

VILLAGE VIEW

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If the gypsy moth is active where you live, you've watched with incredulous dismay the total defoliation of most of your deciduous trees this spring. When not a single leaf remains on your oaks, you've seen the voracious caterpillars attack the evergreens. The damage done, and the speed with which it's accomplished, is almost beyond belief.

In less than three weeks from the time the tiny black worms emerge from their egg-cases and spin filaments so they float to the earth, they inch their way back up the tree trunks and consume every leaf. They leave the trees as bare as they were all winter. There's no stopping them. Spray pro-

grams provide but little control. Caterpillars crawl up the walls of houses, cling to clothing hung out on the line to dry, are to be found on people, cars, and streets. They are everywhere.

Throughout the northeast, gypsy moth infestation this year is devastating square mile after square mile of forest. Along the Connecticut Thoroughway, west of the Connecticut River, as far as the eye can see, the trees are bare. The wooded hills of Rhode Island are defoliated. Between the Cape Cod Canal and Boston along Route 3, huge acreages show clear evidence of the gypsies' activities. And here on the Cape the story is no different.

In West Barnstable, Centerville, through the South Sandwich woods, only the white pines appear untouched. Although some sections of the Town of Barnstable haven't yet been invaded, it's only a matter of time before the gypsy moth spreads into those areas.

Once the caterpillars have satisfied their hunger and stripped every leaf from every tree, they pupate. Small brown cases will form around each caterpillar that reaches maturity. The cases will be attached to shingles, tree bark, twigs and branches, chimneys, and in any and every imaginable crevice.

For a few weeks it will appear the miserable critters have departed. Not so; they are doing what many kinds of caterpillars do. They are changing into moths. At completion of their metamorphosis, they will break forth from the millions of chrysalises and be ready to mate. At this stage, the female moths emit an odor that only the male moths can detect; the females are capable of short flights, but the males are the moths you will see flying everywhere.

Finally, the females lay their eggs. You'll find egg cases deposited in all sorts of places. They'll be on tree trunks, the sides of houses, under roof eaves, on the undersides of branches, underneath fenders of cars, behind window blinds. They'll be anywhere the female moths' instincts suggest the eggs will survive the storms and the rigors of winter.

The egg cases are tan, fuzzy, and contain a grainy mass of eggs; hundreds of eggs that will hatch next spring to start the cycle anew. Each egg case is about an inch wide and two inches long.

Gypsies are mobile at every active stage of their lives. The moment they hatch and begin spinning the filament, they are blown by the winds and can travel hundreds of yards from their points of origin. Once they touch ground, they creep and crawl in all directions to find a tree trunk leading to their food supply. They crawl up buildings, too, sensing there may be greenery above. When one tree is defoliated, they move to another.

In the moth stage the females fly as well as the males, though not so far. At every active stage, gypsy moths are revolting, disgusting and obnoxious to people whose environment they share. Birds shun the hairy caterpillars. There are few natural enemies, although some wasps do prey on them, using them for hosts in which to lay their eggs.

The use of DDT after WWII until it was banned by the Environmental Protection Agency because the poison was having negative effects on all animal life including human, kept the gypsy moth in check for a quarter of a century. Since use of DDT has been discontinued, the gypsy moth has made a strong comeback. Currently, less poisonous sprays than DDT, principally carbaryl and malathion, are used to control the pests. These substances are deadly to fish and birds, but have a shorter environmental life than DDT. These poisons are not considered to be as deadly as DDT.

Alternatively, there is available a biological insecticide that contains a bacterium capable of controlling leaf-eating caterpillars. It is not a chemical. It occurs naturally (although seldom in sufficient concentration to protect trees from gypsy moth destruction) in nature. In addition to killing the gypsy moth caterpillar, it kills budworms, cankerworms, tent caterpillars, bagworms and spanworms. And it also kills the caterpillars that become monarch, swallowtail and morning cloak butterflies.

Abbott Laboratories produces this bacterial insecticide under the trade name DIPEL (*Bacillus thuringiensis*, or B.t.); one bite of a treated leaf and caterpillars stop feeding. Within a few days, they die. Unlike chemical insecticides, DIPEL kills leaf-eating caterpillars and nothing else. Honeybees, fish, birds, earthworms, and people are unaffected by it; fruits and vegetables can be harvested immediately after spraying.

Because DIPEL is a bacterium that occurs in nature, it adds nothing new to the environment, does nothing to disturb the food chain, and doesn't build up in soil or result in harmful run-off into waterways. When spraying with this non-chemical insecticide, no special protective clothing is needed. While it's not recommended that people take a shower in DIPEL, as soon as the spray dries on plants, a treated area may be entered safely.

Why, then, have not the gypsy moth-infested areas of Cape Cod and other parts of the northeast been sprayed with *Bacillus thuringiensis*?

It's more expensive than the conventional pesticides that destroy honeybees, birds, fish and other desirable animal life in the process of controlling the gypsy moth caterpillar.

A pity.