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A record of the South American leech *Helobdella triserialis* (Hirudinea: Glossiphoniidae) from an aquarium in Kharkiv, Ukraine

Serge Utevsky and Gleb Mazepa

With 2 figures

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The South American leech *Helobdella triserialis* was found in an aquarium in Kharkiv, Ukraine. The examined leeches have branched crop caeca and two transverse interruptions of paramedian stripes at the anterior end. *H. triserialis* feeds on various freshwater invertebrates and tolerates low temperature.

1 Introduction

The majority of the described species of the genus *Helobdella* R. Blanchard, 1896 occur in North and South America (Sawyer 1986, Siddall & Borda 2003). In contrast to its congeners, *Helobdella stagnalis* (Linnaeus, 1758) is one of the most common freshwater leeches in the world (Sawyer 1986). It has been found that more than one species of *Helobdella* occurs in Europe. *Helobdella europaea* (Kutschera, 1987) was discovered in streams, ponds, and aquaria in Germany to which it was imported presumably from Australia (Kutschera 1985 and 1987, Pfeiffer et al. 2004). Nesemann & Neubert (1999) called the specific status of *H. europaea* into question. These workers assigned *H. europaea* to the South American species *Helobdella triserialis* (Blanchard, 1849). A recent phylogenetic analysis based on mitochondrial DNA sequences again suggested that these leeches are not identical (Pfeiffer et al. 2004).

This study deals with leeches found in a private aquarium in Kharkiv, Ukraine and identified as *Helobdella triserialis* sensu Siddall & Borda (2003).

2 Material and Methods

In the middle of 2002 for the first time and on 19 September 2003 for the second time, 8 and 17 glossiphoniids, respectively, were found in the 100-liter freshwater aquarium belonging to Gleb Mazepa. Thereafter the leeches were kept in a separate 3-liter jar. Both external and internal characters were exam-

ined microscopically. Four specimens of *H. europaea* preserved in ethanol from an aquarium of the Berlin Zoo were compared with our leeches.

3 Results and Discussion

The adult individuals are up to 12 mm long. There is one pair of eyes. The dorsal surface is covered by 5 longitudinal rows of black-tipped papillae. The outermost rows frequently consist of poorly developed papillae. There are small colourless papillae situated close to black-tipped ones. The body colour of living leeches is light yellow. The coloration pattern is very complex. There are one pair of dark paramedian stripes and four pairs of lighter stripes. Most of examined specimens have two transverse interruptions of the dark paramedian stripes at the anterior end (Fig 1, 2A). In larger individuals, the transverse interruptions are not well discernible. There are 6 pairs of branched crop caeca. The first pair is vestigial (Fig. 2C).

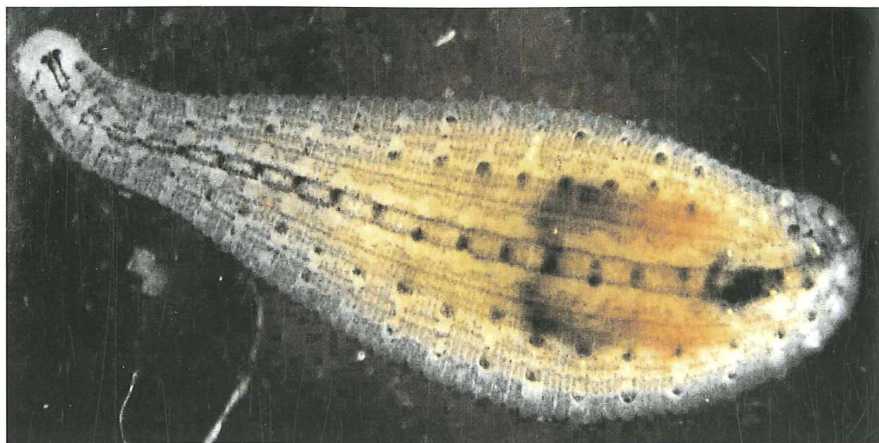


Fig. 1: Photograph of *Helobdella triserialis* from Ukraine

We observed that the leeches attacked various invertebrates and sucked off their body fluids. Their preys include tubificids, larger leeches such as *Hirudo verbana*, freshwater gastropods, and chironomid larvae. It was found that the leeches could tolerate a temperature as low as 6 °C for 10 hours. The optimum temperature seems to be 20–25 °C. The leeches carry up to 25 young individuals on their ventral sides and feed their offspring with captured prey.

The leeches studied should be assigned to the South American species *H. triserialis*. Recently Siddall & Borda (2003) have considered the synonymy, distinguishing features, and phylogenetic relationships of this leech. Our leeches

match the characterization of *H. triserialis* with three longitudinal rows of black-tipped papillae and two transverse interruptions of the dark paramedian stripes at the anterior end. In contrast to *H. triserialis* from Ukraine, *H. europaea* has smooth crop caeca. Two transverse interruptions of paramedian stripes are absent or poorly discernible in *H. europaea* (Fig. 2B) (Kutschera 1985 and our observations).

American *Helobdella* species have been already recorded from localities far from their natural ranges: aquaria and a garden pond in Israel (Mienis 1986) and the Nile system to which it has been introduced by human activities (Nesemann & Neubert 1999). We suggest that *H. triserialis* was unintentionally imported to Ukraine from South America with aquarium fishes and plants. *H. triserialis* appears to be able to invade natural freshwater ecosystems in Europe as it can tolerate low temperatures.

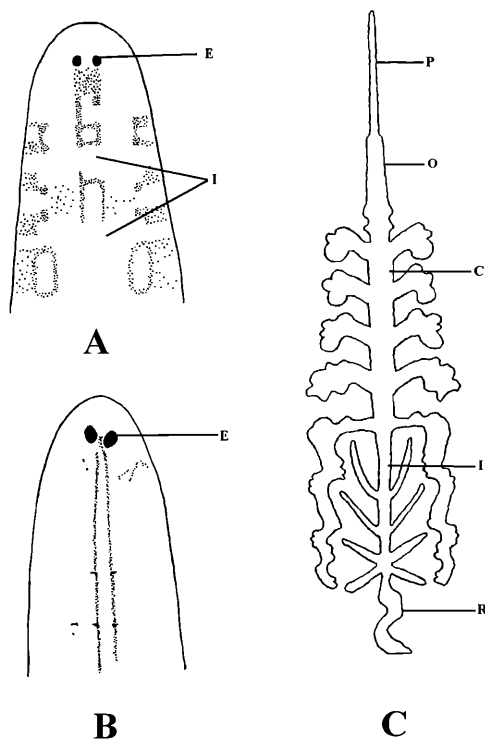


Fig. 2: Distinguishing features of *Helobdella triserialis* and *Helobdella europaea*. A. Anterior end of *H. triserialis* (E = eye, I = transverse interruptions of paramedian stripes). B. Anterior end of *H. europaea* (E = eye). C. Digestive system of *H. triserialis* (C = crop, I = intestine, O = oesophagus, P = proboscis, R = rectum)

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Address of the authors: Dr. Serge Utevsky and Gleb Mazepa Department of Zoology and Animal Ecology, V.N. Karazin Kharkiv National University, Pl. Svobody 4, Kharkiv 61077, Ukraine

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Autor(en)/Author(s): Utevsky Serge, Mazepa Glib

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