PURDUE EXTENSION

WB-08-W

America's Least Wanted Wood-Borers

Department of Entomology

OAK AMBROSIA BEETLE, *PLATYPUS QUERCIVORUS (MURAYAMA)*

Jeffrey D. Holland, K. R. Raje, J.T. Shukle, and V. R. Ferris, Entomologists

This ambrosia beetle is native to southeast Asia. As the specific name suggests, these beetles feed on oak (*Quercus* spp). Direct damage results from galleries in the wood that are formed in the breeding season. The host trees for these beetles are important for the wood industry, orna-mental industry including street trees, and have important functions in the forest ecology of North America.

Distribution: The geographical range of this beetle includes the temperate, subtropical and tropical regions of Asia in countries such as India, Indonesia, Japan, Papua New Guinea and Taiwan.

General Description: Eggs of the beetle have an elongated and cylindrical shape. Mature larvae are 2 – 6 mm long. They are legless and creamy white in color except for the head capsule which is amber to light brown in color. There is a flat to slightly concave declivity where the last abdominal segment ends. Partially developed wings and appendages are found on the creamy white pupae. The adults are reddish brown to dark brown. The body of the adults is cylindrical, elongated, averaging about 5 mm in length and displaying a concave declivity with spines.

Biology: Many oak species (family Fagaceae) are hosts of these beetles. The beetles also attack hollies, laurels, roses, and cypress. These beetles bore into and breed in the wood of their host trees. Resulting galleries appear in the shape of white splinters and may pass through the heartwood. The attack by the beetles manifests itself in the form of splinterlike white boring dust near the tree base and wilting of the foliage during late summer. Larvae and adults thrive on the ambrosia fungi. The adult females store and spread the fungus. Male beetles initiate the attacks on the boles of host trees and form galleries for mating. This sparks a mass attack. After mating the female constructs the oviposition gallery that is kept clean by the male by removing the residue to the outside of the tree. When the gallery is constructed, its surface is inoculated with the spores of the ambrosia fungus by the female. Two to three weeks later, adult females start laying eggs in individual niches. An average of 50 – 60 larvae are produced by a pair of adults. Larvae may reach the fifth instar by late November and overwinter in pupal chambers. Pupation starts the following May with the adults emerging in June – July through the exit holes made by their parents.

L: *A male ambrosia beetle*
R: *A female ambrosia beetle*
(Photo credit: Kyle Schnepp)

Source: Ciesla, W.M. (2003). Exfor Database Pest Report, *Platypus quercivorus.* Available: <http://spfnic.fs.fed.us/exfor/data/pestreports.cfm?pestidval=166&langdisplay=eng>. Accessed: Oct. 19, 2011.

Molecular Identification: A DNA barcode for this species has been developed and is freely accessible online at the National Center for Biotechnology Information <www.ncbi.nlm.nih.gov>, and the Barcode of Life Data Systems database <www.boldsystems.org>. If a specimen of this species is suspected, DNA analysis could help to confirm the identification even if the material is of a life stage that cannot be identified with morphological identification techniques.

P. quercivorus NCBI accession numbers: JQ015106 - JQ015113

Funding: This project was supported by funding from the 2009 Farm Bill 10201 program, USDA/APHIS grant number 10-8100-1488-CA.

October 2013