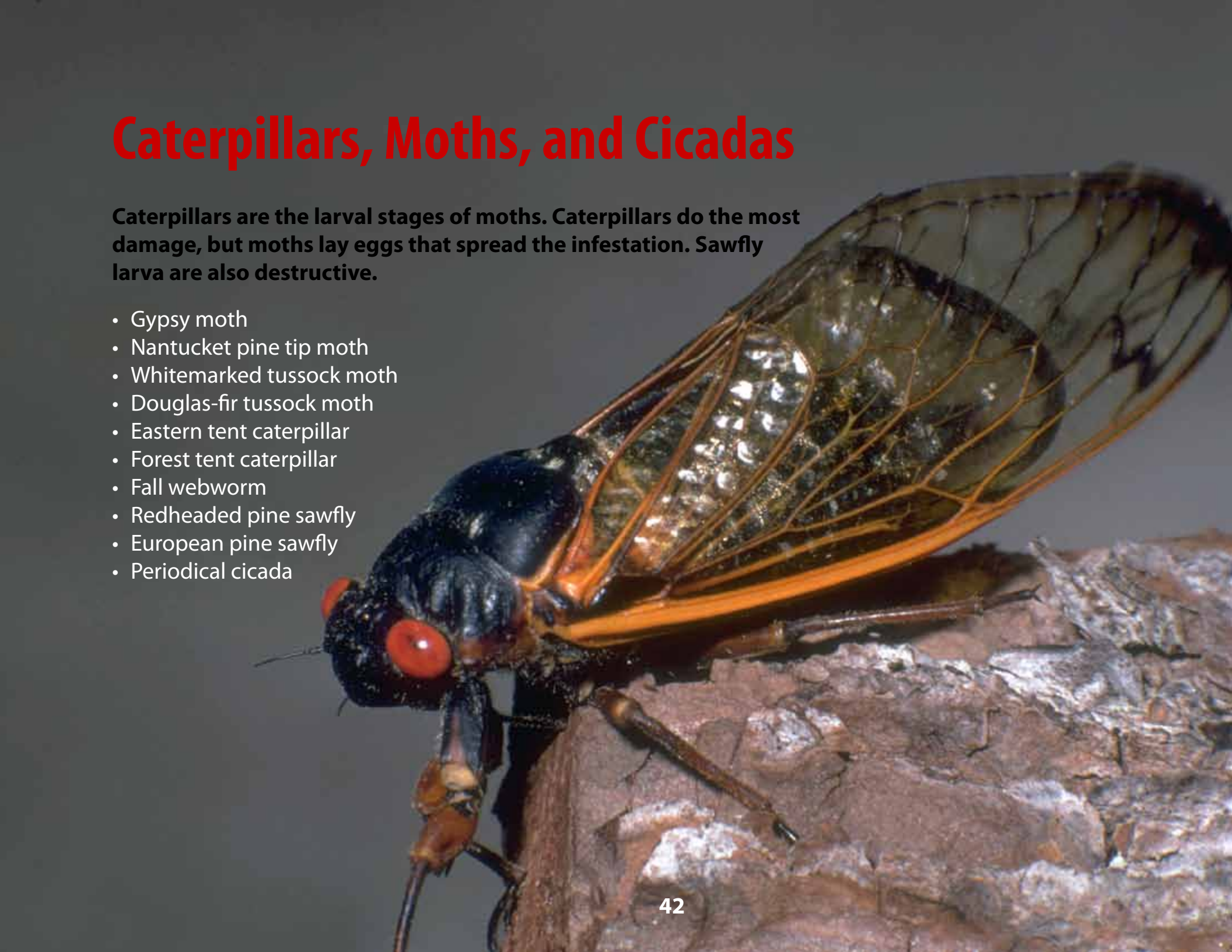
Caterpillars, Moths, and Cicadas

Caterpillars are the larval stages of moths. Caterpillars do the most damage, but moths lay eggs that spread the infestation. Sawfly larva are also destructive.

- Gypsy moth
- Nantucket pine tip moth
- Whitemarked tussock moth
- Douglas-fir tussock moth
- Eastern tent caterpillar
- Forest tent caterpillar
- Fall webworm
- Redheaded pine sawfly
- European pine sawfly
- Periodical cicada



Gypsy moth

The gypsy moth is one of the most important insect pests in the Northeast. It causes widespread defoliation, often of the entire tree. Gypsy moth larvae are sometimes confused with tent caterpillars or fall webworms because they are all "hairy", but each has distinct color patterns to help you identify them.

Older larvae are brownish-gray, with tufts of hair on each segment and a double row of five pairs of blue spots, followed by six pairs of red spots, on the back. Mature larvae are from 1½" to 2½" long. Adult male moths are dark brown, with wavy dark bands across the forewings. Female moths are white and cannot fly. Females deposit egg masses on sheltered spaces like under rocks and on tree trunks, houses, picnic tables, campers, mobile homes, and cars.

Gypsy moth larvae.

USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org.

Gypsy moth larva and damage.

USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org.

Gypsy moth, continued

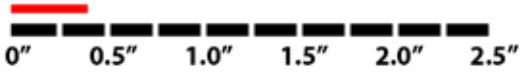
Female gypsy moth.

USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org.

A female gypsy moth with a male (look closely)!

USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org.

Nantucket pine tip moth



This bud and shoot borer occurs throughout the East and South, injuring the growing shoots of young pines. There are 2 to 5 generations per year. Early larvae feed on needles and surfaces of new growth, while later larvae move to shoot tips and begin boring into buds or stem tissues.

Young larvae are cream colored with black heads. Mature larvae are light brown to orange and about ⅖″ long. The head, body, and appendages of the moth are covered with gray scales, while the forewings are covered with patches of brick-red and copper-colored scales.

USDA Forest Service Archive, USDA Forest Service, Bugwood.org.

Pennsylvania Department of Conservation and Natural Resources—Forestry Archive, Bugwood.org.

Whitemarked tussock moth

The white marked tussock moth occasionally occurs in epidemic numbers and heavily defoliates several species of hardwood, primarily oaks. It is not considered a serious forest pest, but it causes considerable damage to shade and ornamental trees.

The larvae are 1″ to 1½″ long, with a bright red head , a yellowish body, a pair of upright pencil tufts of black hairs on the prothorax, and four white to yellowish brush-like tufts of hairs on the back toward the head. The adult male moth is gray brown, with darker wavy bands and a white spot. The female is wingless and whitish gray.

Winged male.

Andrew J. Boone, South Carolina Forestry Commission, Bugwood.org.

Whitemarked tussock moth, continued

David Cappaert, Michigan State University, Bugwood.org.

Wingless female laying her eggs.

John L. Foltz, University of Florida, Bugwood.org.

Douglas-fir tussock moth

This caterpillar is an important defoliator of true firs and Douglas-fir in western North America. The first indication of attack appears in late spring. Defoliation occurs in the tops of trees and outer branches, then in the lower crown and innermost area of branches later. By August, upper crowns may be completely bare.

The adult male moth is brown to black with feathery antennae and a wingspan of about one inch. The female is wingless but has a large abdomen. Young larvae are about ⅛″–¼″ long and at maturity can be up to 1¼″ long. They are dark brown to buff-colored with long dark tufts of hair.

A male Douglas-fir tussock moth.

David McComb, USDA Forest Service, Bugwood.org.

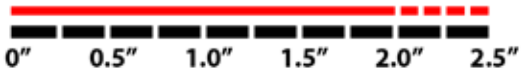
Douglas-fir tussock moth, continued

William M. Ciesla, Forest Health Management International, Bugwood.org.

Female Douglas-fir tussock moth laying eggs.

Jerald E. Dewey, USDA Forest Service, Bugwood.org.

Eastern tent caterpillar



The eastern tent caterpillar is primarily an aesthetic problem and has little effect on the host trees. Species of the genus Prunus are preferred, with black cherry being the primary host.

Full-grown larvae are between 2″ to 2½″ in length. Caterpillars have black heads, with long, light brown body hairs. The back has a light stripe, bordered on each side with yellowish-brown and black wavy lines. (Compare this solid stripe to the dots down the back of the forest tent caterpillar.) The sides are marked with blue and black spots.

Moths have a wingspread of about 2″ to 2½″ and are yellowish-brown, with two narrow, light lines across the front wings. The larvae construct a white web or tent in the crotch of a small branch. They consume the entire leaf with the exception of the midrib.

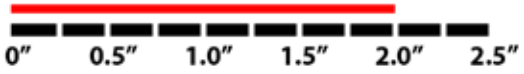
Tim Tigner, Virginia Department of Forestry, Bugwood.org.

Eastern tent caterpillar, continued

Tim Tigner, Virginia Department of Forestry, Bugwood.org.

Pennsylvania Department of Conservation and Natural Resources—Forestry Archive, Bugwood.org.

Forest tent caterpillar



The larvae have pale bluish lines along the sides of a brownish body, and a row of keyhole-shaped white spots down the middle of the back. They are sparsely covered with whitish hairs, and reach 2″ at maturity. Adult moths are buff-brown, with darker oblique bands on the wings. Unlike its cousin the eastern tent caterpillar, the forest tent caterpillar doesn't make a tent at all! Instead, the mature larvae congregate on a silk mat on the larger branches and trunk, usually close to the ground.

Egg masses of 100 to 350 eggs encircle the twigs and are covered with frothy, dark brown cement.


Scott Tunnock, USDA Forest Service, Bugwood.org.

Pennsylvania Department of Conservation and Natural Resources—Forestry Archive, Bugwood.org.

Forest tent caterpillar, continued

Cocoon.

Jerald E. Dewey, USDA Forest Service, Bugwood.org.

Egg mass.

James Solomon, USDA Forest Service, Bugwood.org.

Larvae.

Herbert A. "Joe" Pase III, Texas Forest Service, Bugwood.org.

Fall webworm

The fall webworm is not considered an important forest pest, but ugly webs can seriously detract from aesthetic values. Webs form in the tips of branches, not the crotches.

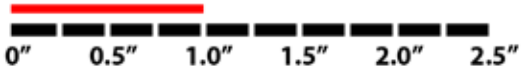
The adult moth has a wingspan of 1″ to 1¼″ and is snowy white, usually with dark spots on the wings. The larvae are 1″ to 1¼″ long and covered with silky hairs. The color varies from pale yellow to green, with a black stripe on the back and a yellow stripe on each side.

Steven Katovich, USDA Forest Service, Bugwood.org

Fall webworm, continued

Pennsylvania Department of Conservation and Natural Resources—Forestry Archive, Bugwood.org.

Redheaded pine sawfly



The redheaded pine sawfly is an important defoliator in young pine stands from SE Canada and throughout the eastern and southern U.S.

Sawflies can be distinguished from caterpillars by counting the number of prolegs they have. Caterpillars have five pairs or less, sawflies six pairs or more. The mature larva is easily identified by its bright red head. The body is about 1″ long and pale whitish yellow to bright yellow in color, with 4 to 6 rows of black spots on the body.

The adults resemble flies. They have four transparent wings and vary from ⅕″ to ⅖″ in length.

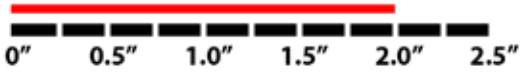
James McGraw, North Carolina State University, Bugwood.org.

Redheaded pine sawfly, continued

Lacy L. Hyche, Auburn University, Bugwood.org.

G. Keith Douce, University of Georgia, Bugwood.org.

European pine sawfly



European pine sawfly larvae have black heads and grayish-green bodies. Each has a straight, off-white stripe down the middle of the back and slightly lighter stripes on either side. Eggs appear as yellow spots running the length of one or more needles, and they may easily be overlooked.

Larvae may feed in colonies of up to 100 or more. They range from ¼″ to 2″ in length depending on their age. Look, in particular, for straw-like needle remnants which the larvae have left behind in their feeding. These may be more visible against the green background of the tree than the greenish larvae.

Louis-Michel Nageleisen, Département de la Santé des Forêts, Bugwood.org.

European pine sawfly, continued

E. Bradford Walker, Vermont Department of Forests, Parks and Recreation, Bugwood.org.

Steven Katovich, USDA Forest Service, Bugwood.org.

Periodical cicada

Cicadas damage both twigs and roots of host trees. During April and May, female cicadas insert eggs ("oviposit") into twigs through 1"–4" slits they make in the bark, and the parts of the twigs that are beyond the oviposition sites frequently die as a consequence of the damage. When the eggs hatch, the nymphs fall and enter the ground, feeding on the roots of many plants. When nymphs are full grown, they emerge from the ground, climb on some object, and molt to become adults. The adults are about 1½" long. The female is completely black on top, while the male has four to five abdominal segments that are orange-brown on top.

Each generation requires 13 to 17 years.

Pennsylvania Department of Conservation and Natural Resources—Forestry Archive, Bugwood.org.

Robert F. Bassett, USDA Forest Service, Bugwood.org.

Periodical cicada, continued

Here are a couple of photographs showing twig damage by periodical cicadas.

Close-up of oviposition site on twig.

John H. Ghent, USDA Forest Service, Bugwood.org.

Ovipositioning slits on stem.

John H. Ghent, USDA Forest Service, Bugwood.org.