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Further New Records of Coleoptera and Other Insects from Wisconsin

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Cover Page Footnote

Acknowledgments I am indebted to the entomologists at BugGuide.net for providing identifications (either to genera or species) of those insects for which I had submitted photographs. I am also grateful to University of Wisconsin insect diagnostician Patrick J. Liesch for confirming the identities of all insect species named herein with the exception of *H. eruditus* and *Oodera* sp. Brian V. Brown not only provided the identity but answered further questions regarding the source and date of the original description of *Hirotophora multiseriata* and (presently unknown) food preference. John F. Lawrence (retired) confirmed the synonymy of *Octotemnus laevis* with *O. glabriculus*. Along with furnishing the identity, Andrew J. Johnson provided reference to the paper on *Hypothenemus eruditus* by Kambestad et al. (2017).

Further New Records of Coleoptera and Other Insects from Wisconsin

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Abstract

Specimens of eleven different species of insects, representing seven separate families of Coleoptera, and one family each of Hemiptera, Lepidoptera, Diptera, and Hymenoptera, are herein reported as new to Wisconsin. These genera or species occur respectively within the following families: Leiodidae, Monotomidae, Cucujidae, Cryptophagidae, Ciidae, Tetratomidae, Curculionidae, Pentatomidae, Glyphipterigidae, Phoridae, and Pteromalidae. All but one of these insects were collected at or near the author's residence (Dane County); the pentatomid was taken in northern Wisconsin (Oconto County). Three of the four non-coleopteran fauna are introduced species.

Keywords: insects, Wisconsin

New findings continue to reveal previously unrecorded genera and species of insects, chiefly native Coleoptera, but also those representing four separate orders and families, mainly from southern Wisconsin. While a majority of specimens have been taken at or near the author's residence in the town of Oregon, Dane County, a single specimen of the introduced pentatomid, *Picromerus bidens* (Linnaeus, 1758), was captured in northern Wisconsin (Oconto County). Although different collecting strategies were employed, a majority of those reported were attracted to UV lights; others were found beneath the bark of logs/trees; one was found crawling on a rock; and one was reared from cut hickory limbs. These genera or species occur respectively within the following eleven families: Leiodidae, Monotomidae, Cucujidae, Cryptophagidae, Ciidae, Tetratomidae, Curculionidae (all Coleoptera), Pentatomidae (Hemiptera), Glyphipterigidae (Lepidoptera), Phoridae (Diptera), and Pteromalidae (Hymenoptera). All genera or species herein described represent **new state records**.

The identification of each taxon is discussed under its heading.

Coleoptera

Leiodidae

Gelae parvulum (LeConte, 1878). – On 27 May 2016, a single specimen of the round fungus beetle *G. parvulum* was collected at a UV light at the author's residence (42° 54'14.75", -89° 25' 25.52"). Previously, this species was classified within the large

genus *Agathidium* Panzer 1797 (Downey and Arnett 1996a: 333) but has since been transferred to its current generic assignment (Miller and Wheeler 2004). The principal characters of *Gelae* are antennae with 11 antennomeres, a distinct 3-segmented club, no supraocular carina, no postocular temporum, 5-4-4 female tarsal formula, and obsolete dorsal punctation (Miller and Wheeler 2004). As therein defined, the genus *Gelae* contains eight species, two others of which, *G. parile* (Fall, 1934) and *G. cognatum* (Matthews, 1887), also were transferred from *Agathidium*. Five new species were also described (Miller and Wheeler 2004). *Gelae parvulum* was previously recognized from Michigan and California (Miller and Wheeler 2004). Beetles in these genera are highly contractile, capable of closing themselves up into a hemispherical ball. Leiodidae was formerly known to contain 47 species in the U.S. and Canada (Peck 2001). These beetles inhabit moist forest habitats, where they feed on slime molds under bark in decaying logs. No genitalic dissection was performed on the specimen.

Monotomidae

Europs pallipennis (LeConte, 1861). – A single specimen of the root-eating beetle *E. pallipennis* was taken at a UV light at the author's residence on 13 June 2017. Within the genus *Europs* Wollaston, 1854, five species are identified from North America, whose distribution occurs mainly in the eastern, southeastern, and southwestern states (Bousquet 2002). *Europs pallipennis* is the only species found in the northeast, having

been reported from Connecticut, Florida, Indiana, Maryland, New York, Pennsylvania, and Virginia (Downey and Arnett 1996b: 988). It was formerly classified under the family Rhizophagidae, but has been transferred to a subfamily of Monotomidae. Beetles of this family live under tree bark, and most are believed to feed on fungus or fungal byproducts, although the larvae of some species (e.g., *Rhizophagus* Herbst, 1793) are predaceous (Bousquet 2002). The head and pronotum of *E. pallipennis* are reddish-brown to piceous, but the elytra are paler, with a rounded medial apical spot (Evans 2014: 282).

Cucujidae

Pediacus subglaber Leconte, 1854. – On 30 June 2017, a single specimen of the flat bark beetle *P. subglaber* was collected at a UV light at the author's residence. Along with *Cucujus* Fabricius, 1775, *Pediacus* Shuckard, 1839 is one of only two genera found in North America (Thomas 2002). Originally assigned species status, this beetle was subsequently synonymized with a subspecies of *P. depressus* (Herbst, 1797), before being revalidated by Thomas (2003). *Pediacus subglaber* has a primarily Appalachian distribution, being known from the following provinces and states: Canada: Ontario, Québec; U.S.: Alabama, District of Columbia, Georgia, Illinois, Indiana, Kentucky, Maryland, Michigan, North Carolina, Pennsylvania, Tennessee, Vermont, Virginia, and West Virginia (Thomas 2003). It is the only species of the genus found in eastern North America south of New England (Thomas 2003). The head and pronotum are reddish brown, the latter bearing a crenulate margin, and the elytra are a paler yellowish color (Evans 2014: 288). Larvae and adults are usually found underneath coniferous bark.

Cryptophagidae

Caenoscelis ferruginea (Sahlberg, 1820).—A single specimen of the silken fungus beetle *C. ferruginea* was taken at a UV light at the author's residence on 22 May 2016. Within the genus *Caenoscelis* Thomson, 1863, as many as twelve species had formerly been described from North America north of Mexico (Leschen 1996), but that number has since been reduced to only four valid species (Leschen and Skelley 2002). *Caenoscelis ferruginea* appears to have a wide and somewhat disjunct (eastern vs. western) distribution, with specimens having been found in Canada: British Columbia; U.S.: Alaska, Indiana, Kentucky, Oregon, Pennsylvania, South Carolina, and Washington (Downey and Arnett 1996b:

1011). Beetles in *Caenoscelis* have the side margins of the pronotum double. In contrast to *C. basalis* Casey, 1900, in which the pronotum is at least one-half wider than long, the pronotum of *C. ferruginea* is narrower (less than one-half wider than long) (Downey and Arnett 1996b: 1010). Both species, however, are pale reddish brown throughout. Like many other members of the family, they feed upon fungus spores in a variety of habitats (e.g., leaf litter, rotting wood).

Ciidae

Octotemnus glabriculus (Gyllenhal, 1827). – Two specimens of the minute tree fungus beetle *O. glabriculus* were collected in flight at dusk over elm logs at the Oregon Town Park (42° 54' 7.7", –89° 25' 15.6"), Dane County, Wisconsin on dates roughly one year apart, 23 May 2016 and 16 May 2017. These two collecting events both occurred on warm, humid nights. With the synonymy of *O. laevis* Casey, 1898 and *O. glabriculus* (suspected in Thayer and Lawrence 2002: 410; confirmed by Lawrence, pers. comm., 28 May 2017), the genus *Octotemnus* Mellié, 1847 is monospecific. Along with possessing 8 antennomeres, one of its most diagnostic features is the occurrence of spines along the outer edges of more than one-third of the lengths of all tibiae (Thayer and Lawrence 2002: Figs. 19 and 20). Adults and larvae feed upon *Polyporus* fungi, generally under bark and within rotting wood. *O. glabriculus* is widely distributed across North America north of Mexico, occurring within 6 Canadian provinces and 28 U.S. states (Downey and Arnett 1996b: 1117). Its occurrence in Wisconsin is not unexpected.

Tetratomidae

Eustrophus tomentosus Say, 1827. – Two specimens of the polypore fungus beetle *Eu. tomentosus* Say, 1827 were collected in similar habitats from two nearby localities. The first specimen was taken from under the bark of a dead-standing elm tree at the author's residence on 29 April 2012; the second specimen was found under the bark of an elm log at Oregon's Bicentennial Park (42° 53' 58.6", –89° 22' 27.3"), Dane County, Wisconsin on 7 May 2017. *Eustrophus tomentosus* was formerly classified within Melandryidae (Downey and Arnett 1996b) but has since been transferred to Tetratomidae (Young and Pollock 2002). The monospecific genus *Eustrophus* Illiger, 1807 is differentiated from the closely-related genus *Eustrophopsis* Champion, 1889 by having finer elytral punctures not forming striae, a slightly lobed posterior margin of the pronotum, and prothoracic episterna lacking a

transverse suture (Young and Pollock 2002: 414). *Eustrophus tomentosus* has a wide-spread and somewhat disjunct eastern and western distribution, occurring in Canada: British Columbia; U.S.: Alabama, Indiana, Iowa, Massachusetts, Michigan, New York, North Dakota, Oregon, South Dakota, and Virginia (Downey and Arnett 1996b: 1144). Its occurrence in Wisconsin is not unexpected, either. As their common name implies, these beetles feed upon the fruiting bodies of polypore fungi.

Curculionidae: Scolytinae

Hypothenemus eruditus Westwood, 1836. – A single specimen of the bark beetle *H. eruditus* was collected at a UV light at the author’s residence on 27 May 2018. This species has a worldwide distribution, being found on all continents except Antarctica. *H. eruditus* represents a species complex, exhibiting a host of cryptic and pseudo-cryptic diversity and has been dubbed the “world’s most common bark beetle” (Kambestad et al. 2017). In North America, it has been reported from 26 continental U.S. states, plus Hawaii, along with Canada and Mexico (Atkinson 2019). In the Midwest, it has been previously known from Michigan, Indiana, Illinois, and Minnesota, and so is not unexpected from Wisconsin. It is absent, however, from the Northwest for reasons not fully understood. *Hypothenemus eruditus* possesses a vast list of synonyms and more than 300 host records (Atkinson 2019). While a majority of collected specimens are brownish, the Wisconsin specimen is blackish, but possesses the usual rows of stiff flattened interstitial bristles on the elytra and a handful of asperites on the anterior margin of the pronotum. Identification of *H. eruditus* was provided by Andrew J. Johnson, University of Florida–Gainesville (pers. comm., 29 March 2019).

Hemiptera

Pentatomidae: Asopinae

Picromerus bidens (Linnaeus, 1758). – On 8 September 2018, a single specimen of the introduced predatory stink bug *Pi. bidens* was captured at a private residence on Fifield Rd., Gillett, Oconto County, Wisconsin. Approximate coordinates of the collecting site are as follows: 44° 57' 9.66", –88° 18'35.15". The specimen had been crawling on a rock. *Picromerus bidens* possesses a single ventral tooth before the apex of each profemora. While such femoral teeth are also shared with the genus *Perillus* Stål, 1862, the dark brown dorsal coloration of *Pi. bidens*, with obscure orange spots on the pronotum and base of scutellum, whose tip is pale yellowish, should distinguish this genus and species (Swanson et al. 2013).

lowish, should distinguish this genus and species (Swanson et al. 2013).

This Palearctic hemipteran was accidentally introduced to North America from Europe sometime in the early twentieth century, likely on nursery stock or horticultural products (Swanson et al. 2013). While first reported from Vermont (Cooper 1967) and then Canada (Kelton 1972), previously unidentified specimens of the insect were subsequently found to have been collected from Maine in 1932 (Javahery 1986). The species has spread gradually westward, becoming established in other Canadian provinces (as far west as Ontario) and many northeastern U.S. states, including Pennsylvania, by 1999 (Swanson et al. 2013). More recently, *Pi. bidens* has been found in both the Lower and Upper Peninsulas of Michigan (Swanson et al. 2013, Freese 2014) and Ohio (Chordas 2015). It has an Old World distribution stretching from Ireland to North Africa to Siberia and China (Swanson et al. 2013).

Lepidoptera

Glyphipterigidae

Lepidotarphius perornatella (Walker, 1864). – A single specimen of the newly-introduced sedge moth *L. perornatella* was captured at a UV light at the author’s residence on 8 August 2018. A photograph of the mounted specimen was posted to BugGuide.net (<https://bugguide.net/node/view/1576835/bgimage>), where it was identified by Kyhl Austin. The moth’s coloration is striking: the basal three-fifths of the forewings are an emerald green, while the tips are bright orange, containing irregular silver spots. The wingspan is ca. 15 mm. A wide middle band of the abdomen is also orange-colored. The hindwings are a uniform grayish color.

Lepidotarphius perornatella was first recognized in North America in August 2017 (Austin et al. 2017). Photographs of live specimens were taken around a small pond in Pella, Marion County, Iowa by Stephen R. Johnson, which were likewise posted to BugGuide.net. Their identity was confirmed from the capture and genitalic dissection of additional specimens by Canadian National Collection entomologists. They belong to the monotypic genus *Lepidotarphius* Pryer, 1877, although two subspecies, *L. p. perornatella* and *L. p. fulgens* (Erschoff, 1877), have been described. *L. perornatella* is native to China, the Russian Far East, Japan and South Korea, where its larvae feed on the flowering monocot, *Acorus calamus* Linnaeus (Acoraceae). The genus *Acorus* is widely used in tropical medicine and horticulture. Importation of this plant was likely the means by

which *L. perornatella* was accidentally introduced to North America (Austin et al. 2017).

Diptera

Phoridae

Hirotophora multiseriata (Aldrich in Brues, 1904).—On 3 July 2018, a single specimen of the native hump-backed fly *Hi. multiseriata* was collected at a UV light at the author's residence. It was identified by Brian V. Brown, Natural History Museum of Los Angeles County (pers. comm., 10 July 2018). The flattened and enlarged hind femora are elongate-oval with a finely pebbled surface, while the hind tibiae possess a series of transverse rows of hairs along their entire length, for which the species was named. Originally described from Lawrence, Kansas, additional specimens were also recorded from Ithaca, New York (Aldrich in Brues, 1904: 345).¹ Until recently, this species was classified within the subfamily Phorinae and genus *Chaetopleurophora* Schmitz, 1922, where it was one of six known taxa from America north of Mexico (Peterson 1987: 696; Arnett 2000: 883). But a more recent analysis has placed it within the new subfamily Chonocephalinae and new genus *Hirotophora* (Brown et al. 2015). Many phorid larvae are scavengers, whose food preferences range from fungi to carrion; others are parasitic upon various arthropods including social insects. The dietary preference of *Hi. multiseriata* has not been determined.

Hymenoptera

Pteromalidae: Cleonyminae: Ooderini

Oodera sp. – During the course of rearing insects from the cut limbs of a felled shagbark hickory tree, *Carya ovata* (Miller) (Juglandaceae), that originated from the Oregon Town Park, a number of beetle species emerged, along with specimens of multiple families of minute to moderate-sized parasitic wasps. Those included a single specimen of an unidentified species of the introduced pteromalid, *Oodera* sp., that emerged on 20 June 2016. This wasp, ca. 5 mm., possesses enlarged, raptorial profemora that are somewhat analogous to the enlarged, raptorial hind femora of the Chalcididae.

A photograph of the wasp was submitted to BugGuide.net (<https://bugguide.net/node/view/1283366/bgimage>), where it was identified by Ross Hill as belonging to the

Old World genus *Oodera* Westwood, 1874. Additional comments, published by Gary Gibson (2013), accompanied the posting of an earlier specimen of *Oodera* (<https://bugguide.net/node/view/737675/bgimage>) that had been collected from a Malaise trap on 12 July 2007 by M. J. Hatfield from Story County, Iowa. Gibson noted that *Oodera* was first discovered in the eastern U.S., where it had been reared from the honeylocust *Gleditsia* Linnaeus (Fabaceae) in Maryland, New Jersey, and Virginia. Its known Old World hosts are wood-boring beetles in Buprestidae and Scolytidae. Although it is impossible to positively associate the Wisconsin specimen of *Oodera* sp. with any particular beetle species that emerged from the same hickory limbs, a possible candidate for its host is the small bark beetle, *Chramesus hickoriae* LeConte, 1868 (Curculionidae: Scolytinae), of which several dozen specimens emerged, starting on 17 June. Yet, the purpose of the raptorial profemora of *Oodera* sp. remains unknown.

Apart from the specimen of *Oodera* sp., which was donated as a voucher to the Wisconsin Insect Research Collection (WIRC), all other specimens described herein are retained within the author's personal collection (JDMC).

Acknowledgments

I am indebted to the entomologists at BugGuide.net for providing identifications (either to genera or species) of those insects for which I had submitted photographs. I am also grateful to University of Wisconsin insect diagnostician Patrick J. Liesch for confirming the identities of all insect species named herein with the exception of *Hypothenemus eruditus* and *Oodera* sp. Brian V. Brown not only provided the identity but answered further questions regarding the source and date of the original description of *Hirotophora multiseriata* and (presently unknown) food preference. John F. Lawrence (retired) confirmed the synonymy of *Octotenus laevis* with *O. glabriculus*. Along with furnishing the identity, Andrew J. Johnson provided reference to the paper on *Hypothenemus eruditus* by Kambestad et al. (2017).

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¹ This publication bears the date 1903 on its cover, but was not released until 1904. B. V. Brown, pers. comm., 16 February 2019.

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