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THE BROWN-TAIL MOTH

how we
fight it

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U. S. DEPARTMENT OF AGRICULTURE

THE BROWN-TAIL MOTH

how we fight it



The brown-tail moth,¹ a destructive pest of fruit and shade trees, infests sections of southern New Hampshire, southwestern Maine, and eastern Massachusetts. Control measures are necessary to keep the insect from spreading to uninfested areas and to reduce damage in places where it is established.

ORIGIN AND SPREAD

The brown-tail moth was introduced into the United States from Europe, presumably in a shipment of nursery stock. It was discovered in 1897 at Somerville, Mass.

By 1915 this insect had become widespread in most of New England east of the Connecticut River; it also infested several localities west of that river.

Since 1915 control work carried on by the States and the Federal Government has greatly reduced both the region infested and the number of moths in the infested region. Natural controls—birds, insect parasites and predators, a fungus disease, and low winter temperatures—have also helped to curb the insect.

Spread of the brown-tail moth occurs both naturally and artificially. Adult moths can fly long distances,

and they may be carried for miles by the wind. Moth forms—eggs, larvae, and pupae—may be transported on shipments of woody plants.

DAMAGE

Larvae of the brown-tail moth stunt the growth of trees by feeding on the leaves in the spring. Trees repeatedly defoliated by this insect die; some trees die after a single defoliation.

Trees most commonly infested are: Apple, pear, beach plum, oak, elm, cherry, and willow. Evergreens are not attacked.

The brown-tail moth may also cause discomfort to human beings. Larvae are covered with barbed, poison-bearing hairs. These hairs, when they come in contact with human skin, cause a rash. The rash is as irritating to some persons as poison ivy.

DEVELOPMENT

The brown-tail moth produces one generation a year. It has four life stages—egg, larval, pupal, and adult. The larval stage lasts for 9 months of the year.

In the fall, colonies of larvae build nests in trees by

webbing together clusters of leaves. A colony consists of 25 to 100 larvae. The larvae overwinter in the web nests.

In the spring, as soon as the leaf buds open, the larvae become active and crawl out of their nests to feed on the tender foliage. They may devour the leaves as fast as they appear. For a time the larvae crawl back into the web at night, but as they become larger they remain on the leaves.

By late June, larvae are full grown. At this stage larvae are dark brown; they have a broken white stripe on each side of the body and conspicuous reddish spots on the back near the posterior end. They are about 1½ inches long. They spin rough cocoons in which they change to pupae.

The pupae change to moths. At the end of the pupal period, which lasts about 2 weeks (or to about the middle of July), the moths emerge from the cocoons.

The moths have a wingspread of about 1½ inches. Wings and midsection are pure white. The abdomen (rear part of the body) is brown, and has a conspicuous tuft of brown hairs at the tip.

Soon after the females emerge they lay eggs in masses on the underside of leaves and cover them with brown hairs from their bodies. Each female lays 200 to 400 eggs.

Eggs hatch during August or early in September. The young larvae feed for a short time on the leaves before they build their winter nests. This fall feeding does little damage to the trees.

Web nest.

Web nests on apple trees.

Larvae.

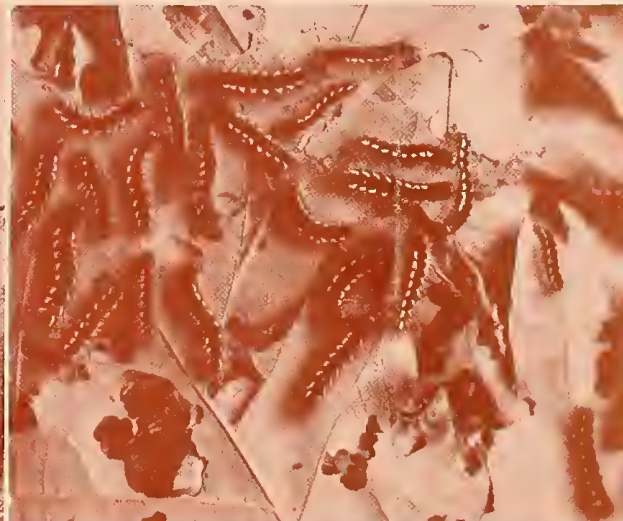
Pupae.

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Adults.



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Egg clusters.

CONTROL MEASURES

Destroying Webs

A light infestation in a small area can be controlled if all property owners in the area destroy webs found on their properties. Webs should be cut off the trees and burned, sometime between October and April.

It is not advisable to cut webs if infestation is heavy, because the cutting may leave poorly shaped trees.

Cutting down worthless apple and wild cherry trees also helps in the control of this pest.

Spraying With DDT

One thorough application of DDT spray in May or early June will control infestations of the brown-tail moth.

Spraying is usually done cooperatively. That is, it is arranged for and paid for by groups of property owners or by agencies of State and local governments.

The U. S. Department of Agriculture assists by demonstrating the effectiveness of spraying with DDT.

Spray is applied with mist blowers and hydraulic sprayers if the infested area can be reached easily with these types of equipment. A knapsack sprayer is used in treating small areas; it is also used in treating low-growing trees and shrubs. Large blocks of woodland are most effectively covered by aircraft spraying.

Spray is applied at the rate of 1 gallon per acre. Directions for obtaining or making the spray suitable for each type of equipment are given below.

MIST BLOWER . . . Purchase an emulsion spray preparation containing 12 percent of DDT (ready to use when purchased).

HYDRAULIC SPRAYER . . . Mix 1 pound of 50-percent DDT wettable powder with 100 gallons of water.

KNAPSACK SPRAYER . . . Mix 2 teaspoonfuls of 50-percent DDT wettable powder with each gallon of water.

AIRCRAFT SPRAYING EQUIPMENT . . . Same as for mist blower.

PRECAUTIONS

DDT is a poison. Handle it with care. Store it in plainly labeled containers, out of reach of children and domestic animals. Avoid continuous exposure of the skin to DDT oil solutions or emulsions.

Do not use oil sprays near fires. Prohibit smoking near mixing and storage tanks.

Quarantine

A plant quarantine is maintained by the Federal Government to prevent artificial spread of the brown-tail moth. Quarantine regulations control the shipment from the infested area of materials that may harbor moth forms. Regulated materials are leaf-shedding field and nursery plants and parts of such plants.

When a regulated article is shipped, it must be accompanied by a Federal certificate of inspection. Inspection service is available free of charge throughout the year to shippers and to others who plan to move regulated articles from the quarantine area.

For information or service, get in touch with local inspectors or with the Plant Pest Control Branch, U. S. Department of Agriculture, Box 72, Greenfield, Mass.

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