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First record of the camphor shot borer, *Cnestus mutilatus* (Blandford 1894), (Curculionidae: Scolytinae: Xyleborini) in Kentucky

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Abstract. The camphor shot borer, *Cnestus mutilatus* (Blandford 1894) (Curculionidae: Scolytinae: Xyleborini) is reported from Kentucky, **new state record**. Additionally, the discovery, expansion and current distribution in the United States are reviewed.

Discussion

By the year 2000 about 44 exotic species of Scolytinae had established populations in North America (Haack 2001; Wood 1977). Among these species is *Cnestus mutilatus* (Blandford), formerly *Xylosandrus mutilatus* until its transfer by Dole and Cognato (2010), which was discovered in Mississippi and Florida (Schiefer and Bright 2004). The eastern United States provides suitable environmental conditions for ambrosia beetles, so it comes as no surprise that so many Asian ambrosia beetles, including the camphor shot borer, have successfully invaded the region (Atkinson et al. 1990).

Their small size and ability to reach new regions via firewood and lumber transportation have facilitated the rapid dispersal of bark and ambrosia beetles in the United States (Oliver and Mannion 2001), including *C. mutilatus*. Generating surveying urgency, many ambrosia beetle genera (e.g., *Xyleborus* Eichoff, *Xylosandrus* Reitter) attack healthy trees (Ngoan et al. 1976; Wood 1977). *Xyleborus glabratus* (Eichoff) and its symbiotic fungus were recently attributed to the death of large stands of native red bay, *Persea borbonia* L. (Fraedrich et al. 2007). Laurel wilt disease, caused by the fungus vectored by *X. glabratus*, also threatens the avocado industry (Fresh from Florida 2013). Therefore, the concern is not only with exotic ambrosia beetles, but their exotic symbiotic fungi as well.

Discovery in the United States. A single specimen of *C. mutilatus* was collected in 1999 in Oktibbeha County, Mississippi. Four were captured in 2000, 43 in 2001, and thousands per year thereafter. By 2003 the beetle was collected in 16 counties out of 40 surveyed (of 82 in the state) (Schiefer and Bright 2004). It was evident that the species was established.

Expansion in the United States. *Cnestus mutilatus* was first reported from southern Florida (Highlands County) in April 2002 (Schiefer and Bright 2004), eastern Texas in 2005 (Cognato et al. 2006), Alabama and Georgia in 2007 (Stone et al. 2007; Gandhi et al. 2009), Tennessee in 2008 (NAPIS 2009; Oliver et al. 2010), Arkansas, Louisiana and North Carolina in 2009 (Carlton and Bayless 2011; Gandhi et al. 2009; NAPIS 2009), and South Carolina in 2010 (Chong et al. 2012). NAPIS (2012) also posted records from Illinois, Indiana, Ohio, Virginia and West Virginia. Recent collection from a Malaise trap in southern-central Kentucky, **new state record**, yielded a single specimen. NAPIS records include Ohio and Indiana Counties adjacent to Kentucky, so *C. mutilatus* is expected to be well-distributed throughout the state.

Specimen Data. USA: Kentucky: Whitley Co., Kesheimer Cabin 36°53'6.9468" N; 84°10'40.9944" W, Malaise trap 2: by stream, 29.v-1-viii.2010, Adam Kesheimer. Specimen deposited in author's collection (JMLC).

Summary of County Distribution by State. Florida: Escambia, Highlands, Lee and Orange Counties; **Georgia**: Clarke, Clayton, Douglas, Elbert, Fulton and Oconee Counties; **Illinois**: Clinton, Fayette

and Effingham Counties; **Indiana**: Knox, Marion, Sullivan and Vanderburgh Counties; **Louisiana**: West Feliciana Parish; **Kentucky**: Whitley County; **Mississippi**: Attala, Carroll, Choctaw, Clay, Hinds, Itawamba, Kemper, Lee, Lowndes, Montgomery, Noxubee, Oktibbeha, Pearl River, Tishomingo, Warren, Webster, and Winston Counties; **Ohio**: Scioto County; **South Carolina**: Aiken, Bamberg, Berkeley, Charleston, Chesterfield, Darlington, Dorchester, Jasper, Lexington, Pickens, Richland and York Counties; **Tennessee**: Blount, Coffee, Davidson, Dickson, Franklin, Hardin, Hickman, Knox, Macon, McNairy, Montgomery, Perry, Putnam, Shelby, Van Buren, Warren, Wayne and Williamson Counties; **Texas**: Grimes, Harris and Montgomery Counties; **Virginia**: [independent city]; **West Virginia**: Putnam County. These data include NAPIS (2012) updates, Werle et al. (2010), Oliver et al. (2012), and aforementioned articles.

Natural History. Adults in Mississippi are active from May to July (Schiefer and Bright 2004), almost entirely in April and May in Texas (Cognato et al. 2006), April to September in Georgia (Gandhi et al. 2009) and March to September in South Carolina (Chong et al. 2012). Life history and native host range (Kajimura and Hijii 1992), North American host range (Stone et al. 2007; Oliver et al. 2010; Chong et al. 2012), host attack behavior and preferred hosts (Stone et al. 2007; Chong et al. 2012), fungal associations (Six et al. 2009) and world distribution (Wood and Bright 1992; Dole and Cognato 2010) of *C. mutilatus* have been reviewed in recent literature. This species was redescribed by Schiefer and Bright (2004) and included in a key to the North American (north of Mexico) Xyleborina (Rabaglia et al. 2006).

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