RESEARCH LABORATORY TECHNICAL REPORT

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Sycamore Borer

Drew Zwart, PhD, Plant Physiologist

The sycamore borer, which commonly attacks species of oak, sycamore, and *Ceanothus* (California lilac), is found throughout California and southwestern states. While damage to the overall health of trees is considered minimal, heavy attack can lead to unsightly bark damage and secondary issues such as bacterial infection and oozing.

Description

Sycamore borer, *Synanthedon resplendens*, is classified as a clearwing moth. This group includes many species that are pests of trees and shrubs. Adult clearwing moths are distinctive from other members of the moth and butterfly family because their appearance mimics wasps and bees (Figure 1), an adaptation thought to help avoid predation. Adults lay eggs on the bark of host trees, and the larvae bore into the bark creating galleries (tunnels) as they feed. The galleries of sycamore borer are most often limited to bark tissue, and have minimal impact on vascular tissue.

Figure 1: Adult male (L) and female (R) sycamore borers
Photo credit: Jack Kelly Clark, UC Statewide IPM Project

Hosts and Symptoms

The common name, "sycamore borer," refers to the primary host, California sycamore (*Platanus racemosa*), but coast live oak (*Quercus agrifolia*) is similarly attacked. Older trees are frequently targeted. While oak and sycamore can tolerate heavy bark tunneling with minimal harm to tree physiology, the insect damage does reduce the aesthetic value of the tree [1].

Symptoms of attack include thickening and cracking of bark on the trunk and large lower branches (Figure 2), leading to bark shedding in some cases. Closer inspection reveals holes the size of a pencil eraser where adults have emerged and coarse frass (insect excrement and wood dust) around the base of trees

Figure 2: California sycamore trunk with rough and thickened bark due to clearwing moth borer activity
Photo credit: Richard McLeod

and in bark cracks and crevices. Larval feeding on bark tissue stimulates cork cambium (bark-producing cells) to produce thicker bark, which provides more habitat for the larvae to tunnel and feed (Figure 3). Brown or black liquid ooze, caused by bacteria that has entered the tree through insect galleries, is often associated with sycamore borer galleries. In Northern California, this innocuous ooze is often confused with symptoms of Sudden Oak Death.

Figure 3: Sycamore borer galleries in live oak. Note that the damage is limited to bark tissue

Management

Limited research has been conducted on management of this pest; however, other clearwing moth species with greater impact on agriculture are well studied. Bark treatments can be applied as a barrier against new infestations when applied to the lower stem and large branches. Systemic materials are not effective whether applied preventatively or therapeutically [1]. Biological control using nematodes is not effective against this specific pest [2]. Pheromones used to disrupt mating have been successful in managing other clearwing moths but have not been developed or tested for this species. Ask your Bartlett Arborist Representative for more details about management options.

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References

[1] J.F. Karlik et al., "Clearwing Moths: Integrated Pest Management for Home Gardeners and Landscape Professionals", UC Cooperative Extension Service, Pest Notes #7477, 2013. Accessed on April 29, 2020 [Online]. Available: http://ipm.ucanr.edu/PDF/PESTNOTES/pnclearwingmoths.pdf

[2] H. Kaya and L. Brown, "Field Application of Entomogenous Nematodes for Control of Clear-Wing Moth Borers in Alder and Sycamore Trees", *Journal of Arboriculture*, vol. 12, no. 6, pp. 150-154, 1986.