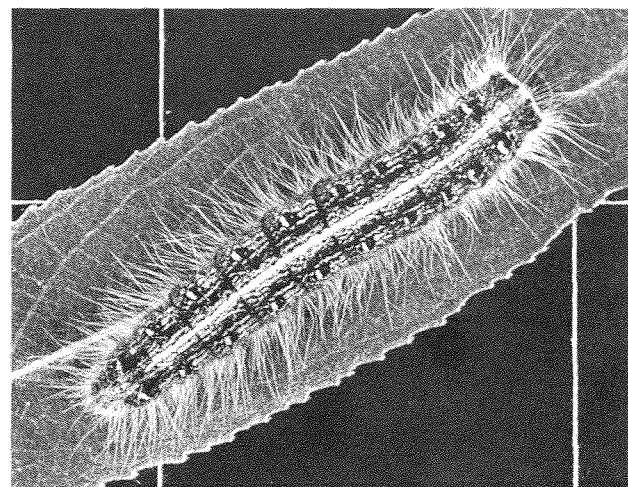




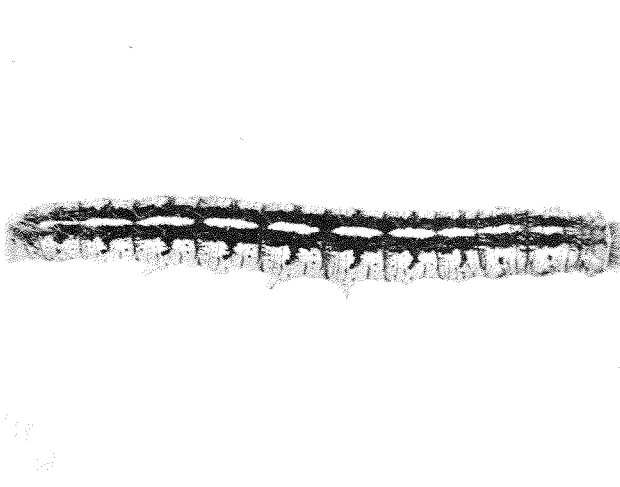
TENT CATERPILLARS



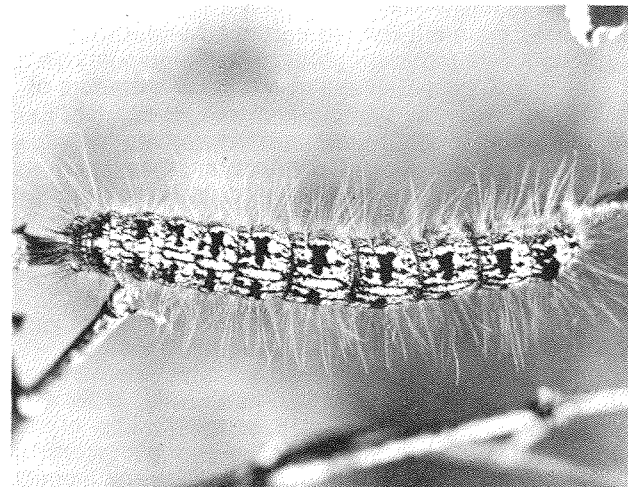
Forest tent caterpillar



Eastern tent caterpillar



Prairie tent caterpillar



Western tent caterpillar

There are four species of tent caterpillars pitching camp across Canada, but the most notorious, the forest tent caterpillar, doesn't really live in a tent. The others — the eastern, western and prairie tent

caterpillars — true to their names, spin tent-like webs for protection during the larval stage.

The forest tent caterpillar (*Malacosoma disstria*) is

by far the most prevalent and widely distributed of the four species, occurring from Nova Scotia to British Columbia. The eastern tent caterpillar (*M. americanum*) is found from Newfoundland to Central Ontario and on rare occasions through southern Manitoba and Saskatchewan. The prairie tent caterpillar (*M. californicum lutescens*) is accurately named, occurring in all three prairie provinces, while the western tent caterpillar (*M. californicum pluviale*) is found from Quebec to British Columbia, most commonly in Ontario and southern British Columbia.

Mass migration

The forest tent caterpillar is bothersome enough to be rated among Canada's top six forest enemies. It is generally more familiar to people than other destructive forest pests because of its tendency to migrate in large masses during the larval stage and to appear in massive moth flights during outbreak years. Some people remember the caterpillars because of a ruined picnic or an uncomfortable camping experience. Others have literally lost control of their cars while driving over a huge army of migrating larvae. Trains have been stalled by them, the heavy locomotives losing all traction on the slippery tracks.

Widespread outbreaks of the forest tent caterpillar occur about every 10 years, but there have been lulls as short as six years and as long as 16 years between outbreaks. When they do occur, they may last from three to six years, depending on weather conditions and other natural control factors. Outbreaks of the other species are seldom as severe or widespread.

Damage

Tent caterpillars are not too particular about their diet. The forest tent caterpillar feeds voraciously on the foliage of trembling aspen and other members of the poplar family, and on sugar maple, birch, ash, oak and many other deciduous trees and shrubs as well. In hard times when starvation threatens, a migrating population has even been known to attack conifers. The other three species also feed on a variety of hosts, but prefer the leaves of cherry, apple, gooseberry, and willow trees to those of the poplars.

Fortunately, the caterpillars seldom kill trees outright, even when they completely strip them of foliage. Trembling aspen will sometimes refoliate the same year after a severe attack, utilizing buds originally destined for the following spring's growth. Radial growth of the tree is reduced, however, and it is almost certainly weakened, making it more vulnerable to disease. Development of the tree may be affected for two years following an attack. During one four-year infestation in the prairie provinces, growth losses were calculated at nearly 4 cu. m. per hectare per year.



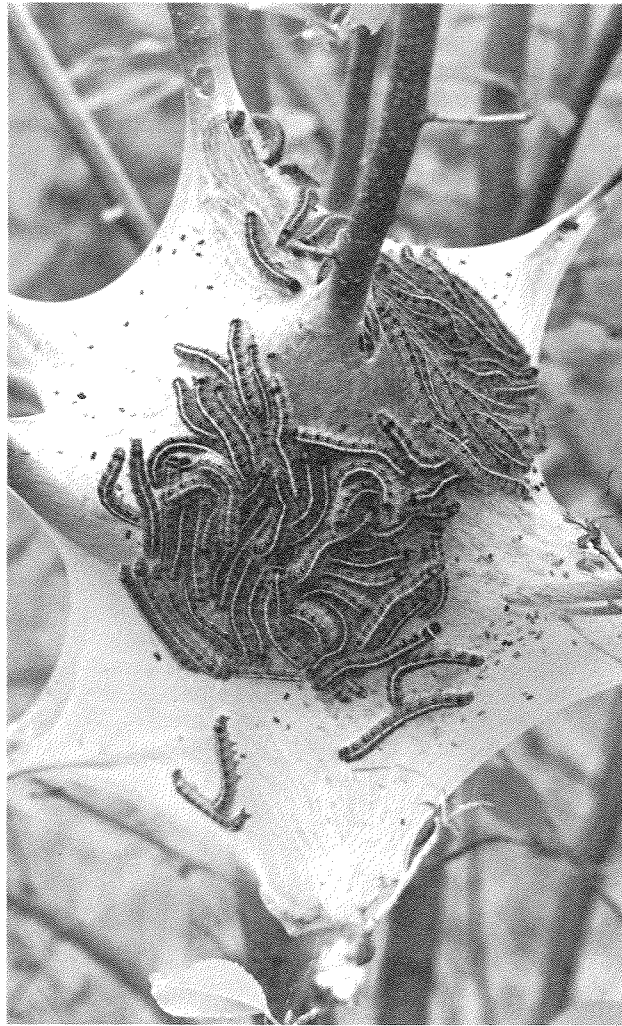
Forest tent caterpillars on stem of young poplar, showing leaf damage.

Life cycle

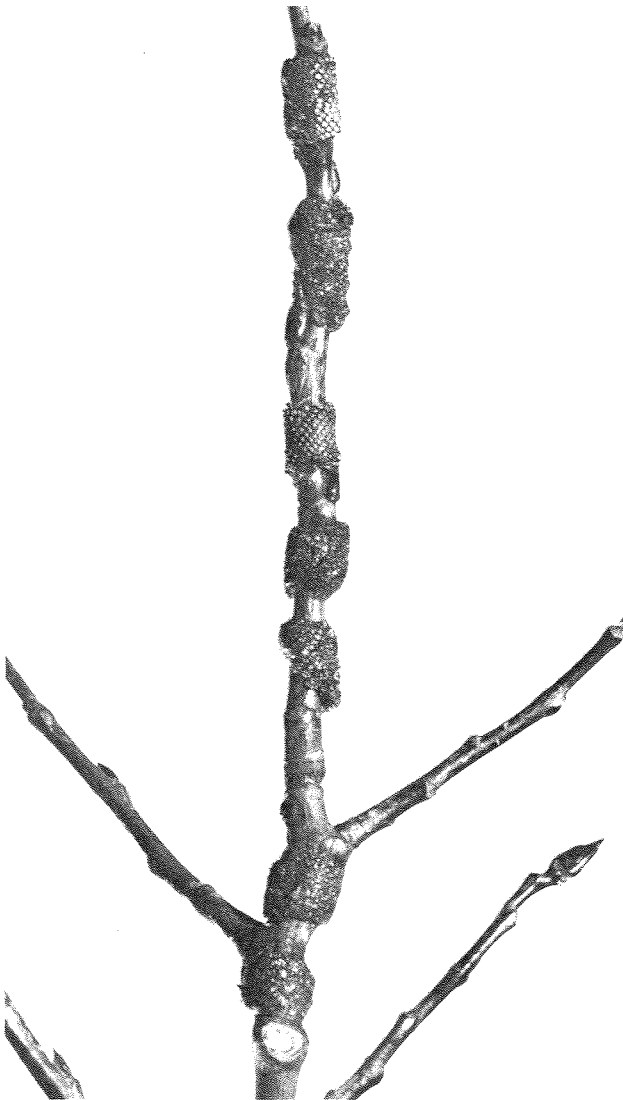
The life cycle of the tent caterpillars begins about midsummer, when the female moths encircle twigs on the host tree with bands of eggs 12–24 mm wide, covered with a dark-colored glue-like substance. The following spring, when the leaves begin to unfold, the small caterpillars emerge and begin their destructive feedings.

As they grow to their maximum length of about 5 cm (the eastern species may grow to 6.5 cm), the larvae become quite colorful. The mature larva of the forest tent caterpillar is dark brown with a broad blue band along each side. The back is black and marked by a row of white keyhole-shaped spots and very fine longitudinal orange lines. The blue color dominates when the caterpillar is viewed from the top.

The eastern tent caterpillar larva is deep black with a white stripe along the back, and with many short, irregular brownish markings along the side. The western tent caterpillar has a row of elliptical blue spots down its back and two orange spots on the upper sides of each body segment. The orange coloring is dominant. The prairie species has blue sides, a black back with a narrow white stripe down the centre, and irregular orange markings on the back as well.



Eastern tent caterpillars and "tent".



Egg masses of tent caterpillars are laid in bands adhering to twigs.

All four species feed in colonies, with three of them forming tent-like webs for protection. The forest tent caterpillar does not make a tent but clusters in masses on the stem of the host tree, living on silken mats and spinning silken paths for traveling.

Frequently, larvae migrate off the host-tree to spin their cocoons on buildings and other objects, becoming a nuisance to country dwellers.

The larvae molt four times during their four to six-week phase of life, after which they spin cocoons of several layers of silk to enter the pupal stage. Ten to 14 days later the adult moth emerges to repeat the life cycle. The moths are of varying shades of buff brown, and have a life span of about 10 days, during which they mate, with the females laying from 150 to 200 eggs in the ring-like mass already described. During their short lifespan the moths fly actively, with winds sometimes carrying them great distances.

Control

Fortunately, the caterpillars are controlled by various natural factors. Starvation often wipes out populations that have "exploded" under ideal conditions and subsequently exhausted their food supply. Also, the caterpillars are attacked by more than 40 types of parasites — some attacking the eggs, some the larvae and others the cocoons. The flesh-fly (*Sarcophaga aldrichi*) is an important control agent, depositing live maggots on the cocoons to feed on the body tissue of the pupae.

Mechanical means of control, without the use of chemicals, are often sufficient to remove tent caterpillars from single trees and small groups. Egg masses may be knocked off twigs, and twigs bearing colonies of caterpillars cut off and burned.

During the summer, tent colonies can be burned with a torch if care is taken to avoid spreading the fire or damaging tender bark areas of the tree.

Mass migrations into previously treated trees or small ornamentals can be easily prevented by means of a barrier or collar wrapped around the stem. This may consist of a narrow (5–10 cm) strip of masking tape or aluminum foil on which is smeared any one of a number of petroleum products (grease, etc.). The same principle could be used on houses, cottages, sun decks and other structures.

Insecticides such as carbaryl, malathion and methoxychlor are registered for use against tent caterpillars on forest trees, shrubs and ornamentals.

More selective, and less harmful to the environment than chemical insecticides, is the bacterial insecticide *Bacillus thuringiensis* (B.t.), registered under such names as Dipel, Thuricide and Novabac. Tests by Canadian Forestry Service researchers have shown B.t. to be highly effective at relatively low dosages.

It is important to remember that non-biological insecticides are toxic to humans and animals; care in handling is essential, and manufacturers' instructions should be followed to the letter.

Local forestry officials, either federal or provincial, should be consulted before using any control material, whether chemical or biological.

Photos: Northern Forest Research Centre
and Great Lakes Forest Research Centre

For further information

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Cette publication est disponible en français sous le
titre: La livrée.

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