First Record of the Invasive Pest, *Halyomorpha halys* (Hemiptera: Pentatomidae), in McDonough County, and its Current Distribution in Illinois

1Beth Scheihing, 2Kelly Ann Estes, and 1Kenneth W. McCravy
1Western Illinois University, Department of Biological Sciences, 1 University Circle, Macomb IL 61455
2Illinois Natural History Survey, 1816 S. Oak St., Champaign IL 61820

ABSTRACT

A new record of the invasive stink bug *Halyomorpha halys* (Stål) (Hemiptera: Pentatomidae), the brown marmorated stink bug (BMSB), is reported for McDonough County, in west-central Illinois. BMSB is known to cause severe damage to commodities in the Mid-Atlantic region of the U.S. Adults seek homes as overwintering sites and are a nuisance. Currently there are limited options to control BMSB and monitoring their presence and range extension can contribute to the development of pest management strategies. This represents one of the western-most records of this insect in Illinois. The current distribution and potential economic and ecological impacts of BMSB are discussed.

RECORD

A new county record for the brown marmorated stink bug (BMSB), *Halyomorpha halys* (Stål) (Hemiptera: Pentatomidae), in Macomb, McDonough County, in west-central Illinois is reported based on findings of adult BMSB in insect collections by students taking an entomology course at Western Illinois University. These included two female BMSB collected in McDonough County on 4 and 8 Oct 2015. Three males were also collected in neighboring Knox County on 16 Sept, and 8 and 11 Oct 2015. Specimens from McDonough County were collected in disturbed grass areas at Western Illinois University (40.476°N, 90.688°W) and in a residential area east of campus (40.465°N, 90.678°W). Specimens from neighboring Knox County were collected in a disturbed grass area at Lake Storey in Galesburg (40.987°N, 90.394°W). A single adult female BMSB was also captured in the home of the first author (40.443°N, 90.654°W) in Macomb on 6 Oct 2015. The specimens displayed the distinctive dark and light bands on the antennal segments, as well as alternating dark and light banding along the margins of the abdomen. Dorsally, the head, pronotum, scutellum, and hemelytra were mottled shades of brown and gray. The legs were brown with faint white banding. Ventrally, the body was lighter in color with brown spots distributed laterally. Close examination revealed that there were no spines on the pronotum, which distinguishes this species from other pentatomids (Fogain and Graff, 2011; Jones and Lambdin, 2009; Welty et al., 2008). BMSB adults range from 14-17 mm long (Fig. 1).

This insect is native to China, Japan, Korea and Taiwan. BMSB has become an agricultural pest in its native range. The earliest confirmed sighting of BMSB in the U.S. was in Allentown, PA in 1996 (Hoebek and Carter, 2003; Rice et al., 2014). Genetic analysis has shown that BMSB was likely introduced to the U.S. from a population originating from Beijing, China (Xu et al., 2014). BMSB has been confirmed in 42 states including Illinois. Population increases have been documented in most states east of the Mississippi River, especially in the Mid-Atlantic region near the point of introduction. States west of the Mississippi River have fewer reports of BMSB (NIPMC, 2016). The first record of BMSB

Figure 1. Dorsal (left) and ventral (right) views of brown marmorated stink bug. Source: Patrick Marquez, USDA APHIS PPQ, Bugwood.org
effects on local agriculture are unknown but there is a potential for damage to economically important crops grown in Illinois. In 2015, the estimated production of grain corn in Illinois was 2.01 billion bushels, and soybean production was estimated at 544 million bushels. These two crops comprise over 90% of all crop area harvested in Illinois (USDA, 2016b). Current treatment recommendations for crop protection include the use of insecticides. Testing is currently underway on biological controls available to decrease BMSB populations (Rice et al., 2014). Active surveillance of BMSB is limited in Illinois and is needed to monitor the potential threat of BMSB. We encourage Illinois residents to report sightings of BMSB to the Illinois Co-operative Agricultural Pest Survey (CAPS) program (http://www.inhs.illinois.edu/research/caps/contacts/, last accessed March 9, 2016) in order to track the presence of the species.

ACKNOWLEDGEMENTS

We thank Krystal Funk, Daniel Hillenburg, and Katherine Peterson (ZOOL 411 entomology course, Western Illinois University) for collection of specimens and for collection date and locality information. We thank Chris Enroth (University of Illinois Extension, McDonough County, IL) and Michael Jeffords (Illinois Natural History Survey, Champaign, IL) for confirming the identification of specimens.

LITERATURE CITED


view/stateOverview.php?state=ILLINOIS.
Last accessed March 9, 2016.
Welty, C., Sheltar, D., Hammond, R., Jones, S.,
marmorated stink bug. Fact sheet FS3824-08,
Agriculture and Natural Resources. The Ohio
State University. 3 pp.
Xu, J., Foneseca, D.M., Hamilton, G.C., Hoe-
lmer, K.A., Nielsen, A.L. 2014. Tracing the
origin of US brown marmorated stink bugs,
Halyomorpha halys. Biological Invasions 16:
153–166.