry, the caterpillars swarm over young foliage.

Information

Spraying usually occurs the last week of April or first part of May, depending on weather. For information, call or write:

National Park Service
Center for Urban Ecology
Gypsy Moth Program Coordinator
1100 Ohio Drive, SW
Washington, DC 20242
202-342-1443



Snug burlap band collects larvae.

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