First Record of Paratelenomus saccharalis (Hymenoptera: Platygastridae) on Kudzu Bug Megacopta cribraria (Heteroptera: Plataspidae) in Florida

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First record of *Paratelenomus saccharalis* (Hymenoptera: Platygastridae) on kudzu bug *Megacopta cribraria* (Heteroptera: Plataspidae) in Florida

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The kudzu bug *Megacopta cribraria* (F.) (Heteroptera: Plataspidae) was first documented in the United States in northeastern Georgia in October 2009 (Eger et al. 2010), and has subsequently spread throughout Georgia and into Alabama, Mississippi, North Carolina, South Carolina, Virginia, and Florida (Suiter et al. 2010a,b; Roberts 2011; Medal et al. 2013). The Megacopta Working Group maintains a web-based information exchange system for monitoring kudzu bug spread, and presents a regularly updated distribution map.

This plant-feeding insect is related to the stink bugs (Pentatomidae). Like other pentatomoids, the kudzu bug emits a strong defensive odor when disturbed. In its native Asia, one of the kudzu bug’s preferred host is kudzu, *Pueraria montana* Lou (Merr.) variety *lobata* (Wild.) (Fabales: Fabaceae). The kudzu bug is also an agricultural pest of soybean, *Glycine max* (L.) Merrill (Fabales: Fabaceae), and other legume plants and various fruit trees (Li et al. 2001; Wang et al. 2004; Eger et al. 2010). In the infested areas of the continental United States, the kudzu bug is found feeding on the invasive kudzu plant (Zhang et al. 2012; Ruberson et al. 2013). Additionally, it was reported feeding on soybean in the southern U.S. (Greene et al. 2012; Gardner et al. 2013b; Seiter et al. 2013a,b; Roberts et al. 2014; Musser et al. 2015) and on caged fig trees, *Ficus carica* L. (Rosales: Moraceae), in a study in Auburn, Alabama (Hu & Carroll 2012). The host range of the kudzu bug continues to increase as its distribution expands, due in part to hitchhiking on or in vehicles traveling to the northeastern and western USA. This new non-native invader has the potential to cause significant crop losses (Anonymous 2010).

A kudzu bug egg mass (19 eggs) (Fig. 1) was collected by Julio Medal on 19 Aug 2014 in a kudzu patch in Gainesville, Alachua County, Florida (29.639686°N, 82.399092°W), and a second egg mass (10 eggs) was collected by Andrew Santa Cruz on 20 Aug 2014 in a kudzu patch in Alachua, Alachua County, Florida (29.805715°N, 82.529999°W). The egg masses were maintained at the Florida Biological Control Laboratory (Florida Department of Agriculture and Consumer Services, Division of Plant Industry) in Gainesville, Florida, and monitored for the emergence of egg parasitoids. Clear plastic containers with the egg masses and moistened paper were maintained on a 16:8 h L:D photoperiod at 24 ± 2 °C and 55 to 60% RH for several weeks and inspected daily for parasitoid emergence. The parasitoids that emerged were identified as *Paratelenomus saccharalis* (Dodd) (Hymenoptera: Platygastridae; Fig. 2) by Kevin Williams. Voucher specimens were deposited in the Florida State Collection of Arthropods in Gainesville, Florida. This species was previously recorded only in Georgia and Alabama (Gardner et al. 2013a).

Field-collected egg masses from Alachua County in May 2015 confirmed that *P. saccharalis* had survived through the winter and is...
established in Alachua County. A parasitized kudzu bug egg mass (16 eggs) was collected at the same Gainesville location on 26 May 2015 and maintained in a laboratory rearing container; *P. saccharalis* adults emerged from all 16 eggs. Additional kudzu field surveys in 2015 in North-Central Florida will further assess the distribution and efficacy of this species as a biocontrol agent of *M. cribraria*.

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### Summary

The egg parasitoid *Paratelenomus saccharalis* (Dodd) (Hymenoptera: Platygasteridae) is reported for the first time on the eggs of the kudzu bug *Megacopta cribraria* (F.) (Heteroptera: Plataspidae) in Alachua County, Florida. This egg parasitoid was previously reported only in Georgia and Alabama.

Key Words: biological control; adventive species; agricultural pest; bean plataspid

### References Cited

Anonymous. 2010. Invasive insect (bean plataspid) poses risk to soybean crops and infests homes in southeastern states. United States Department of Agriculture, Animal and Plant Health Inspection Service, USA.

Eger Jr JE, Ames LM, Suiter DR, Jenkins TM, Rider DA, Halbert SE. 2010. Occurrence of the Old World bug *Megacopta cribraria* (Fabricius) (Heteroptera: Plataspidae) in Georgia: a serious home invader and potential legume pest. *Insecta Mundi* 0121: 1-11.

Gardner WA, Blount JL, Golec JR, Jones WA, Hu XP, Talamas EJ, Evans RM, Dong X, Ray Jr CH, Buntin GD, Gerardo NM, Couret J. 2013a. Discovery of *Paratelenomus saccharalis* (Dodd) (Hymenoptera: Platygasteridae), an egg parasitoid of *Megacopta cribraria* F. (Hemiptera: Plataspidae) in its expanded North American range. *Journal of Entomological Science* 48: 355-359.

Gardner WA, Peeler HB, LaForest J, Roberts PM, Sparks Jr AN, Greene JK, Reisig D, Suiter DR, Bacherel JS, Kidd K, Ray CH, Hu XP, Kemerait RC, Scocco EA, Eger Jr JE, Ruberson JR, Sikora EJ, Herbert Jr DA, Campana C, Halbert S, Stewart SD, Buntin GD, Toews MD, Bargeron CT. 2013b. Confirmed distribution and occurrence of *Megacopta cribraria* (F.) (Hemiptera: Heteroptera: Plataspidae) in the southeastern United States. *Journal of Entomological Science* 48: 118-127.

Greene JK, Roberts PM, Gardner WA, Reay-Jones F, Seiter NJ. 2012. Kudzu bug identification and control in soybean. United Soybean Board Technology Transfer Publication. http://digital.turn-page.com//87846 (last accessed 7 Sep 2015).

Hu XP, Carroll D. 2012. Alabama soybean: kudzu bug life cycle diversified in terms of hosts. http://agfax.com/2012/05/18/alabama-soybeans-kudzu-bugs-making-their-move/ (last accessed 7 Sep 2015).

Li Y, Pan HZ, Zhang S, Li WS. 2001. Observation of biology and behavior of *Megacopta cribraria* (Fabricius). Plant Protection Technology and Extension 21: 11-12.

Medal J, Halbert SE, Santa Cruz A. 2013. The bean plataspid, *Megacopta cribraria* (Hemiptera: Plataspidae), a new invader in Florida. *Florida Entomologist* 96: 258-260.

Musser FR, Catchot Jr AL, Davis JA, Herbert Jr DA, Lorenz GM, Reed T, Reisig DD, Stewart SD. 2015. Soybean insect losses in the southern U.S. Midsouth Entomologist 8: 35-48.

Roberts P. 2011. Agent update: kudzu bug, *Megacopta cribraria*. University of Georgia, Extension Circular, Aug 1: 3 pp.

Roberts P, Toews M, Buntin D. 2014. Insect management, pp. 68-80 In *Whitaker J [ed.], Georgia Soybean Production Guide*. University of Georgia, College of Agricultural and Environmental Sciences, Athens, Georgia, USA.

Ruberson JR, Takasu K, Buntin GD, Eger Jr JE, Gardner WA, Greene JK, Jenkins TM, Jones WA, Olson DM, Roberts PM, Suiter DR, Toews MD. 2013. From Asian curiosity to eruptive American pest: *Megacopta cribraria* (Hemiptera: Plataspidae) and prospects for its biological control. *Applied Entomology and Zoology* 48: 3-13.

Seiter NJ, Greene JK, Reay-Jones FP. 2013a. Reduction of soybean yield components by *Megacopta cribraria* (Hemiptera: Plataspidae). *Journal of Economic Entomology* 106: 1676-1683.

Seiter NJ, Reay-Jones FP, Greene JK. 2013b. Within-field spatial distribution of *Megacopta cribraria* (Hemiptera: Plataspidae) in soybean (Fabales: Fabaceae). *Environmental Entomology* 42: 1363-1374.

Suiter DR, Ames LM, Eger Jr JE, Gardner WA. 2010a. *Megacopta cribraria* as a nuisance pest. University of Georgia, Cooperative Extension Circular No. 991: 2 pp.

Suiter DR, Eger Jr JE, Gardner WA, Kemerait RC, All JN, Roberts PM, Greene JK, Ames LM, Buntin GD, Jenkins TM, Douke GK. 2010b. Discovery and distribution of *Megacopta cribraria* (Hemiptera: Heteroptera: Plataspidae) in Northeast Georgia. *Journal of Integrated Pest Management* 1: F1-F4.

Wang HS, Zhang CS, Yu DP. 2004. Preliminary studies on occurrence and control of *Megacopta cribraria* (Fabricius). *China Plant Protection* 22: 7-9.

Zhang Y, Hanula JL, Hor V. 2012. The biology and preliminary host range of *Megacopta cribraria* (Heteroptera: Plataspidae) and its impact on kudzu growth. *Environmental Entomology* 41: 40-50.