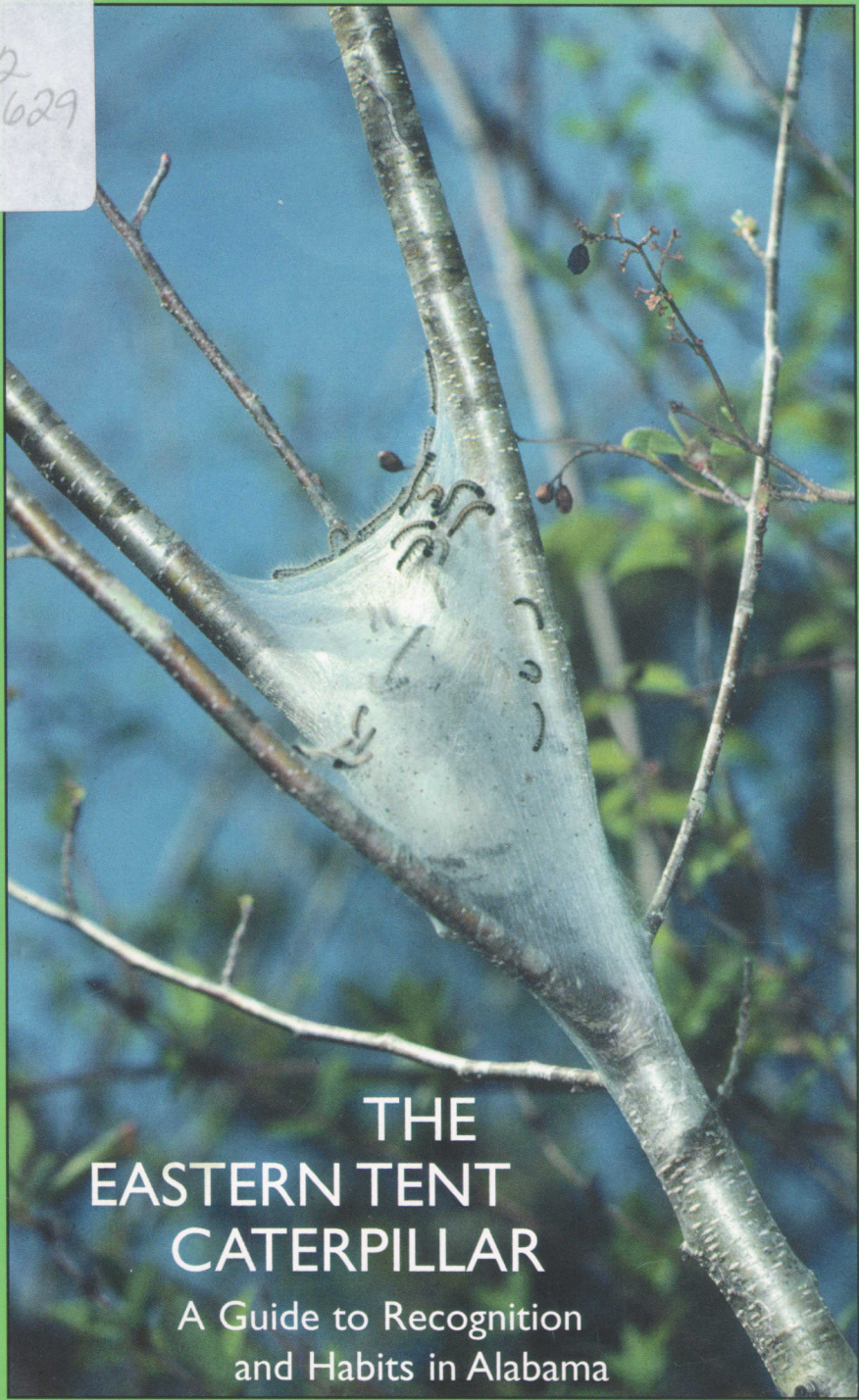


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# THE EASTERN TENT CATERPILLAR

A Guide to Recognition  
and Habits in Alabama



## CONTENTS

Introduction _____	3
Description _____	4
Hosts, Damage, and Importance _____	5
Seasonal Cycle and Life Habits _____	9
Summary _____	10
Selected References _____	12

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*Information contained herein is available to all persons  
regardless of race, color, sex, or national origin.*

# THE EASTERN TENT CATERPILLAR

## A Guide to Recognition and Habits in Alabama

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### **INTRODUCTION**

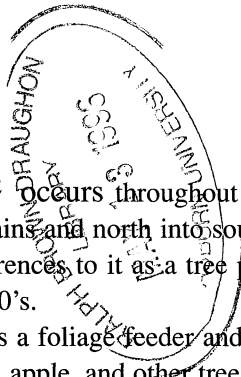
THE EASTERN TENT CATERPILLAR<sup>2</sup> occurs throughout the eastern United States west to the Rocky Mountains and north into southern Canada. It is native to the region, and references to it as a tree pest date back to early colonial times of the mid-1600's.

The caterpillar is active in the spring. It is a foliage feeder and, as the name implies, a web- or tent-maker. Cherry, apple, and other trees of the rose family (Rosaceae) are the preferred hosts, but larvae have been reported to feed on a variety of hardwoods, including ash, birch, blackgum, oak, sweetgum, maple, and poplar. The grayish-white silken tents seen in forks of trunk and limb or at junctures of large branches in the crowns of preferred hosts (cover photo) are constructed by the larvae. The insect's basic life cycle and host preferences remain essentially the same throughout the range, but the time that caterpillars are active during the spring season varies considerably. For example, caterpillar development may be complete in Alabama by the time activity begins in Canada.

The eastern tent caterpillar is common and often abundant in Alabama. It is among the first insects to break winter dormancy and

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<sup>2</sup> *Malacosoma americanum* (F.). Order Lepidoptera, Family Lasiocampidae.



become active in the spring. The typical webs (cover photo) are oftentimes familiar sights throughout the countryside during March and April. Data on this common tent-maker and its activities have been accumulated at the Alabama Agricultural Experiment Station at Auburn over several years. The following is a description of the insect, and its general habits and seasonal cycle as commonly occurring in Alabama.

## **DESCRIPTION**

**ADULTS** (Photo 1) - Moths are chocolate brown to tan-brown. Forewings are crossed by a pair of white or yellowish-white lines. On some moths, the color of the narrow area between these lines may be lighter than that of the rest of the wing. Hindwings are chocolate brown. Wingspan is 30-50 mm; (one inch = 25.4 mm) females are generally larger than males.

**EGGS/EGG MASSES** (Photo 2) - Individual eggs are cylindrical, about one millimeter long with a diameter of about one-half the length. They are placed upright in rows on host twigs, and form band-like masses that nearly encircle the twigs - occasionally, rows of eggs may overlap so that masses completely encircle twigs. Egg mass and twig are covered with spumaline, a frothy substance secreted by the female; the covering is shiny and gives the mass a varnished appearance.

Twenty-five egg masses on black cherry in Lee and Macon counties were collected and examined. The average length of masses was 15 mm, range 12-17 mm; average diameter at the thickest point was 8 mm, range 7-9.5 mm; and, the average diameter of twigs at the base of egg masses was 3.1 mm, range 2-4 mm. The average number of eggs per mass (determined for 40 masses) was 293, range 200-424.

Typical eastern tent caterpillar egg masses are easy to recognize and usually unmistakable on most hosts. However, on black cherry, a fungal disease (black knot) causes irregular black swellings on branches and twigs (Photo 3). When small and on small twigs (Photo 3, inset), these swellings, or knots, may sometimes be mistaken for egg masses.

**LARVAE** (Photos 4, 8, 10) - The full-grown caterpillar is 50- 55 mm long. The head is black and the body is lightly clothed with fine tan to light brown hairs. There is a light stripe down the midline of the back bordered on each side by reddish-brown lines. The upper area of the side of the body is mostly black, and has a row of blue vertical bars or spots bordered below by tan lines; the lower area of the side is bluish.

COCOONS and PUPAE (Photo 5) - Silken cocoons are thin, white, 22-25 mm long, and usually contain fine yellow or yellowish-white powder inside. Pupae are dark brown, and 18-22 mm long.

### **HOSTS, DAMAGE, AND IMPORTANCE**

The true hosts of the eastern tent caterpillar in Alabama are: cherries, plum, and peach (*Prunus*); apple and crabapple (*Malus*); hawthorns (*Crataegus*); and, sometimes, pear (*Pyrus*). These are the trees on which eggs are laid and webs are formed. Among these, wild (black) cherry, *P. serotina*, is favored. However, larvae can and sometimes do feed and develop on foliage of other deciduous trees; when foliage of preferred hosts is depleted before larval development is complete, caterpillars move to other broadleaf trees.

The caterpillars are aggressive feeders, and frequently completely strip host trees of foliage. Healthy trees usually refoliate and survive, but loss of foliage retards radial growth and may cause dieback in crowns. In the natural hardwood forests of Alabama, preferred host trees are usually small and scattered, and are not generally valued for timber. Consequently, the eastern tent caterpillar does not generally cause economic losses of timber, and control in natural stands is not usually necessary. However, conspicuous webs and leafless crowns resulting from infestations make unattractive scenery in an otherwise greening spring countryside.

While not a threat to timber production in the natural forest, the caterpillar often becomes a serious pest in wooded urban, suburban, and recreational areas. Here, infestations drastically reduce the environmental and ornamental values of shade trees and the wooded landscape. In the spring, when infestations are heavy and caterpillars numerous, larvae themselves become a public nuisance as, by natural habit, they crawl about in search of pupation sites or alternate food sources. In urban and recreational areas, control of the caterpillar may sometimes be desirable. For control recommendations, contact your County Extension Office.

Apple is one of the favored host trees, and in earlier years, the caterpillar was sometimes a serious pest in orchards. In commercial orchards of today, regular pest management programs have reduced the caterpillar to minor- or no-pest status.



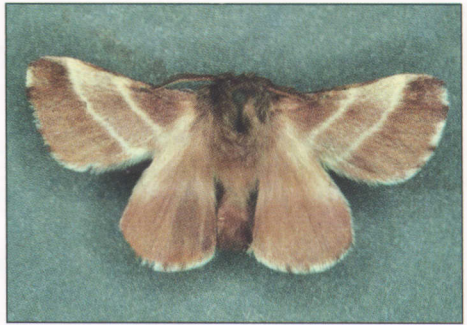


Photo 1 - Eastern tent caterpillar adults (Female, left).

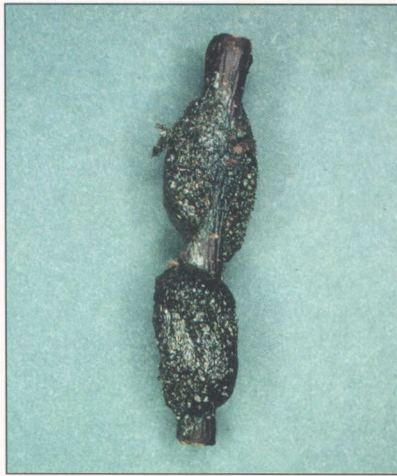


Photo 2 - Egg masses on black cherry twigs. Left, lower mass with spumaline covering, upper mass with portion of spumaline removed to show typical partial encirclement of twig; right, mass showing overlap of egg rows - an occasional occurrence on smaller twigs.

Photo 3 - Black knot, a fungus disease of black cherry. Small knots of beginning infections (inset) may sometimes be mistaken for eastern tent caterpillar egg masses.

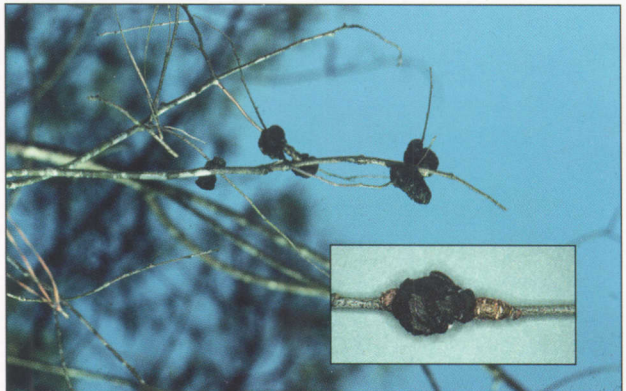




Photo 4 -Full-grown eastern tent caterpillars.

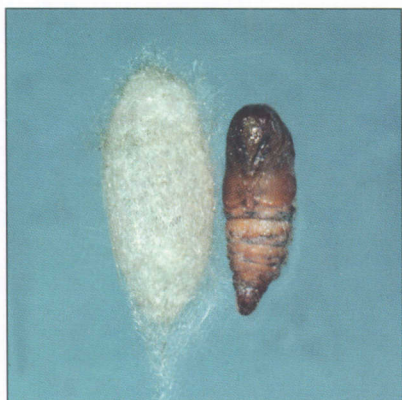


Photo 5 -Cocoon and pupa of the eastern tent caterpillar.



Photo 6 -Newly hatched larvae feeding on the spumaline covering of the egg mass (top), and unopened leafbud of black cherry (bottom).



Photo 7 -Early tent construction by young larvae (date, March 5); this web is about the size of a tennis ball.





Photo 8 -Late-stage caterpillars resting in the tent.



Photo 9 -Typical tents at the end of the larval developmental period. Tents contain old molted caterpillar skins and frass.



Photo 10 - Full-grown caterpillars that have left host trees in search of pupation sites. Upper, feeding on oak leaf; lower, resting on pine (caterpillars are not known to use pine needles for food).



Photo 11 - Caterpillar in the process of constructing a cocoon in which to pupate. The prepupal caterpillar can be seen inside the cocoon being formed.



Photo 12 - Typical new eastern tent caterpillar egg mass. This mass was deposited during the last week of May.



## SEASONAL CYCLE AND LIFE HABITS

Seasonal activities and development of the eastern tent caterpillar are outlined in the figure (see page 11). Dates of onset and ending of events and duration of periods of activity vary somewhat by location and often from year to year at any location. Activity and development periods shown in the graph are based on records and observations made over the years in areas of east-central Alabama, primarily Lee and Macon counties. These events may occur a little earlier southward and later northward.

The insect spends the winter as dormant, first-stage caterpillars in unhatched eggs laid the previous spring. Onset of hatch varies by year but generally occurs sometime during the last half of February to mid-March, and corresponds to the swelling of leafbuds and start of development of foliage. Dates of first hatch recorded for ten years on black cherry in Lee and Macon counties (earliest to latest) are shown in the table. The earliest hatch observed was February 16, 1989; the latest March 13, 1978. However, in each of seven of the ten years, larval emergence occurred during the last week of February or first two days of March.

Newly hatched caterpillars are black with several narrow white lines across the back (Photo 6). They feed first on the spumaline covering on the egg mass then move, leaving fine strands of silk as they go, to feed on new foliage or leafbuds (Photo 6). The caterpillars feed and develop in colonies, and shortly after hatching, begin construction of tents in crotches of trunk and limb or junctures of larger branches (Photo 7). Tents are enlarged as caterpillars grow. This type of tent is characteristic of the eastern tent caterpillar, and distinguishes it from some other common web-makers, for example, fall webworm and poplar tentmaker, which construct webs in or around tree foliage. Eastern tent caterpillars feed during the day, and remain in tents at night, during bad weather, and when resting

**Table 1. Dates of First Hatch of Eastern Tent Caterpillar Recorded for Ten Years in Lee and Macon Counties**

Date Hatch Began	Year
Feb. 16	1989
Feb. 20	1990
Feb. 23	1984
Feb. 25	1980
Feb. 27	1992
Mar. 1	1971
Mar. 2	1977, 1979, 1987
Mar. 13	1978

(Photo 8). Molting takes place in the tents (Photo 9). Larval development lasts 5-7 weeks (usually about six), depending on weather conditions, and in the Lee/Macon Co. area, usually occurs somewhere within a 10-week period from mid-February through April, see the figure.

Full-grown caterpillars leave tents and foliage of host trees and scatter in search of suitable sites to spin cocoons and pupate. During this period, caterpillars are often found resting, and sometimes feeding, on a variety of plants in the vicinity (Photo 10).

Larvae spin silken cocoons (Photo 11) and pupate inside. Cocoons and pupae are usually found in protected places such as under logs, rocks, debris on the ground, in crevices of bark of trees, and sometimes under the eaves and in cracks of buildings. Cocoons commonly contain fine yellow or yellowish-white powder. This powder is reported to possibly cause itching or a similar reaction among individuals with sensitive skin.

The pupal stage lasts 3-4 weeks, with the pupal period usually occurring within a time from early to mid-April into the last half of May. Time of moth emergence and activity varies from year to year, but generally occurs within the period from early May to the first of June, see the figure. This is the oviposition period, with eggs being laid on twigs of host trees (Photo 12) as previously described. Embryos develop to fully formed first-stage larvae within about three weeks. Larvae enter diapause (a state of arrested development) and remain dormant inside egg shells until the following spring. There is only one generation each year.

## **SUMMARY**

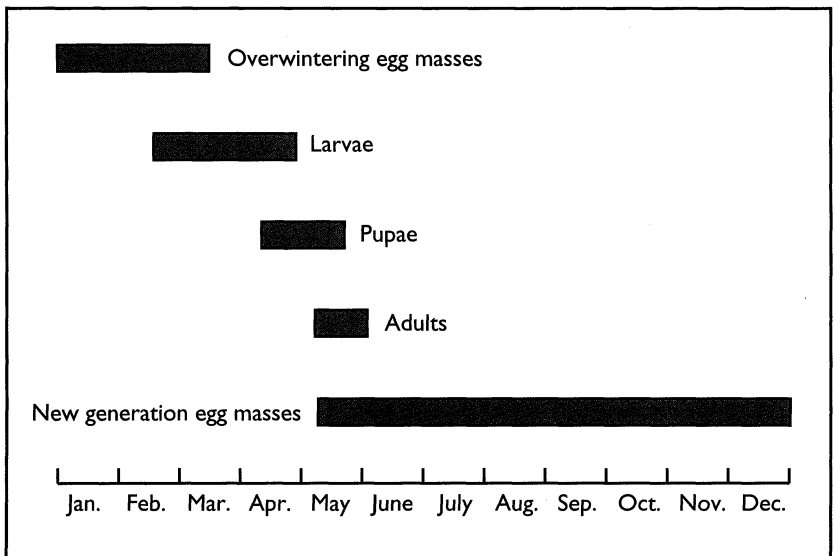
The eastern tent caterpillar is common throughout Alabama. It is a leaf feeder, and its hosts are wild cherry, apple, crabapple, plum, hawthorn, peach, and sometimes pear. These are the trees on which eggs are laid and webs are constructed. However, if preferred foliage becomes scarce, larvae will feed and complete development on leaves of a variety of broadleaf trees and shrubs.

The caterpillar is active in spring with the specific time varying by location (early in the South and later northward) and from year to year at the same location, depending largely on weather conditions. In east-central Alabama, moths are active for a short time, generally sometime during the last three weeks of May. Females lay eggs in band-like masses on small twigs. Embryos develop to first-stage larvae within about three weeks. Larvae enter diapause and remain dormant within egg shells through summer, fall, and most of winter.

Hatch usually occurs during late February and early March, corresponding to time of start of leaf development. Caterpillars construct webs and feed for about six weeks, with larval development being over in most years by the end of April. Pupation occurs in silken cocoons during the period mid-April to mid-May. Adults emerge within about three weeks to begin a new cycle. There is only one brood each year.

Infestations occur throughout the countryside, but the caterpillar is most serious as a pest in urban, suburban, and wooded outdoor recreational areas. Here, unsightly webs and leafless crowns severely reduce the aesthetic and environmental values of shade, ornamental, and other landscape trees, and caterpillars, simply by their presence, often become a nuisance.

Control of the eastern tent caterpillar is not usually necessary, but may sometimes be desirable in urban, suburban, or recreational areas. If needed, recommendations for control can be obtained from the County Extension Office.



**General seasonal cycle of the eastern tent caterpillar in Alabama. Based on multi-year records taken primarily in Lee and Macon counties in the east-central area of the state. Dates of onset and end of periods of development and activity vary from year to year. Life-stage bars span that period from dates of earliest beginning to latest ending observed among the several years. Duration of each stage is shorter, but will generally fall within the indicated time span in any year.**



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