

First record of *Helobdella hyalina* (Hirudinea; Glossiphoniidae) in the mantle cavity of Planorbidae from lentic environments in a Buenos Aires province, Argentina

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1. Introduction

Biomphalaria peregrina (D'Orbigny, 1835) and *Drepanotrema kermatoides* (D'Orbigny, 1835) were first reported as hosts of *Helobdella hyalina* Ringuélet, 1942. Both are important species from the Río de La Plata river basin in Argentina. They are associated with macrophytes of lentic or semilentic environments. They are more frequently observed in semipermanent low-depth environments with vegetation and abundant organic matter (Bonetto et al., 1990).

Freshwater gastropods provide a suitable microhabitat for a wide range of organisms to settle: algae, protozoans, plathyhelminthes, nematodes, rotifera, oligochaetes, hirudinea, diptera: chironomids and acari (Di Persia and Radici de Cura, 1973).

Several species of hirudinea Glossiphoniidae are, occasionally or permanently, present in these mollusks having trophic and non - trophic relationships with them (Ringuélet, 1985).

Helobdella Blanchard, 1896 comprises the largest number of species in the Neotropical region and in Argentina including 21 species and subspecies (Ringuélet, 1943; 1944a; 1944b; 1945). Apparently, the centre distribution is in South America. They feed on mollusks, insect larvae and oligochaetes.

Sarah (1971) cited the leech *H. lineata* associated with *Helisoma trivolvis* (Say, 1817) and *Helisoma anceps* (Menke, 1830), though the author failed to find them in the mantle cavity.

Klemm (1975a; 1975b; 1976) mentions that two genus of Glossiphoniidae from North America, *Glossiphonia* and *Helobdella*, include species that are associated with mollusks and with other invertebrates. For *H. lineata* (Verrill, 1874), the author cited *Australorbis glabratus*, *Helisoma anceps*, *H. campanulatum*, *H. trivolvis* (Planorbidae), *Lymnaea stagnalis* and *Stagnicola reflexa* (Lymnaeidae), *Physa gyrina*, *P. integra*, *P. parkeri* (Physiidae); in Bivalvia, he mentions *Pisidium virginicum* as a possible host. On the other hand, *H. papillata*, a North American species, is associated with the following gastropods: *Helisoma anceps*,

H. campanulatum, *H. trivolvis* (Planorbidae); *P. parkeri* (Physiidae) and *Stagnicola elodes*, *Bulinmnea megasoma* (Lymnaeidae). *H. punctatilineata* Moore, 1939, a species distributed in Puerto Rico, the Dominican Republic and the United States was found in *Australorbis glabratus*, *Planorbis corneus* (Planorbidae) and *Stenophysa marmorata* (Physiidae). With a cosmopolitan distribution except for Australia, *H. stagnalis* (Linnaeus, 1758) is associated with *Physa gyrina*, *P. integra* (Physiidae); *Planorbis albus* (Planorbidae); *Pisidium* sp. and *Sphaerium transversum* (Bivalvia; Sphaeriidae).

Ringuélet (1985) cited several leeches associated with mollusks, among them the author mentions *H. adiastrum* Ringuélet, 1972 (*Diplodon hylaeus* and *P. insularum*) and *H. lineata* (*P. canaliculata* and *Diplodon delodontus*). *Helobdella ampullariae* Ringuélet, 1945 is the only hirudinea, which is permanently associated with the mantle cavity of *Pomella* (*Pomella*) *megastoma* Gray, 1947.

Damborenea and Gullo (1996) found six species of hirudinea in the mantle cavity of *P. canaliculata*; among the species present, *H. ampullariae* proved to be the dominant species, followed by *H. triserialis nigricans* Ringuélet, 1968, *H. simplex* (Moore, 1911), *H. adiastrum*, Ringuélet, 1972, *H. lineata* and *H. michaelseni*, Blanchard, 1900. *H. ampullariae* is permanently associated with the mantle cavity of *P. canaliculata*.

2. Materials and Methods

Specimens of *Biomphalaria peregrina* and *Drepanotrema kermatoides* (Planorbidae) were collected in permanently inundated areas or in those which are subjected to periodic inundations near the Lujan river, in the Reserva de Uso Multiple Otamendi (34° 17' S and 58° 53' W), Campana, Buenos Aires, Argentina.

Sampling was carried out during October, 2002 in the inundated areas where the espartillar community is composed of the totally dominant species *Spartina densiflora*, and aquatic vegetation such as *Bacopa monnieri* and *Ludwigia peploides*.

Planorbidae were anaesthetised with 0.01 g Nembutal and then fixed in phormol 5%. The hirudinea found in the mantle cavity were separated and assigned a specific level, determining if they were carrying eggs or young.

3. Results

Two hundred and sixty one specimens of *D. kermatoides* were examined, only one of them had a specimen of *H. hyalina* (prevalence: 0.38%). In addition, two hundred and twelve specimens of *B. peregrina* were analysed revealing 6 specimens of *H. hyalina* (prevalence: 2.35%); in only one case, two specimens of *H. hyalina* were found in only one snail.

4. Conclusion and Discussion

Helobdella hyalina has a specialised type of leech predation in which a proboscis sucks up body fluids and soft parts of an invertebrate prey organism.

Many of the most common glossiphoniid leeches, such as *Glossiphonia complanata* and *Helobdella stagnalis*, are liquidostomatophagous, and feed exclusively upon small benthic invertebrates, primarily small oligochaetes, chironomid larvae and mollusks (Sawyer, 1986).

H. hyalina appears to be an opportunistic species that have a trophic relationship with its host this is corroborated by the small number of hosts with leeches. This would suggest that the diet of *H. hyalina* is based on a variety of food items, including planorbids.

Further surveys must be carried out in order to determine if this kind of relationship is temporary or permanent and to establish if this relationship is exclusively trophic.

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