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## New Records of Coleoptera from Wisconsin

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### Abstract

Specimens of eleven different species of beetles (one of which is identified only to genus) have been collected from and are herein reported as new to Wisconsin. These species collectively occur within seven different families: Leiiodidae, Latridiidae, Scirtidae, Throscidae, Corylophidae, Staphylinidae, and Dermestidae. A majority of the specimens were collected at the author's residence, either in pan traps or at UV lights; the others were taken at two nearby (township) parks.

Although Wisconsin's coleopteran fauna is large and diverse, new findings continue to reveal previously unrecorded genera and species, at least those collected from one southern county in particular (Dane County). Over the past few years, but chiefly during 2016, the author has employed a variety of collecting techniques, including (passive) usage of pan traps and UV lights, along with more traditional (and active) field techniques of examining logs, flowers, etc. Such efforts have been rewarded with the recognition of eleven different species of beetles (one of which has not been identified beyond genus level) that collectively occur within seven families: Leiiodidae, Latridiidae, Scirtidae, Throscidae, Corylophidae, Staphylinidae, and Dermestidae. All species or genera herein described represent **new state records**.

Approximate coordinates of the author's residence in Oregon, Dane County, Wisconsin are as follows: 42° 54' 14.75", -89° 25' 25.52". This collecting site sits near the top of a glacial moraine and is largely surrounded by woods, whose deciduous tree species include shagbark hickory, various oaks, hackberry, boxelder, wild cherry, elm, mulberry, ash, and tulip poplar (the latter have been planted during my residence, while the former were pre-existing). A small prairie restoration adjoins the wooded area and the property itself is backed by a large agricultural field planted in row crops.

On 11 July 2015, three specimens of the round fungus beetle, *Zeadolopus egenus* (LeConte) (Leiiodidae), were taken at a UV light at the author's residence. In the genus *Zeadolopus* Broun, antennae possess ten antennomeres and an uninterrupted club of

four antennomeres. Antennal grooves may be found beside the eyes (Peck 2001). Currently, four species within the genus are recognized from the continental U.S. and Canada: *Z. bifoveolatus* Daffner, *Z. rubricornis* Daffner, *Z. oklahomensis* Daffner, and *Z. egenus*. The first two species on this list are known only from extreme southern Florida, while *Z. oklahomensis* has a known distribution of Alabama, Arkansas, Florida, Oklahoma, Texas, and Virginia. *Z. egenus*, by contrast, has the widest and northernmost range of the four congeners, inhabiting Alabama, the District of Columbia, Florida, Georgia, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Michigan, North Carolina, South Carolina, Texas, Vermont, and Virginia, along with the provinces of Ontario and Québec, Canada (Peck and Cook 2013b). Like other members of the subfamily Leioidinae, *Zeadolopus* are believed to feed upon the spores or other tissues of various fungi, having little or no economic importance. A synonym of the genus, *Apheloplastus* Brown, was the name under which this species was listed in Downie and Arnett (1996a). Genitalic dissection is often necessary for the confirmation of species identifications within this family (Peck 2001), although that procedure was not applied in this case.

Three specimens of an unidentified species of the genus *Anogdus* LeConte (Leiiodidae) were taken at a UV light at the author's residence on 11 July 2015, 29 May 2016, and 17 June 2016. *Anogdus* is a member of the *Cyrtusa* genus group, in which the mesosternum is vertical between the middle coxae (Peck and Cook 2013a). Antennae consist of eleven antennomeres, with an interrupted club of five antennomeres, in which the eighth segment is small, narrow, and disk-shaped. The genus is known only

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from the Nearctic, and a total of sixteen species are now recognized. Identifications of species require dissection of the male genitalia, which has not been performed on any of the specimens. Females of the genus are difficult or impossible to identify to species without associated males. Most species in the genus *Anogdus* were formerly included under the genus *Neocyrtusa* Brown, before its synonymy with *Anogdus* was established by Daffner (Peck and Cook 2013a). *Anogdus* belongs to the Leiodinae and shares the same feeding preferences as *Zeadolopus*.

Three specimens of the minute brown scavenger beetle, *Corticarina longipennis* (LeConte) (Latridiidae), were taken at the author's residence by three different means: on 23 April 2016 from a pan trap filled with a mixture of Pine-Sol® and water; on 29 May 2016 by beating flowers of a highbush cranberry (*Viburnum opulus trilobum*), and on 11 July 2016 at a UV light. Under the genus *Corticarina* Reitter, nineteen species were recorded from America north of Mexico (Andrews 2002) and that are generally distributed. All are considered to feed upon the conidia of various kinds of fungi. Until recently, this species had been classified within the genus *Melanophthalma* Motschulsky. But a revision of the family Latridiidae (Majka et al. 2009) has since placed this species within the genus *Corticarina*. The distinguishing feature of *C. longipennis* is the presence of a prominent denticle on each hind angle of the pronotum. Near the author's residence, this species is seemingly much less common than the more widely collected *Melanophthalma distinguenda* (Comolli), with which it might be superficially confused. Previously recorded localities of *C. longipennis* included Florida, Indiana, Iowa, Louisiana, Maine, Massachusetts, New Hampshire, New Jersey, New York, Texas, and Nova Scotia, Canada (Majka et al. 2009).

Two specimens of the marsh beetle, *Contacyphon padi* (Linnaeus) (Scirtidae), were taken at a UV light at the author's residence in 2016; the first on 6 May, and the second on 5 September (with the latter apparently signifying that another generation had been completed over the summer). Until recently, this species had been classified within the genus *Cyphon* Paykull. But a revision has since removed the synonymy of the genus *Contacyphon* Gozis to accommodate species previously classified under *Cyphon* (Zwick et al. 2013). Under *Cyphon*, thirteen species were reported from America north of Mexico (Downie and Arnett 1996b, under the family Helodidae), seven of which were known from the northeast. But that number had climbed to twenty-seven species in the same genus only six years later, as a result of taxonomic revisions (Young

2002), whose members are described as generally distributed. *C. padi* displays a clearly-defined yellowish spot on the apex of each elytron. Under the genus *Cyphon*, the species has been figured in Evans (2014). Its previously-recorded distribution stretched from the Maritime Provinces of Canada and New England to Florida and west to Indiana, with other populations occurring separately in Utah and Washington. Larvae of Scirtidae are aquatic, with some tolerance for temporary or ephemeral ponds/pools adjacent to rivers and streams, along with sphagnum bogs; some species even reproduce within treeholes or the leaf axils of bromeliads (Young 2002).

Over a span of five nights (22-27 May 2016), two different species in the genus *Aulonothroscus* Horn (Throscidae) were taken at a UV light at the author's residence. A single specimen of the first species, *A. distans* Blanchard, appeared on 22 May; three specimens of the second species, *A. convergens* Horn, were similarly taken on 26-27 May. *Aulonothroscus* is one of only three Nearctic genera in the family Throscidae and its most diverse genus, with thirteen species found generally distributed (Johnson 2002). *Aulonothroscus* is characterized by a metasternum having a deep, oblique tarsal sulcus on each side, and capitate antennae. Six species in the genus have likewise been reported from the northeast, including *A. punctatus* (Bonvouloir), *A. tereetrius* Blanchard, *A. constrictor* (Say), *A. laticeps* Blanchard, *A. distans*, and *A. convergens* (Downie and Arnett 1996a). Adults are believed to be generalist feeders on pollen and mold. Members of Throscidae possess some ability to click and jump, similarly to the Elateridae and Eucnemidae (Johnson 2002).

While *A. distans* and *A. convergens* are both marked by prosternal striae (near the outer margins), those of the former taper off near the base, while those of the latter are uniform and complete. The separation of these two species is best accomplished by deeply triangular emarginations on the compound eyes of *A. convergens*, whereas only small, semicircular emarginations are present on the eyes of *A. distans*. Previously, the latter species had been reported from Massachusetts, New York, and North Carolina, while *A. convergens* was known from the District of Columbia, Florida, Louisiana, New York, North Carolina, South Carolina, and Tennessee (Downie and Arnett 1996b). Throscids most commonly occur in forested environments ranging from lowland to mid-elevations (Johnson 2002).

Two specimens of the minute fungus beetle, *Sericoderus lateralis* (Gyllenhal) (Corylophidae), were collected from differ-

ent localities in 2016; in the first case, a specimen was beaten from blossoms of a Russian olive tree (*Elaeagnus angustifolia*) at Oregon's Bicentennial Park on 19 May (approximate coordinates of park's entrance: 42° 53' 58.6", -89° 22' 27.3'), while the second specimen was taken at a UV light at the author's residence on 5 July. Within the genus *Sericoderus* Stephens, five species are recognized from America north of Mexico, all of which are considered widely distributed. As members of the family Corylophidae, both larvae and adults are consumers of a variety of fungal spores (Bowstead and Leschen 2002).

Three species of *Sericoderus* are known from the northeast: *S. subtilis* LeConte, *S. obscurus* LeConte, and *S. lateralis* (Downie and Arnett 1996b). The genus is characterized by an oval body form having the elytra tapering significantly behind and the strongly bisinuate hind margin of the pronotum, whose hind angles are prolonged backwards. In the case of *S. lateralis*, the reddish to yellowish pronotum has a nebulous dark spot near the anterior margin; the elytra are dark and truncated. The species is figured in Evans (2014). The distribution of *S. lateralis* is described as "cosmopolitan," with records from the provinces of British Columbia, Manitoba, Ontario and Québec, Canada; in the U.S., it has been previously taken in Florida, Indiana, Massachusetts, Michigan, New York, Oregon, and Washington (Downie and Arnett 1996b).

A single specimen of another corylophid, *Arthrolips misellus* (LeConte), was taken at a UV light at the author's residence on 10 August 2016. Within the genus *Arthrolips* Wollaston, eight species are identified from America north of Mexico (Bowstead and Leschen 2002), whose distribution is primarily southern and western. Of these, only *A. misellus* had been reported from the northeast, from Massachusetts and Pennsylvania to Virginia (Downie and Arnett 1996b, Evans 2014). The species is figured by the latter author. This finding appears to represent the first Midwestern record of the species and seemingly marks its westernmost appearance beyond the Atlantic seaboard. In the genus *Arthrolips*, the hind margin of the pronotum extends straight across. *A. misellus* possesses a reddish-to yellowish pronotum and dark, truncated elytra. But the congener species *A. decolor* (LeConte), which has been collected in Iowa, is a uniform pale yellowish-brown (<http://bugguide.net/node/view/262787>). Larvae and adults of both species presumably consume fungal spores.

A single specimen of the rove beetle, *Aleodorus bilobatus* (Say) (Staphylinidae)

was taken in a pan trap filled with a mixture of Pine-Sol® and water on 18 April 2016 at the author's residence. In the genus *Aleodorus* Say, four widely distributed species have been recorded from America north of Mexico, while one species has been described from Mexico itself. Like most other staphylinids, they are presumably predaceous or omnivorous, feeding upon fungi or decaying organic matter. The genus is characterized by the mesosternum occurring on a level ventral to the metasternum, and the mesosternal process is short and acute, not extending between the middle coxal cavities (Newton et al. 2001). In *Aleodorus*, the pronotum is strongly constricted basally, and has a deep, longitudinal sulcus. Within the northeast, only two species of *Aleodorus* have been taken: *A. scutellaris* (LeConte) and *A. bilobatus*. The latter has the wider distribution, being known from the Province of Ontario, Canada, along with the U.S. states of Connecticut, Georgia, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Michigan, New Jersey, New York, North Carolina, Pennsylvania, Virginia, and West Virginia (Downie and Arnett 1996a). *A. bilobatus* may be distinguished from *A. scutellaris* by the presence of a broad, smooth median channel on the scutellum, which is absent from the latter. Habitus drawings of *A. bilobatus* are shown in Downie and Arnett (1996a, Fig. 27.25), and in Newton et al. (2001, Fig. 273.22).

Two specimens of another rove beetle, *Ocypus nitens* (Schränk) (Staphylinidae), were captured separately in 2016; the first, on basement carpeting of the author's residence, 8 October, while a second specimen was found outdoors crawling on a paved asphalt trail at the Oregon Town Park, 1 November (approximate coordinates of the park's entrance: 42° 54' 7.7", -89° 25' 15.6"). The first case provides confirmation that the species often wanders into dwellings and whose lifestyle is strongly synanthropic (Brunke et al. 2011). In the second (outdoor) case, it should be noted that the asphalt trail had only been installed earlier that summer. The beetle's appearance perhaps reflected the considerable ground disturbance associated with construction of the trail.

In the genus *Ocypus* Leach, four adventive European species have been reported from America north of Mexico; all are predaceous. Yet, two of those species have only been recorded from western or southwestern localities: *O. aeneocephalus* (DeGeer) was originally discovered at Vancouver, British Columbia and has not been taken outside of that province; *O. olens* (Müller), also known as the Devil's Coach Horse (Eaton and Kaufman 2007), was first discovered in southern California and has subsequently spread as far north as Washington and

eastward into Arizona (Newton et al. 2001). Two other species, *O. brunnipis* (Fabricius) and *O. nitens*, were previously recorded only from New Hampshire and Massachusetts, although that distribution has subsequently expanded to include Maine, Rhode Island, and New York. While bodies of the latter two species are both black, *O. brunnipis* has almost entirely brownish legs (femora, tibiae, and tarsi), whereas the legs of *O. nitens* are black with the exception of brownish tarsi (Brunke et al. 2011). The latter species is also figured in Evans (2014). As far as is known, these specimens of *O. nitens* from Wisconsin represent the westernmost occurrence of that species within the U.S. to date. By what means it has suddenly appeared in the Midwest cannot be answered, unless it has simply remained undetected until now.

Finally, two specimens of the dermestid beetle, *Dermestes nidum* Arrow (Dermestidae), were collected by two means and from separate places. In the first case, an adult was captured at Oregon's Bicentennial Park on 11 April 2003; in the second case, an adult was taken at a UV light at the author's residence on 6 May 2013. In the genus *Dermestes* Linnaeus, fifteen species are represented from America north of Mexico. They are characterized by the lack of a median ocellus while the procoxae are large and contiguous at their apices (Kingsolver 2002). As scavengers, they feed upon dried animal and plant remains, e.g., carcasses, that are rich in protein. The only regional study of Dermestidae in Wisconsin (Bayer et al. 1972) reported the occurrence of eight species in the genus *Dermestes*: *D. ater* DeGeer, *D. caninus* Germar, *D. fasciatus* LeConte, *D. frischi* Kugelmann, *D. lardarius* Linnaeus, *D. maculatus* DeGeer, *D. peruvianus* Castelnau, and *D. talpinus* Mannerheim. Specimens of *D. nidum* are elongate-oval and have a uniform dark reddish brown coloration, including appendages. This species has been previously reported from California, Florida, Georgia, Indiana, New Mexico (?), New York, Ohio, Oklahoma, Texas, and West Virginia (Beal 2003).

Apart from the newer specimen of *D. nidum*, which was donated as a voucher to the Wisconsin Insect Research Collection (WIRC), all specimens described herein are currently held in the author's personal collection (JDMC).

### Discussion

The predominance of these new records within Wisconsin, especially during 2016, naturally poses the question of causation. One of the leading factors *might* have been the unusually mild, el Niño winter that preceded the collecting season (although

locally it was more moderate than the corresponding winter of 2012). Here, we might speculate that such warmer temperatures enabled a somewhat larger number of coleopteran fauna to survive (over those experiencing average, harsher conditions), and which raised their numbers above some kind of 'threshold' to reach a higher detectable (or 'collectable') level than would otherwise occur. In a few cases, however, the pan traps themselves almost certainly made a difference, as this was the first year in which the author employed them. Undoubtedly, luck/contingency also played an important role.

### Acknowledgments

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I also express my appreciation to the two anonymous reviewers of the manuscript. They have offered significant improvements to the paper's style and consistency, and brought newer taxonomic revisions and related references to my attention.

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