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## New Host and Geographic Distribution Record for the Leech, *Myzobdella reducta* (Annelida: Hirudinida: Rhynchobdellida: Piscicolidae), from Arkansas

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Little is known about the leeches infesting fishes in Arkansas. Klemm (1982) provided a synopsis on leeches which included some information on those hosted by fishes in Arkansas, and Hoffman (1999) provided a summation of parasites (including leeches) of North American freshwater fishes. Williams and Burrenson (2005) described a new genus and species of piscicolid leech, *Cystobranchus klemmi* (as *Gonimosobdella klemmi*), from cyprinid fishes of the state. Moser et al. (2006) reported on the leeches of northern Arkansas, and McAllister et al. (2011) documented a new host and state record for *Actinobdella inequinannulata*. In addition, specimens of the fish leech, *Placobdella phalera* from Arkansas reported by Moser (2006), have been redetermined to be *Placobdella translucens* (Richardson et al. 2012). Herein, we document a new host and state record for a piscicolid leech from north-central Arkansas.

On 28 July and 18 November 2011, and again on 26 April 2012, 12 (5 males, 7 females) adult pirate perches, *Aphredoderus sayanus* (mean total length [TL] ± 1SD = 79.3 ± 8.7, range 61–93 mm) were taken with a standard aquatic dipnet from Spring Creek at James Switch off St. Hwy 69, Independence County, Arkansas (35.828241°N, 91.724325°W). The habitat and geographic locale were unusual for *A. sayanus* as the site was a cold spring-fed stream situated in the Ozarks rather than the quiet ponds, oxbow lakes, swamps, ditches, and sluggish mud and sand-bottomed small rivers and streams of the lowlands (Robison and Buchanan 1988, Page and Burr 2011). Fishes were placed in a container of habitat water and within 24 hrs anesthetized with tricaine-methanesulfonate (MS-222, Syndel Laboratories, Ltd., BC, Canada) prior to examination. Leeches were placed in a Petri dish containing 0.6% saline and examined under a stereomicroscope. Specimens were transferred to individual vials containing 10% ethanol, gradually relaxed in increasing ethanol grades up to 70%, then

transferred to 10% neutral buffered formalin. Leeches were identified according to taxonomic keys of Klemm (1982, 1985). Preserved specimens had lost some coloration, but clearly had longitudinal stripes.

Voucher specimens of the leeches were deposited in the Invertebrate Zoology Collections of the Department of Invertebrate Zoology, National Museum of Natural History (USNM), Smithsonian Institution, Washington, D.C. Host vouchers were deposited in the fish collection at Henderson State University (HSU), Arkadelphia, Arkansas, as HSU 3456.

Eight leeches (USNM 1177587, 1184048) were found on the caudal or pectoral fins of 5 of 12 (42%) *A. sayanus* (TL = 63, 77, 80, 85 and 90 mm) and subsequently identified as *Myzobdella reducta* (Meyer 1940); 2 female and 3 male *A. sayanus* were infested. No significant histopathology was observed on fishes except a minor inflammatory response. We include (as Fig. 1) what we believe to be the first ever photomicrograph of this leech.

*Myzobdella reducta* is an opportunistic blood-feeding species on fish and has been collected infrequently with a scattered distribution in eastern North America, including the Great Lakes and Mississippi River drainages (Moser et al. 2006). This leech was described by Meyer (1940) from the slenderhead darter, *Percina phoxocephala* in Illinois. Williams and Burrenson (2006) synonymized *Piscicolaria* with *Myzobdella* based on molecular sequence data. This leech has been reported on fishes from Connecticut, Delaware, Florida, Georgia, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Tennessee, West Virginia, and Wisconsin, and Ontario, Canada (Hoffman 1999, Richardson et al. 2012) (Fig. 2). *Myzobdella reducta* has been reported from a wide variety of fishes, including lake chubsucker (*Erimyzon sucetta*), emerald shiner (*Notropis atherinoides*), golden shiner

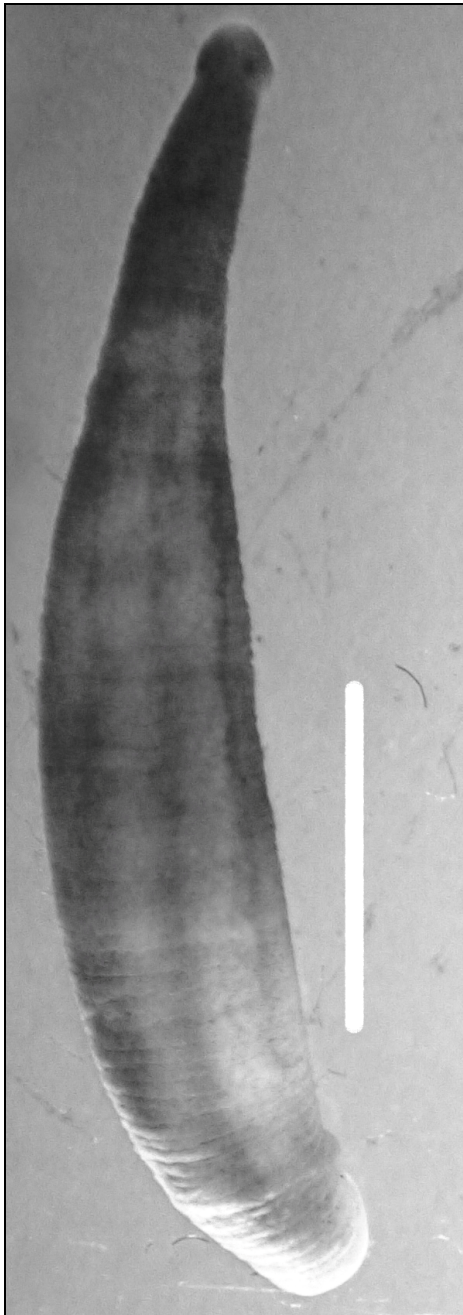
New Host and Geographic Distribution Record for *Myzobdella reducta* from Arkansas

Figure 1. Photomicrograph of *M. reducta* (USNM 1184048) from *A. sayanus* from Arkansas; note annulations. Scale bar = 3.0 mm.

(*Notemigonus chrysoleucas*), black bullhead (*Ameiurus melas*), channel catfish (*Ictalurus punctatus*), black crappie (*Pomoxis nigromaculatus*), redbreast sunfish (*Lepomis auritus*), warmouth (*Lepomis gulosus*), bluegill (*Lepomis macrochirus*), spotted sunfish (*Lepomis punctatus*), largemouth bass (*Micropterus salmoides*), tangerine darter (*Percina aurantiaca*), logperch (*Percina caprodes*), channel darter (*Percina copelandi*), gilt darter (*Percina evides*), blackside darter (*Percina maculata*), dusky darter (*Percina*

*sciera*), greenside darter (*Etheostoma blennioides*), rainbow darter (*Etheostoma caeruleum*), arrow darter (*Etheostoma sagitta*), speckled darter (*Etheostoma stigmaeum*), striped darter (*Etheostoma virgatum*), banded darter (*Etheostoma zonale*), and blue tilapia (*Oreochromis aureus*) (Meyer 1940, Meyer 1946; Meyer 1954, Harms 1959, White and Crisp 1973, Bauer and Branson 1975, Bauer 1976, Murray et al. 1977, Erickson 1978, Booth and Aliff 1979, Klemm 1982, Kozel and Whitaker 1982, Price and Nadolny 1993, Hoffman 1999).

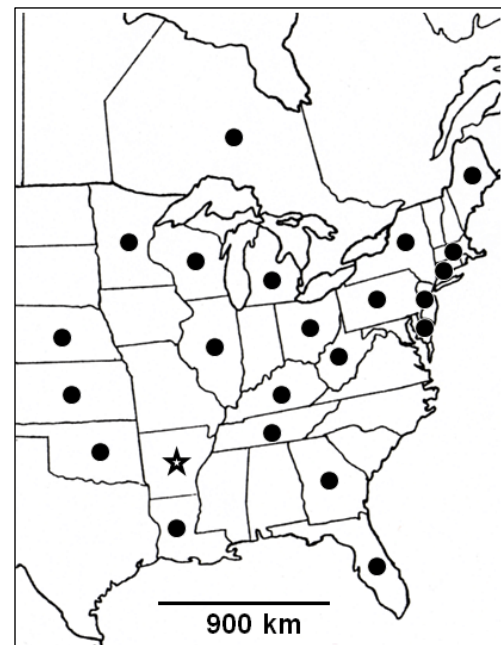


Figure 2. Records of *M. reducta* in fish hosts from 22 states of the U.S.A., and 1 province of Canada. Dots = previous records; star = new state record.

To our knowledge, *A. sayanus*, has not been previously reported to be infested with any leech species. Interestingly, *M. reducta* has been reported previously from the state; however, no specific data was provided (Klemm 1982, Moser et al. 2006, Richardson et al. 2012). Therefore, our specimens represent the first definitive record (with genuine vouchers) for Arkansas as well as new host records.

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## Literature Cited

- Bauer BH.** 1976. Notes on the leeches found parasitizing some perciform fishes in Tennessee. *Journal of the Tennessee Academy of Science* 51:9-10.
- Bauer BH and B Branson.** 1975. The leech *Piscicola reducta* parasitizing some percid fishes. *Transactions of the Kentucky Academy of Science* 36:18-19.
- Booth LC and JV Aliff.** 1979. Some metazoan parasites from north Georgia fishes. *Georgia Journal of Science* 36:147-152.
- Erickson JE.** 1978. Parasites of the banded darter, *Etheostoma zonale* (Pisces: Percidae). *Journal of Parasitology* 64:899.
- Harms CE.** 1959. Checklist of parasites of catfishes of north-eastern Kansas. *Transactions of the Kansas Academy of Science* 62:262.
- Hoffman GL.** 1999. Parasites of North American freshwater fishes, 2<sup>nd</sup> ed. Comstock Publishing Associates, Cornell University Press (Ithaca, NY). 539 p.
- Klemm DJ.** 1982. Leeches (Annelida: Hirudinea) of North America. EPA-600/3-82/025. U. S. EPA, Environmental Monitoring and Support Laboratory (Cincinnati, OH). 177 p.
- Klemm DJ.** 1985. Freshwater leeches (Annelida: Hirudinea). In Klemm DJ, editor. A guide to freshwater Annelida (Polychaeta, naidid and tubificid Oligochaeta, and Hirudinea) of North America. Dubuque: Kendall Hunt Publishing Co. 198 p.
- Kozel TR and FH Whittaker.** 1982. Ectoparasites of the rainbow darter, *Etheostoma caeruleum* Storer, from Harrods Creek, Oldham County, Kentucky. *Proceedings of the Helminthological Society of Washington* 49:138-139.
- Meyer MC.** 1940. A revision of the leeches (Piscicolidae) living on fresh-water fishes of North America. *Transactions of the American Microscopical Society* 59:354-376.
- Meyer MC.** 1946. Further notes on the leeches (Piscicolidae) living on fresh-water fishes of North America. *Transactions of the American Microscopical Society* 237-249.
- Meyer MC.** 1954. The larger animal parasites of the fresh-water fishes of Maine. State of Main, Department of Inland Fish and Game, Fisheries Research Management Division, Bulletin No. 1:1-88.
- McAllister CT, WE Moser and DJ Klemm.** 2011. *Actinobdella inequinannulata* (Annelida: Hirudinida: Rhynchobdellida: Glossiphoniidae) from white crappie, *Pomoxis annularis* (Perciformes: Centrarchidae), in Arkansas, U.S.A. *Comparative Parasitology* 78:392-394.
- Moser WE, DJ Klemm, DJ Richardson, BA Wheeler, SE Trauth and BA Daniels.** 2006. Leeches (Annelida: Hirudinida) of northern Arkansas. *Journal of the Arkansas Academy of Science* 60:84-95.
- Murray AB, WS Nance and DC Tarter.** 1977. The occurrence of the leech, *Piscicola reducta*, on *Etheostoma blennioides* from West Virginia. *Transactions of the American Microscopical Society* 96:412.
- Page LM and BM Burr.** 2011. Peterson field guide to freshwater fishes of North America north of Mexico. Second Ed. Houghton Mifflin Harcourt Publishing Company, New York. 663 p.
- Price WW and JV Nadolny.** 1993. *Piscicola reducta* (Hirudinea: Piscicolidae) from fishes in a subtropical Florida stream. *Journal of the Helminthological Society of Washington* 60:130-4.
- Richardson DJ, WE Moser, KE Richardson, CI Hammond and E Lazo-Wasem.** 2012. New host and geographic distribution records for the fish leeches *Placobdella translucens* (Sawyer and Shelley, 1976) and *Myzobdella reducta* (Meyer, 1940) (Hirudinida). *Comparative Parasitology* 79:293-297.
- Robison HW and TM Buchanan.** 1988. Fishes of Arkansas. University of Arkansas Press (Fayetteville). 536 p.
- White GG and NH Crisp.** 1973. The occurrence of four leeches (Hirudinea: Rhynchobdellida: Piscicolidae) on Kentucky River drainage fishes. *Transactions of the Kentucky Academy of Science* 34:47-48.
- Williams JI and EM Burreson.** 2005. *Gonimosobdella klemmi* n. gen. sp. (Hirudinida: Piscicolidae) from cyprinid fishes in Arkansas, Illinois, and Missouri, U.S.A. *Comparative Parasitology* 72:166-172.
- Williams JI and EM Burreson.** 2006. Phylogeny of the fish leeches (Oligochaeta, Hirudinida, Piscicolidae) based on nuclear and mitochondrial genes and morphology. *Zoologica Scripta* 35:627-639.