NEW FRESH-WATER CLAM HOST RECORDS FOR THE LEECHES *PLACOBDELLA MONTIFERA* MOORE AND *HELOBDELLA STARNALIS* L.

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ABSTRACT. *Two new clam (Mollusca: Bivalvia: Unionidae) hosts* Anodonta suborbiculata *Say and* Lampsilis hydiana *(Lea) for the leech* Placobdella montifera *Moore (Annelida: Hirudinea: Glossiphoniidae) and the first specified clam host* Plectomerus dombeyanus *(Valenciennes) (Mollusca: Bivalvia: Unionidae) for the leech* Helobdella stagnalis *L. (Annelida: Hirudinea: Glossiphoniidae) are reported. Specimens were collected west of the Mississippi River in Louisiana. Distributional data are included.*

INTRODUCTION

Several recent studies include comprehensive reviews of leech-clam relationships (1, 2, 3, 4). However, as indicated by Curry and Vidrine (1), knowledge of fresh-water leech-clam relationships is still meager and needs additional records which include specific identifications, ecological and distributional data and observations of leech malacophagous behavior.

Nine species of fresh-water clams have been previously reported to contain one or more individuals of the leech *Placobdella montifera* Moore within their mantle cavities (1, 5). Reports of specific host species (10 species of fishes and one species of turtle) for *P. montifera* were reviewed by Curry and Vidrine (1).

The leech *Helobdella stagnalis* L. has never been reported from a specific clam. Many studies, however, including the several cited here (2, 6, 7, 8, 9, 10, 11, 12, 13), list various food organisms for *H. stagnalis*: insect larvae, oligochaetes, snails and amphipods. Questionable hosts reported include other leeches, fishes, frogs and mammals (9, 13).

RESULTS AND DISCUSSION

From April, 1976 through July, 1976, new clam hosts were discovered for the leeches *P. montifera* and *H. stagnalis*. *Placobdella montifera* was recovered from the mantle cavities of *Anodonta sub-*

orbiculata Say and *Lampsilis hydiana* (Lea). Of 70 specimens of *L. hydiana* examined from one locality, only 2 clams contained leeches, one individual each of *P. montifera*. One *P. montifera* carrying more than 50 young on its ventral surface was recovered from one of 6 specimens of *L. hydiana* from a second locality. In addition, of 4 specimens of *A. suborbiculata*, 3 yielded one *P. montifera* each. These records are the first for these leech-clam relationships.

One *Placobdella montifera* was also recovered from one of 23 specimens of *Proptera purpurata* (Lamarck); one, from one of 40 specimens of *Anodonta grandis* Say. Both clams have been previously reported to contain *P. montifera* concurrently with several unionicolid water mites (1). However, the locality data represent new collection sites for each leech-clam association.

One specimen of *H. stagnalis* was found between the gills of *Plectomerus dombeyanus*. Nine clams of that species from one locality were examined. This report is the first record of this specific leech-clam relationship. *Plectomerus dombeyanus* has also been reported to harbor *P. montifera* (1).

Host records and collection data are as follow.

A. grandis and *P. montifera*: Iberville Parish, Ramah Canal, 1 mi south of I-10 (29 April 1976) and 5 mi south of I-10 (26 May 1976).

A. suborbiculata and *P. montifera*: St. Martin Parish, Henderson Swamp, Atchafalaya Basin about 5 mi southeast of Henderson (12 June 1976).

L. hydiana and *P. montifera*: Red River and DeSoto Parishes, parish line, Bayou Pierre at U.S. Hwy. 84 (25 April 1976); Allen Parish, Calcasieu River at U.S. Hwy. 190, west of Kinder (3 July 1976).

P. dombeyanus and *H. stagnalis*: Evangeline and Rapides Parishes, parish line, Bayou Cocodrie at U.S. Hwy. 167 north of Turkey Creek (11 October 1976).

P. purpurata and *P. montifera*: Iberville Parish, Ramah Canal, 1 mi south of I-10 (29 April 1976).

The morphology of the leeches was identical to that of free-living members of the species collected from other Louisiana habitats. The morphology of the leeches was also consistent with that described by Sawyer (9) for the species. All specimens of *P. montifera* were characterized by 3 prominent dorsal ridges of papillae and were, therefore, not confused with the newly described *Placobdella nuchalis* Sawyer and Shelley (14), which lacks the dorsal ridges. The classification system for the clams follows that of Ortmann (15, 16, 17). All leeches and clams have previously been reported from Louisiana (18, 19, 20, 21).

This study corroborates the suggestion of a previous study (1) that there are no correlations between the incidence of leech infestation

of unionid clams with the time of the year or the brooding behavior of the leeches. Of the specified leech-clam relationships thus far observed, all involved the same species of leech (*P. montifera*), except one *H. stagnalis* occurring in *P. dombeyanus*. It seems, therefore, that if the leech-clam relationship is of purely chance occurrence, than other species of leeches which are equally numerous as *P. montifera* in a habitat should also be found in association with the clams with a similar frequency. It should be noted that most leeches recovered from the clams were engorged. However, that the leeches are actually feeding on the clams is still uncertain without additional observations and detailed digestive tract analyses.

Voucher specimens of each species of clam are deposited in the Delaware Museum of Natural History, Greenville; the Academy of Natural Sciences, Philadelphia, Pennsylvania; or in the private collection of the second author in Lafayette, Louisiana. Leeches are in the private collection of the first author in Metairie, Louisiana.

References and Notes

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