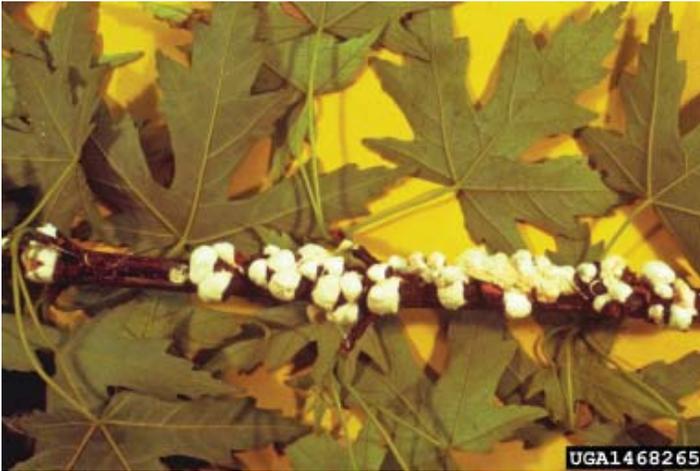


Cottony Maple Scale



Female cottony maple scale on maple branch. Photo by USDA Forest Service - Ogden Archives, USDA Forest Service, www.forestryimages.org

Female cottony maple scale on maple branch. Photo by USDA Forest Service - Ogden Archives, USDA Forest Service, www.forestryimages.org

Eventually the eggs hatch to crawlers in late June through July. The crawlers move to the underside of the leaves where they feed by sucking plant sap along the midrib or the veins. They spend the remainder of the summer feeding on the leaves, then late in the summer, tiny winged males mature and mate with immature females. Before the leaves fall from the tree, the females return to the twigs where they overwinter as second instar nymphs. There is only one generation each year.

This species can be found on almost every maple species (*Acer* spp.), including boxelder (*A. negundo*), with a strong preference for silver maple (*A. saccharinum*). In addition to maple trees, cottony maple scale may occur on alder (*Alnus*), apple (*Malus*), basswood or linden (*Tilia*), beech (*Fagus*), birch (*Betula*), dogwood (*Cornus*), elm (*Ulmus*), hackberry (*Celtis*), hawthorn (*Crataegus*), honeylocust (*Gleditsia triacanthos*), oak (*Quercus*) and willow (*Salix*) and many other species.

Cottony maple scale is often just a conspicuous nuisance that causes little impact on established trees and shrubs. However, if scale populations are heavy, they can cause some dieback of twigs and branches and sometimes premature leaf drop. Heavy infestations can cause leaves to turn yellow to light green and may cause stunted leaves. Young or stressed trees may die from severe infestations, but this is quite unusual. In addition to the direct damage, sticky honeydew produced by feeding scales promotes the development of sooty mold fungi which results in a blackened appearance of the leaves and is a nuisance when it falls on vehicles, lawn furniture, or other objects beneath infested trees.

In mid-summer white cottony blobs resembling popped popcorn kernels sometimes appear on the undersides of twigs and branches of maple, boxelder and other trees. These are most easily recognized part of the life cycle of the cottony maple scale (*Pulvinaria innumerabilis*), one of the largest and most conspicuous soft scale insects that attack ornamental plants. They are often overlooked except when they occur in large numbers, when severely infested trees look like they are covered with a string of popcorn.

This insect is a small, flattened brown scale about 1/8" long. In early summer mature females begin to secrete white, waxy, cottony-appearing egg sac in which they lay as many as 1,500 eggs. Eventu-



Scales and cottony egg sacs. Photo by Darren Blackford, USDA Forest Service, www.forestryimages.org

The related cottony maple leaf scale (*P. acericola*) also produces white egg masses, but these are found only on the leaves, not the twigs and branches. The immatures feed on the leaves before migrating to the trunk to overwinter on the bark. It is generally not very abundant. It also occurs on maple trees, but the rest of its host range is different than that of cottony maple scale.



Cottony maple scale females and eggs sacs on branch. Photo by Southern Forest Insect Work Conference Archives, Southern Forest Insect Work Conference, www.forestryimages.org

Outbreaks generally build up over a period of years, then decline from the action of natural enemies and/or adverse weather. There are many wasp and fly parasites, and predators such as lady beetles, which attack immature scales on the leaves and help regulate populations.

If control is necessary, such as on stressed or newly established trees, apply an insecticide treatment for the crawler stage (but this may also kill beneficial insects feeding on the scales). This is typically in July when *Hydrangea arborescens* is starting to bloom. You can monitor for the presence of crawlers to precisely time your application by wrapping several branches of infested plants with black electrical tape, sticky side outward.

The crawlers will stick to the tape and you can determine exactly when they are moving about. Replace the tape when no longer sticky. Heavily infested branches can be pruned out if this will not disfigure the tree. A dormant oil spray may be applied to the branches to reduce the population of overwintering females in early spring before new growth starts. The scales could also be scraped off the branches and twigs of small trees during the winter.

– Susan Mahr, University of Wisconsin

Additional Information:

- Cottony Maple Scale – a Morton Arboretum pest sheet at www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/cottony-maple-scale
- Cottony Maple Scale and Its Management – Ohio State University Extension Fact Sheet HYG-2019-95 at ohioline.osu.edu/ent-fact/pdf/ENT_62_15.pdf