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First record of *Agrilus cliftoni* Knull and *Anthaxia viridifrons* Gory (Coleoptera: Buprestidae) in Wisconsin

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First record of *Agrilus cliftoni* Knull and *Anthaxia viridifrons* Gory (Coleoptera: Buprestidae) in Wisconsin

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Abstract. Two species of Coleoptera: Buprestidae are reported from Wisconsin for the first time: *Agrilus cliftoni* Knull and *Anthaxia viridifrons* Gory. Trapping, distribution information, and additional records are also discussed.

Key words. New record, wood boring beetle.

ZooBank registration. urn:lsid:zoobank.org:pub:5D3AF8BC-B74F-4750-A6B3-F0F5B16456FB

Introduction

Jewel beetles such as emerald ash borer (EAB) (*Agrilus planipennis* Fairmaire), continue to be of interest as established pests (USDA APHIS 2021). Survey programs allow for the detection of EAB as it continues to spread across North America while monitoring for other taxa not yet present in the eastern United States such as the goldspotted oak borer (*Agrilus*. *auroguttatus* Schaeffer) and oak splendor beetle *Agrilus biguttatus* Fabricius (CERIS 2021). Trapping programs such as these are valuable since they contribute information about non-target taxa. For example, collections made from emerald ash borer traps in Michigan led to the first discovery of the European oak borer (*Agrilus sulcicollis* Lacordaire) in the United States (Haack et al. 2009). Interest and bycatch resulting from woodboring pest surveys has also led to the publication of at least two substantial buprestid checklists in the past two years (Barringer 2020; Hallinen et al. 2021).

Emerald ash borer is present, at least partially, in most Wisconsin counties. Ongoing trapping continues to monitor and manage the state's quarantine and regulated material movement (Wisconsin DNR 2021). No new buprestid records have been reported from Wisconsin since the publishing of a field guide to the jewel beetles of northeastern North America in 2012 (Paiero et al. 2012) which reported 26 species of *Agrilus* Curtis and three species of *Anthaxia* Eschscholtz from the state. In the meantime, 41 species of *Agrilus* and six species of *Anthaxia* have been reported from neighboring Minnesota (Hallinen et al. 2021). Presented here are the first published records of *Agrilus cliftoni* Knull (Fig. 1) and *Anthaxia viridifrons* Gory (Fig. 2) from Wisconsin, adding to their range in the Midwest.

Materials and Methods

All examined specimens were collected using 12-unit green Lindgren funnel traps hung on ash (Lamiales: Oleaceae: *Fraxinus* sp.) baited with Z3-hexenol (Synvergy Semiochemicals, Burnaby, British Columbia). The *A*. *cliftoni* specimen was collected August 7, 2020, in Douglas County, Wisconsin at 46.55233°N, −98.2459°W. The four *Anthaxia viridifrons* samples were collect from four sites in Douglas County, Wisconsin, all in July of 2021: 46.52447°N, −91.7895°W and 46.52418°N, −91.7862°W on the 15th, 46.55861°N, −91.6998°W on the 9th, and 46.44737°N, −92.2789°W on the 16th. All samples were collected for Theresa Murphy of the United States Department of Agriculture's Animal and Plant Health Inspection Service (USDA APHIS) Forest Pest Methods Laboratory. The specimens are retained in the Pennsylvania Department of Agriculture's collection [PADA].

An additional ten records of *A*. *cliftoni* were retrieved from the Wisconsin Insect Research Collection (WIRC) via Symbiota Collections of Arthropods Network (scan-bugs.org) with the assistance of curator Dr. Craig M. Brabant. Specimens were collected between 2009 and 2011, most as part of an unpublished master's thesis (Hoftiezer 2011; C. Brabant, personal e-mail, November 11, 2021). All records were identified by Nathan

Figure 1. *Agrilus cliftoni*, dorsal view.

Figure 2. *Agrilus viridifrons*, dorsal view.

R. Hoftiezer and come from Dane (4), Dodge (1), Lafayette (1), Green (2), Vernon (1), and Outagamie (1) counties. Images of the specimens have not been confirmed by the author. An additional record from Iowa county was reported on BugGuide (https://bugguide.net/node/view/557004) and was said to have been deposited at WIRC, however the specimen was not located.

Discussion

Agrilus cliftoni (Fig. 1) and *Anthaxia viridifrons* (Fig. 2) were both reported in the recent account of Minnesota's Buprestidae (Hallinen et al. 2021), from one county each near the eastern border of the state. *Agrilus cliftoni* is also found in all surrounding states excluding Illinois. The distribution through the rest of the eastern United States is somewhat scattered despite having common widespread hosts such as *Juglans* (L.) (Fagales: Juglandaceae), *Carya* Nutt. (Fagales: Juglandaceae), *Cercis* L. (Fabales: Fabaceae), and *Platanus* L. (Protales: Platanaceae), supporting the "infrequently to rarely collected" remark of Paiero et al. (2012). The collection of this species on an ash tree shouldn't suggest a host association, as by-catch is well documented in Buprestidae (Barringer 2020).

Anthaxia viridifrons has been well-reported throughout the eastern United States, and only Alabama, Rhode Island, New Hampshire (USA), New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland and Labrador (Canada) are without records east of the Mississippi. A photographed individual from Alabama was documented on iNaturalist (www.inaturalist.org/observations/42914139) but the observation was of a live individual and it is unlikely a specimen was collected to voucher the record. Given the known host range for this polyphagous species (Paiero et al. 2012) it is likely it occurs in all of the states and provinces listed above. White ash (*Fraxinius americana* Linneaus) is a recorded host, so collection in the Wisconsin traps was reasonably expected.

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