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A Noteworthy Geographic Distributional Record for the Milliped, *Apheloria virginiensis reducta* (Polydesmida: Xystodesmidae), from the Arkansas Delta

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Running Title: New Distribution Record for *Apheloria virginiensis reducta*

The milliped, *Apheloria virginiensis reducta* Chamberlin, 1939 is an attractive and colorful relatively large-bodied xystodesmid that ranges west of the Mississippi River from south of the Missouri River in central Missouri to extreme southeastern Kansas, the Interior Highlands of Arkansas, and further south to the far southeastern extremity of the Ouachita Physiographic Province in Oklahoma (Shelley and McAllister 2007, see their Fig. 2). In Arkansas, the reported distribution of *A. v. reducta* (Fig. 1) includes upland habitat in the Ouachita and Ozark Physiographic provinces with scattered records outside these provinces in four counties of Crowley's Ridge Physiographic Province in the far eastern part of the state (McAllister et al. 2002, 2003, 2013, Shelley and McAllister 2007). The type locality is Imboden, Lawrence County (Chamberlin 1939). Interestingly, Shelley and McAllister (2007) noted "...though Arkansas east of the Ouachitas has been poorly investigated, the milliped's absence from the heavily sampled adjoining corners of Texas, Arkansas, and Louisiana suggests that its absence from Coastal Plain areas to the north may be real." Therefore, given that no previous record of *A. v. reducta* has been reported from the Mississippi Alluvial Plain, we herein report a newly discovered population of this milliped from outside upland habitat in the Delta of far southeastern Arkansas.

On 28 June 2014 at 1600 hr, following moderate precipitation at an air temperature of 21°C, we collected 50 xystodesmids matching the description by Chamberlin (1939) of *A. v. reducta* from Pendleton Bend Park neighboring the Arkansas River, Desha County (33.987451°N, 91.362222°W). We also compared the gonopods of our specimens (Fig. 2 inset) to descriptions of those of *A. v. reducta* provided in Shelley (1978, his Figs. 65-66) and they possessed the diagnostic circular or "sickle-shaped" appearance. Habitat consisted of Arkansas River Valley shoreline

Figure 1. Previous Arkansas county records of *A. v. reducta* (dots), type locality (open dot) in Lawrence County and new record (star) in Desha County. For a complete geographic distribution in the U.S. see Shelley and McAllister (2007, their Fig. 1).

adjacent to a boat ramp. Five specimens were initially discovered under a trash can. Many others were photographed while traveling overland to retreats under rocks lining both sides of the boat ramp. Voucher specimens were placed in containers of 70% ethanol and select others were saved in DNA grade (95% v/v) ethanol. Voucher specimens were deposited in the Sam Noble Oklahoma Museum of Natural History, Oklahoma City, Oklahoma.

Numerous millipeds (estimated to be >500) were observed under and among concrete rock piles bordering the boat ramp. Only a few dead grasses and weeds were interspersed in this microhabitat which is unlike that ever reported for *A. v. reducta*. Previous reports (Shelley and McAllister 2007, McAllister et al. 2013) revealed that collections of *A. v. reducta* are typically made in upland deciduous forest with

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Figure 2. Male *A. v. reducta* showing gonopods (arrow). Inset: Higher magnification of left gonopod showing characteristic shape.

overstory dominated by oak (*Quercus* spp.). Specimens are usually taken from under decaying logs, small rocks, trash or other debris in areas with damp ground. These xystodesmids are known to squirt hydrogen cyanide from pores lining the sides of their body as a chemical defense, so care should be taken when collecting.

Although there was some variation among individuals, closer examination revealed the following: most possessed primarily yellow paranota and yellow transverse bands along the caudal metatergal margins with some semilunar splotches (see fig. 3C). Out of 40 individual adult *A. v. reducta* examined for gender, sex ratio was 2.3:1.0 (males: females).

In Arkansas, the previous most southeasterly located collection site for this millipede was along the southern periphery of Crowley's Ridge in Lee County at Bear Creek Lake Recreation Area (McAllister et al. 2013). Our new locality (Fig. 1) is over 100 km SSW of this location and situated geographically in the Mississippi Alluvial Plain physiographic region of the state. In addition, we did not observe additional *A. v. reducta* at two other boat ramps along this stretch of the river. The new site is also the southernmost locality in terms of latitude in the overall range of *A. v. reducta*. The previous southernmost locality was at Beavers Bend State Park in McCurtain County, Oklahoma (Shelley

and McAllister 2007). Finally, not only do we document a significant range extension but we also report the largest congregation, to our knowledge, of *A. v. reducta* ever reported from one locality.

Figure 3. Specimens of *A. v. reducta* observed at the study site. A. Groups of individuals (arrows) crawling overland. B. Two individuals seeking refuge under broken concrete boulders at Pendleton boat ramp. C. Single *A. v. reducta* showing ornamentation and coloration.

Acknowledgments

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