

N O T E

New Host Record for the Asian Ambrosia Beetle, *Xylosandrus crassiusculus* (Motschulsky) (Coleoptera: Curculionidae)¹

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The Asian ambrosia beetle, *Xylosandrus crassiusculus* (Motschulsky), is a widely-distributed beetle found in southern Asia, Africa, Indonesia, Australia, Islands of the Pacific, Europe, and the U.S. (Wood 1982, Great Basin Naturalist Memoirs No. 6, BYU; Solomon 1995, Insect Borers in N. Am. Broadleaf Trees and Shrubs, AH-706; Pennacchio et al. 2003, Redia 86: 77-80). It was first observed in the U.S. near Charleston, SC, in peach trees (Anderson 1974, USDA Coop. Econ. Insect Rep. 24: 863-864) and, by all accounts, seems to be expanding its range. It has been collected throughout the southeastern U.S. and as far north as New Jersey and west to Oregon.

The Asian ambrosia beetle exhibits the ability to survive on many species of trees, shrubs and vines. Schedl (1962, Rev. Ent. Mozambique 5: 1-594) listed 124 species of plants from 46 families that were attacked in the Old World tropics including many economically important ones such as coffee, *Coffea arabica* (L.), cacao, *Theobroma cacao* (L.), mango, *Mangifera indica* (L.), papaya, *Carica papaya* (L.), camphor, *Cinnamomum camphora* (L.) J. Presl., and tea, *Camellia sinensis* (L.) Kuntze. Many plants imported into the U.S. for landscape purposes have been attacked including crape myrtle, *Lagerstroemia indica* (L.), Bradford pear, *Pyrus calleryana* Dcne., Japanese maple, *Acer palmatum* Thunb., Chinese elm, *Ulmus parvifolia* Jacq., Kwanzan cherry, *Prunus serrulata* Lindl., and Chinese Pistache, *Pistacia chinensis* Bunge. Nurseries from Texas to Maryland to Florida have suffered moderate to heavy losses as a result of Asian ambrosia beetles (Davis and Dute 1995; Highlights Agr. Res. 42: 17-18). Of particular concern to foresters, biologists, and land managers are native plants that support natural food webs. Oaks (*Quercus* spp.), maples (*Acer* spp.), dogwoods (*Cornus* spp.), cedars (*Juniperus* spp.), magnolias (*Magnolia* spp.), elms (*Ulmus* spp.), redbud (*Cercis Canadensis* L.), muscadine (*Vitis rotundifolia* Michx.), and others have served as hosts for this exotic beetle.

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The first week of March 2005 we observed a common pawpaw, *Asimina triloba* (L.) Dunal, in Oxford, AL, exhibiting wilted foliage. Upon closer inspection we found toothpick-shaped boring dust extruding from gallery entrance holes characteristic of Asian ambrosia beetle attack. The pawpaw, which measured 4 m in total height and 6 cm in diam was cut and approximately 1.5 m of the bole was placed in a plastic box so that the beetles could be reared and a positive identification obtained. Prior to infestation the pawpaw appeared healthy. However, another pawpaw tree less than 7 m away was never attacked. On 06 May 2005, several *X. crassiusculus* emerged and continued to do so for 3 wks. In addition to *X. crassiusculus* ($n = 135$ ♀ and 49 ♂), we collected *X. germanus* (Blandford) ($n = 33$), *Xyleborinus saxesenii* (Ratzeburg) ($n = 5$), and *Ambrosiodmus tachygraphus* Zimm. ($n = 3$). All specimens were collected and placed in 70% ethanol and later sent to Dr. Robert Rabaglia at the Maryland Department of Agriculture for positive identification. Voucher specimens have been deposited in the University of Georgia Natural History Museum (Athens, GA).

To the best of our knowledge, this is the first published account of *X. crassiusculus* attacking pawpaw. Previous work has shown *X. crassiusculus* to be a serious pest in nurseries with the potential for considerable economic damage, compounded by the fact that it will attack trees that appear healthy (Oliver and Mannion 2001 and sources therein, Environ. Entomol. 30: 909-918). Although it is not yet considered a pest of pawpaw, it is known to attack a wide range of hardwoods and has a preference for nursery and orchard trees which may make pawpaw susceptible where it is grown in such situations. Pawpaw is a common understory plant throughout the eastern United States and has generated interest for commercial production (Callaway 1990, The Pawpaw, KSU CRS-Hort. 1-901 T) as a landscape tree, for fruit production, and because it has shown potential for having anticancer and pesticidal properties (Rupprecht et al. 1986, Heterocycles 24: 1197-1201).

In addition to potential economic losses, attacks from this beetle could have profound environmental consequences as well. Three species of Annonaceae (pawpaw/custard-apple family) found in the Southeast are listed as federally endangered (US-FWS-Division of Endangered Species 2005). They include *Deeringothamnus pulchellus* Small, *Deeringothamnus rugelii* (B. L. Robins.) Small, and the fourpetal pawpaw, *Asimina tetramera* Small. Each of these species occupies a very isolated range within the state of Florida. Attacks by the Asian ambrosia beetle could severely impact populations of these endangered species by eliminating individual plants or reducing populations and hindering the ability to reproduce.

Our collection of *X. crassiusculus* from pawpaw adds another native host to the list for this expanding pest. This emphasizes the need for better monitoring programs within orchards, nurseries, and managed forests that might lead to quicker and more efficient control measures and reduced economic and environmental losses.

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