

Placobdella papillifera (Annelida: Hirudinida: Glossiphoniidae) Infesting the Stinkpot, *Sternotherus odoratus* (Testudines: Kinosternidae): New State Record for Oklahoma

Chris T. McAllister

Science and Mathematics Division, Eastern Oklahoma State College, Idabel, OK 74745

William E. Moser

Smithsonian Institution, National Museum of Natural History, Department of Invertebrate Zoology, Museum Support Center–MRC 534, 4210 Silver Hill Road, Suitland, MD 20746

Dennis J. Richardson

School of Biological Sciences, Quinnipiac University, 275 Mt. Carmel Avenue, Hamden, CT 06518

Charlotte I. Hammond

School of Biological Sciences, Quinnipiac University, 275 Mt. Carmel Avenue, Hamden, CT 06518

Little is known about the leeches of Oklahoma (Branson and Amos 1961; Harrel and Dorris 1968; Harrel 1969; Scalet, 1971; Elder and Sawyer 1975; Nagel 1976; Moser et al. 2011), especially those infesting turtles (Moser 1995). Klemm (1982; 1985) provided a synopsis on leeches of North America which included some information on those known from the state. Herein, we document a new state record for a glossiphoniid leech from southeastern Oklahoma.

On 2 September 2012, a single adult male stinkpot, *Sternotherus odoratus* was collected by hand off St. Hwy 259A on the Mountain Fork River bridge, Beavers Bend State Park, McCurtain County (34.137999°N, 94.687828°W). On closer examination, leeches were observed on the turtle and they were removed with forceps and rinsed in 0.6% saline and examined under a stereomicroscope. Some specimens were transferred to a vial containing 10% ethanol, gradually relaxed in increasing ethanol grades up to 70%, then transferred to 10% neutral buffered formalin. Others were treated in a similar manner but placed in 95% DNA grade ethanol for sequencing. Molecular

analyses were conducted on this material according to Richardson et al. (2010). Purified PCR products were sequenced using the HCO2198 primer and the LCO1490 primer for the Cytochrome c oxidase subunit I products by the W. M. Keck Foundation Biotechnology Resource Laboratory at Yale University. The DNA sequences were aligned using Clustal W version 2 (Larkin et al., 2007) and checked manually using SeaView 4 (Gouy et al., 2010) and then analyzed using PAUP* 4.0b10 (Swofford, 2002) and compared to other leech DNA sequences contained within Genbank. A voucher specimen of *S. odoratus* was deposited in the Arkansas State University Museum of Zoology as ASUMZ 32563. Voucher specimens of 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. (USNM 1225728) and the Peabody Museum of Natural History at Yale University (YPM IZ 67808–67809).

Fifteen leeches from *S. odoratus* were identified as juvenile *Placobdella papillifera* (Verrill, 1872) Moore, 1952. Molecular

comparison of 637 nucleotides of CO-I revealed differences of 1.7–1.9% (11 to 12 nucleotides) between *P. papillifera* collected from Oklahoma (GenBank KF771656) in this study and five specimens of *P. papillifera* (GenBank KC505241–KC505245) from its type locality (West River, New Haven, New Haven County, Connecticut). Ninety-eight percent similarity to specimens collected from the type locality further supports the identification of these specimens as *P. papillifera*. *Placobdella papillifera* was recently redescribed by Moser et al. (2013) and has been previously reported from *S. odoratus* (Sawyer, 1972). *Placobdella papillifera* is widely distributed throughout North America, including sites in Arkansas, Connecticut, Louisiana, Massachusetts, Mississippi, New Hampshire, New York and Texas (Klemm 1985; Chordas et al. 1996; Moser et al. 2006) (Figure 1). It is a temporary blood-feeding leech on reptiles. Other reported hosts include eastern painted turtles (*Chrysemys*

picta), common snapping turtles (*Chelydra serpentina*), American alligators, (*Alligator mississippiensis*), southern watersnakes (*Nerodia fasciata*), and even humans (*Homo sapiens*); however, the species is typically free-living (Smith et al. 1976; Klemm 1985; Sawyer 1986; Krysko et al. 2012; Moser et al. 2013).

In conclusion, we provide a new state record for a leech in Oklahoma. Additional surveys will surely add more species to the list of those currently found in the state.

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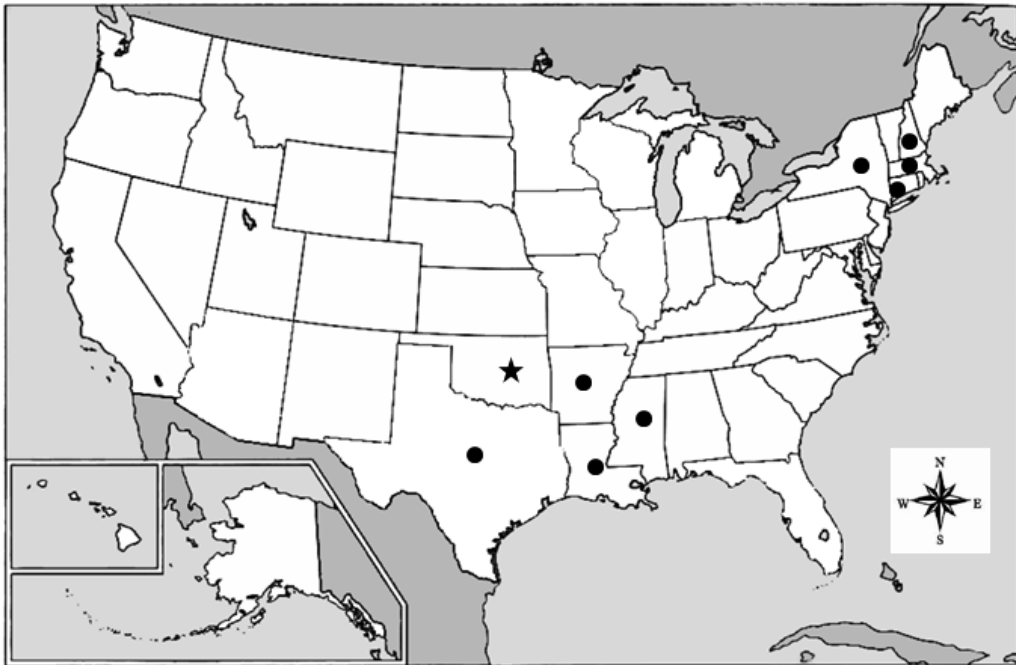


Figure 1. States where *Placobdella papillifera* have been reported in the USA. Dots = previous records; star = new record.

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