



## Twolined chestnut borer

*Agrilus bilineatus*

Order Coleoptera, Family Buprestidae;  
metallic woodboring beetles, flatheaded borer  
Native pest

**Host plants:** Chestnut, black, burr, red, scarlet, and white oaks

**Description:** Adult beetles are 6–12 mm long, greenish-black with fine golden yellow hairs and prominent yellow stripes on each wing cover. Larvae are approximately 25 mm long, slender, legless and cream-colored.

**Life history:** Adults begin to emerge in early June from characteristic D-shaped exit holes in the bark. Eggs are deposited in late June and early July. Larvae consume phloem and scar the xylem, while excavating mines in the trunk and larger branches. Feeding begins in the tops of trees and working down. Adults may be present into September, feeding on foliage of hardwood trees. There is one generation a year, but some larvae may require two years to complete their life cycle.

**Overwintering:** Pupal cells in outer sapwood or bark.

**Damage symptoms:** As they emerge, adults chew D-shaped exit holes in the bark. They also feed on foliage. Larval attacks usually begin in the crowns of trees and work downwards. Two to three successive years of infestation may lead to the gradual death of a tree from the top down. Branch dieback and discolored and sparse vegetation are damage symptoms.

**Monitoring:** Look in June for 3 mm long, D-shaped exit holes in bark made by emerging adults. Also look for sparse, discolored foliage and branch dieback beginning in tree crowns caused by larvae feeding in late June or July.

**Cultural control:** Twolined chestnut borers attack oaks that are damaged by drought, insect defoliation, diseases, root rots caused by *Armillaria mellea*, or trees that are declining for other reasons. Trees that are stressed from trunk and root injury, soil compaction, and changes in soil depth are equally vulnerable to attack by this pest. Therefore, it is important to maintain tree vitality with appropriate watering, fertilizing, mulching and pruning.

**Chemical control:** Spray canopy and bark in June if adults are present.

**Biological control:** The chalcid wasp *Phasgonophora sulcata* can cause 10 percent annual larval mortality in Wisconsin (Haack and Acciavatti 1992). The trogositid borer *Tenebroides corticalis* and the clerids *Phyllobaenus verticalis*, *Phyllobaenus* sp. and *Cymatodera bicolor* also parasitize larvae. Woodpeckers are recorded to kill as many as 78% of the beetles (Cote and Allen 1980).

**Plant mortality risk:** High, if tree is in poor health.

**Biorational pesticides:** None

**Conventional pesticides:** chlorpyrifos (nursery only), imidacloprid, permethrin



Twolined chestnut borer adult. (250)  
Photo: John Davidson



Galleries under bark caused by twolined chestnut borer. (250)  
Photo: James Solomon, USDA Forest Service, The Bugwood Network, University of Georgia