

Placobdella costata (Fr. Müller, 1846) (Hirudinea: Glossiphoniidae), a leech species new for Slovenia

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Abstract. The glossiphoniid leech *Placobdella costata* was confirmed in 2006 for the first time in Slovenia at a complex of fish ponds named 'Draga pri Igu' some 10 km south of Ljubljana (Central Slovenia). Up to 15 leeches were found attached to European pond turtles (*Emys orbicularis*), the main host species.

Keywords: *Placobdella costata*, European pond turtle, *Emys orbicularis*, Slovenia

Izveček. ŽELVJA PIJAVKA PLACOBDELLA COSTATA (FR. MÜLLER, 1846) (HIRUDINEA: GLOSSIPHONIIDAE), NOVA VRSTA PIJAVKE ZA SLOVENIJO – Želvja pijavka *Placobdella costata* je bila leta 2006 prvič najdena v Sloveniji v kompleksu ribnikov Draga pri Igu, približno 10 km južno od Ljubljane. Na ujetih močvirskih sklednicah (*Emys orbicularis*), ki so glavni gostitelji, je bilo pritrjenih do 15 pijavk.

Ključne besede: *Placobdella costata*, močvirska sklednica, *Emys orbicularis*, Draga pri Igu, Slovenija

Introduction

The freshwater rhynchobdellid leech *Placobdella costata* is usually considered a Mediterranean species that has spread over large parts of Central and Eastern Europe, reaching as far to the southeast as the southern Arabian Peninsula (Nesemann & Neubert 1999). It is known for its haematophagous ectoparasitic feeding on freshwater turtles, in Europe mainly on *Emys orbicularis*. So far, the species has not been recorded in Slovenia (Sket 1968, 1996), although its discovery has been anticipated owing to a number of records from nearby countries, e.g. Croatia – Istra (Sket 1968), Hungary (Nesemann 1997), Germany

(Grosser 1998). Despite some attention devoted to the European pond turtle in recent years (e.g. Cafuta 2002, Govedič & Janžekovič 2003, Tome 2003), no associations of leeches and turtles have been documented.

Description of the find

Since March 2006, the first author of this article has been involved in field studies of the European pond turtle (*Emys orbicularis*) in an artificial fish pond complex named Draga pri Igu (Fig. 1), situated close to the small town of Igu, approximately 10 kilometres south of Ljubljana (central Slovenia). The fish ponds were established in the 18th century in an old clay pit area. The complex comprises seven small to medium-sized ponds, measuring approximately 15 hectares in total. The bottom and banks are mostly loamy, partly overgrown by reed and other emergent vegetation. A part of the studies covers trapping of pond turtles for radiotelemetric tracking and mark-recapture analysis. Examination of the trapped turtles has led to the first discovery of *Placobdella costata* in Slovenia. The first leech was found on a male's plastron on 15 May 2006 (Fig. 2). Leeches found on two turtles caught on 31 August 2006 were removed and taken to the lab for determination. They are deposited at the Zoological collection of the Department of Biology, Biotechnical Faculty, University of Ljubljana.



Figure 1: The site of the first record of the leech *Placobdella costata* in Slovenia, 'Draga pri Igu' fish ponds (photo: M. Hočevar).

Slika 1: Prvo najdišče želvje pijavke (*Placobdella costata*) v Sloveniji, Draga pri Igu, Veliki ribnik (foto M. Hočevar).



Figure 2: *Placobdella costata* on the plastron of the European pond turtle *Emys orbicularis* found at Draga pri Igu on 15 May 2006 (photo M. Hočevar).

Slika 2: *Placobdella costata* na plastronu močvirske sklednice, najdene v Dragi pri Igu dne 15.05.2006 (foto M. Hočevar).

As many as 15 leeches were found on an injured part of the plastron of a single female turtle (Table 1). All leeches displayed a distinctive bright median dorsal stripe interrupted by four dark sections in the midbody region (Fig. 3). Their ground colour was brown. After fixation with 70% ethanol, two paramedian rows of large, light-coloured papillae became visible. The leeches seemed to differ in their age, or at least in their nutritional condition, as they ranged in size from about one half to two centimetres.

Table 1: Biometric data of *Emys orbicularis* infected by *Placobdella costata*. Measurements are according to Fritz (1995).

Date	Sex	Carapace length [mm]	Carapace width [mm]	Body mass [kg]	No. of leeches
15 May 2006	male	147	92	0.32	3
15 May 2006	male	136	109	0.41	1
31 Aug 2006	female	168	117	0.78	15
31 Aug 2006	male	118	90	0.32	5

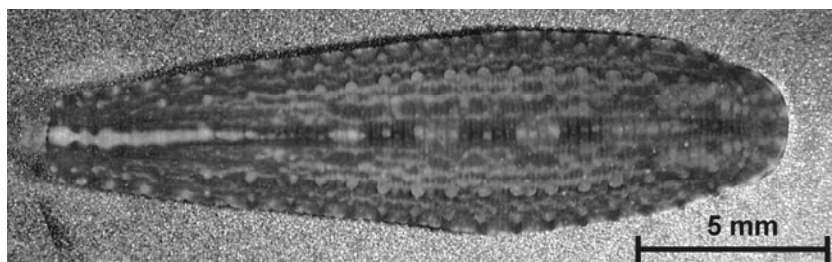


Figure 3: One of the specimens of *Placobdella costata* collected on *Emys orbicularis* at Draga pri Igu on 31 August 2006 (photo C. Fišer).

Slika 3: Eden izmed primerkov *Placobdella costata*, pobranih z močvirske sklednice iz Drage pri Igu dne 31.8.2006 (foto C. Fišer).

Discussion

At the beginning of this millennium, 23 species of leeches were known from Slovenia (Sket 2003). No substantial changes to the Slovenian leech-checklist list were expected at that time. However, only four years after this list has been published, we can assign *Placobdella costata* a tentative number 27. A yet greater increase can be expected once the fish leech (Piscicolidae) fauna is studied under consideration of the taxonomic novelties introduced by Bielecki (1997).

An interesting faunistic question that follows is whether the discovered leeches are newcomers or merely representatives of an overlooked population present here for a long time. Both possibilities are supported by some lines of evidence. The newcomers hypothesis finds support in several recent new discoveries of the species in Central Europe (e.g. Zimmermann 1989, Grosser 1998, Biegel & Grosser 2004). Moreover, it appears that the leech is much more mobile than its host since it is regularly found far outside the range of turtles, which might be possibly explained by occasional switches to more itinerant hosts like beaver (*Castor fiber*) or waterfowl (e.g. Biegel & Grosser 2004, van Haaren et al. 2004). It should be noted that the 'Draga pri Igu' ponds are directly connected to a wider wetland area called Ljubljansko barje, where nutria (*Myocastor coipus*) and muskrat (*Ondatra zibethicus*) abound. On the other hand, the area of Ljubljansko barje was once known for its high numbers of pond turtles, and several decades ago turtles from southeastern regions of the former Yugoslavia were imported (Tome 2003). It seems unlikely that all these turtles had never been parasitized by *Placobdella costata*. The discovery of additional populations in other parts of

Ljubljansko barje or Slovenia would lend credence to the notion that this leech has been around for a longer time.

New or old, there are at least two indications that *Placobdella costata* forms a permanent, reproducing population at the fish ponds of 'Draga pri Igu'. Most important, there is a good population of its primary host, the European pond turtle. Second, leeches of several size classes and possibly different ages were found together on a single turtle.

Povzetek

Sladkovodna želvja pijavka (*Placobdella costata*) velja za cirkummediteransko vrsto, ki je razširjena tudi drugod po srednji in vzhodni Evropi. Kot krvoseša, ektoparazitska pijavka največkrat parazitira na močvirskih sklednicah (*Emys orbicularis*). V Sloveniji še ni bila odkrita, a je bila njena najdba pričakovana glede na številne podatke iz okoliških držav. V okviru raziskave močvirskih sklednic v ribnikih v Dragi pri Igu je bilo ujetih, pregledanih in biometrično obdelanih več želv. Štiri med njimi so imele na sebi želvje pijavke. Največ, 15, jih je bilo 31.8.2006 na samici s 168 mm dolgim karapaksom, katere plastron je bil lažje poškodovan. Želvje pijavke v ribnikih v Dragi pri Igu verjetno oblikujejo večjo, stalno populacijo, ker je v ribnikih precej želv, njihovih glavnih gostiteljev, in ker smo zasledili pijavke različnih velikostnih ter domnevno tudi starostnih razredov. S to najdbo je seznam slovenskih pijavk narasel na 27 vrst.

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