

***ARCHILESTES GRANDIS* (RAMBUR)
(ODONATA: LESTIDAE): NEW FOR MICHIGAN**

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ABSTRACT

Archilestes grandis (Rambur) (Odonata: Lestidae) is a large lestad damselfly previously unknown from Michigan. A population was found in 2005 in Wayne County, Michigan.

In the late afternoon on 27 September 2005, Darrin O'Brien and I observed a very large *Lestes* perched by a retention pool in Livonia, Wayne County, Michigan, T1S R9E, sec 7. We collected it, and verified that it was a female *Archilestes grandis* (Rambur) (Odonata: Lestidae). The pool was located at the end of a small creek just before it entered into a culvert running under a major road. We followed the creek upstream, and observed at least five more individuals before the sun set, collecting a male. These two vouchers were deposited in the Insect Collection at the University of Michigan Museum of Zoology (UMMZ). I returned the next day, which was exceptionally windy. Nonetheless, I was able to photograph two pairs of *A. grandis* in tandem, as well as several additional males (e.g., Fig. 1).

This is the first record of this species from Michigan. It does not appear on historical lists of Michigan Odonata (Byers 1927, Kormondy 1958, O'Brien 1997), nor were there any specimens in the Insect Collection at the UMMZ, where vouchers of Michigan Odonata are housed.

The range of *A. grandis* extends south through Mexico and Central America to Colombia and Venezuela, but until the 1920s, it was found in the United States only in the southwestern states (Westfall and May 1996). It has since expanded its range, and is now found from as far northeast as western New England (Donnelly 2004). In the Great Lakes region, it was first found in Ohio in 1927 (Williamson 1931), and is now considered uncommon in scattered locations throughout that state (Glotzhober and McShaffrey 2002). The first record for Wisconsin is from 8 September 1978 (Borkin 1985) and it has since been recorded in 3 more southern counties (WDNR 2004, Reese 2005). Canada's first record is from 26 August 2002, at Ojibway Prairie Provincial Nature Reserve, Windsor, Essex County, Ontario; 1 male was collected, but no others were found despite searching into October (Pratt and Paiero 2004). It has been recorded in 9 Illinois and 2 Indiana counties (Donnelly 2004).

Archilestes grandis is found in slow or moderate-flow streams and permanent ponds (Westfall and May 1996, Moskowicz and Bell 1998). It flies late in summer, with mating taking place in October in Ohio (Williamson 1931) and Pennsylvania (Ferris 1951). Oviposition takes place in non-aquatic plants, usually in plant parts that are directly over water (Williamson 1931, Bick and Bick 1970). In Ohio, it is unknown whether it overwinters as eggs or larvae (Glotzhober and McShaffrey 2002), although in North Carolina the species apparently overwintered in either the egg stage or as very early larval instars (Ingram 1976).

The unnamed creek in Wayne County, part of the Rouge River watershed, extends from the culvert under the road, where the first female was collected, west ~ 1 km. It is shallow (generally less than a few centimeters deep), clear, with a sandy bottom, and is ~ 2 to 3 meters across. Prior to 2005, the creek

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Figure 1. Pair of *Archilestes grandis* in tandem.

ran through an ~20 ha undeveloped lot. The lot has been cleared, graded, and readied for development. Some roads are complete, and bridges now span the creek in four places. At these bridge crossings the substrate is siltier, trash has accumulated, and there is little protection from runoff from the roads. A “natural” buffer of only a few meters protects the creek but the vegetation consists of weedy species such as buckthorns (*Rhamnus* sp.) and box elder saplings (*Acer negundo*) which have overgrown most of the length of the creek.

Archilestes grandis is a species that is extremely tolerant of poor water quality and its ability to flourish in a variety of degraded habitats (such as the Wayne County site) may explain the species range expansion over the last 80 years (Moskowitz and Bell 1998).

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