

Tuliptree Scale

By The Bartlett Lab Staff
Directed by Kelby Fite, PhD

The tuliptree scale, *Toumeyella liriiodendri* (Gmelin), is an insect in the family of *Coccidae*, the soft scales. This species is a serious pest of tuliptree or yellow poplar (*Liriodendron tulipifera*) and saucer magnolia. Other magnolias are occasional hosts as well as basswood, banana shrub, Cape jasmine, loblolly bay, buttonbush, red bay, persimmon, and walnuts. In the United States, tuliptree scale is found east of the Mississippi River Valley and in California.

Damage

Tuliptree scale is so prolific that it may completely cover a tree's twigs and branches resulting in foliage yellowing, premature leaf drop, and branch dieback. The scales feed by inserting their tube-like, sucking mouthparts into the bark. Compounds toxic to the tree may be injected under the bark as part of this process. This pest can be extremely damaging and may kill small trees. During the summer months the scales excrete large amounts of "honeydew." A sooty mold grows in this substance covering leaves, branches, and automobiles with a dull, black stain.

Life Cycle and Description

Tuliptree scale normally has one generation per year. In the north, overwintering occurs on the bark as flat, inconspicuous, second instar males and females. In the southern region of its range, all stages of development have been found during the winter. The males pupate and emerge as small, two-winged adults during late spring and early summer. After the females have mated, they continue to feed and develop during the summer becoming one of the largest of the soft scale insects. A mature female is 6-12 mm (1/4-1/2 inch) in diameter and hemispherical in shape. Color ranges from grayish green through dark brown to black, although chestnut brown is the most

common color (Figure 1). Eggs develop within the body of the female and the young crawlers (the next generation) are born alive in late August and September.

Crawlers are about 1mm (1/32 inch) long, black, and move actively. This is the dispersal stage when they may be carried by the wind or birds to new areas. Crawlers tend to attach themselves to twigs and

Figure 1: Settled female tuliptree scales



branches less than four years old. Once their mouthparts are inserted into plant tissue, the legs degenerate and the scale can no longer move. After feeding during the fall, the small scales are ready to overwinter.

Control

There are many natural enemies of tuliptree scale, but trees may often be damaged or weakened before biotic factors control outbreaks. Pathogenic fungi, lady beetles, wasp parasites, and a fly contribute to biological control. There is also a predatory caterpillar which consumes the scales. In landscape settings, management strategies often involve product applications. There are many options available from systemic products applied to the soil to organic and naturally-derived products. Careful consideration must be given to product selection and timing. Please consult your Bartlett Arborist Representative for the latest treatment control options.



Founded in 1926, The Bartlett Tree Research Laboratories is the research wing of Bartlett Tree Experts. Scientists here develop guidelines for all of the Company's services. The Lab also houses a state-of-the-art plant diagnostic clinic and provides vital technical support to Bartlett arborists and field staff for the benefit of our clients.