



Entomological Notes

Department of Entomology

TULIPTREE SCALE

Toumeyella liriodendri (Gmelin)

The tuliptree scale is one of the largest soft scale insects in the United States. It is often misidentified as the magnolia scale that is larger and has a similar life cycle, but only attacks magnolias. The tuliptree scale is a key pest of yellow poplar or tuliptree, magnolia, and occasionally linden. This soft scale insect is so prolific that it quite often covers twigs and branches.

DESCRIPTION

Mature females grow as large as 6-7 mm in diameter. They are oval, convex, and have a distinct flange around the margin of its protective waxy cover. The waxy cover of a mature female varies from light grayish green to pinkish orange mottled with black (Fig. 1). The body fluid of a live female is also pinkish orange. Adult males are small and only have one pair of wings. Adult males may look like tiny wasp parasitoids as they crawl across the surfaces of an infested plant. The crawler stage of this insect is dark red and about 0.5 mm long.

LIFE HISTORY

This pest overwinters as second instar nymphs. It resumes feeding in early spring. Males mature in June. Males emerge from the waxy scale covering as small, two winged individuals. They mate with females, and then die. In August mature females give birth to first instar nymphs called crawlers. Each female may produce as many as 3,000 crawlers over several weeks. Crawlers are capable of moving around in a tree. They may be spread to new host trees by wind or on the plumage of songbirds. If a suitable host is not found in three days, crawlers usually die. Once crawlers find a favorable site, they insert their piercing-sucking mouthparts into the vascular system beneath the bark and begin to feed. Crawlers feed for a short time before molting into the overwintering second nymphal instar stage. There is one generation produced each year in Pennsylvania.

DAMAGE

Large numbers of these soft scales may give an infested twig a warty appearance. One of the first indications of an infestation of this pest is the abundance of honeydew (sticky, sugar-rich material) secreted by developing soft scales during the growing

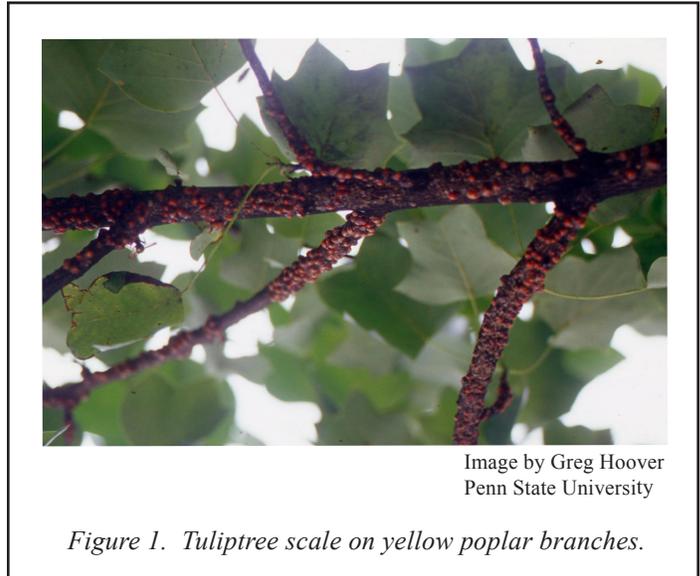


Image by Greg Hoover
Penn State University

Figure 1. Tuliptree scale on yellow poplar branches.

season. Ant and wasp populations that seek the honeydew are often found in association with this soft scale insect. These ants may need to be managed since they protect this scale insect from predators and parasitoids. The honeydew is a substrate on which black sooty mold grows. The sooty mold may turn the leaves, twigs, and other surfaces beneath an infestation black. Feeding by this pest may weaken young trees by removing plant fluid. In some instances this species may be so prolific that it covers all of the twigs and branches. This could result in a rapid decline of an infested tree.

MANAGEMENT

There are several natural enemies that attack this pest. One predator of this soft scale is the larval stage of the pyralid moth, *Laetilia coccidivora*. However, these predators and parasitoids are seldom capable of effectively managing an infestation.

Overwintering second instar nymphs may be managed with a dormant rate application of horticultural oil made according to label directions in early spring before new growth occurs and after the danger of freezing temperatures has passed. Apply registered insecticides according to label directions against the crawler stage from mid-August through mid-September. Repeat applications may be needed. Soil injection or drenching with a registered systemic insecticide labeled for management of this pest may also be applied according to label directions. Early spring application

of these registered formulations usually works best against this species when sufficient soil moisture exists. Prior to applying one of these systemic products, applicators may need to irrigate around an infested plant to provide adequate soil moisture.

WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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