Short communication

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First Record of *Branchiobdella kozarovi* Subchev, 1978 from European Part of Turkey

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Abstract: Many branchiobdellid worms were observed on the narrow-clawed crayfish, *Astacus leptodactylus* Eschscholtz, 1823, from İpsala-Yenikarpuzlu Pond (Turkey, Edirne Region). A total of 53 branchiiobdellidans were found on the walking legs and the gills of eight crayfish individualsspecimen. They were identified as *Branchiobdella kozarovi* Subchev, 1978. This is the first report of branchiobdellidans and *B. kozarovi* in particular, from the European part of Turkey.

Key Words: *Branchiobdella kozarovi*, European Part of Turkey, *Astacus leptodactylus*

Introduction

Branchiobdellidans known also as crayfish worms, are leech-like clitellate annelids. They are have an ectosymbiotic life, thriving on the astacoidean crayfish (Govedich *et al.* 2010), and a Holarctic distribution (Gelder 1999). According to Gelder & Brinkhurst (1990), this taxon forms a monophyly consisting of an order with one family including 150 species described so far (Gelder & Ohtaka 2000). To date, only one species of the Branchiobdellida, *Branchiobdella kozarovi* Subchev, 1978, has been reported from Turkey in localities situated in its Asian part (Subchev 2008, 2012, Subchev & Gelder 2010). Here we report on the first finding of branchiobdellidans and *Branchiobdella kozarovi* in particular, from the European part of Turkey.

Materials and Methods

Astacus leptodactylus Eschscholtz, 1823 crayfishes were caught in İpsala-Yenikarpuzlu Pond, Edirne Region, Turkey (Fig. 1) on 14th December, 2014. The origin of this introduced population of *A. leptodactylus* is not known. The collected crayfishes were examined for Branchiobdellida other ectosymbionts. A total of eight crayfishes were studied and 53 branchiobdellid worms were found on them. All branchiobdellidans detected were removed from the crayfish body and then put into lab-grade ethanol (70%). The specimens were infiltrated with glycerine and examined using a stereoscopic microscope (Olympus SZX7). The identification was based on external morphological characters, the structure of jaws and the anatomy of the reproductive system (Kolesnikova *et al*. 2008).

Result and Discussion

All 53 branchiobdellid worms found were identified as *Branchiobdella kozarovi*. Eight of the worms were found attached on the gill tissues and the rest were located at the basis of the crayfish pereiopods.

The first report of *B. kozarovi* from Turkey was that of Subchev (2008) who found a poorly preserved specimen of this species in a crayfish sample from the eutrophic Lake Uluabat located in the Marmara Region, Northwest of the Anatolia, in the French National Museum of Natural History crayfish collection. After that, Subchev & Gelder (2010) was able to give more precise information about the branchiobdellid fauna for this country by reporting *B. kozarovi* from two Turkish localities, both located in western part of Asian side of Turkey: Lake Sapanca and a location near

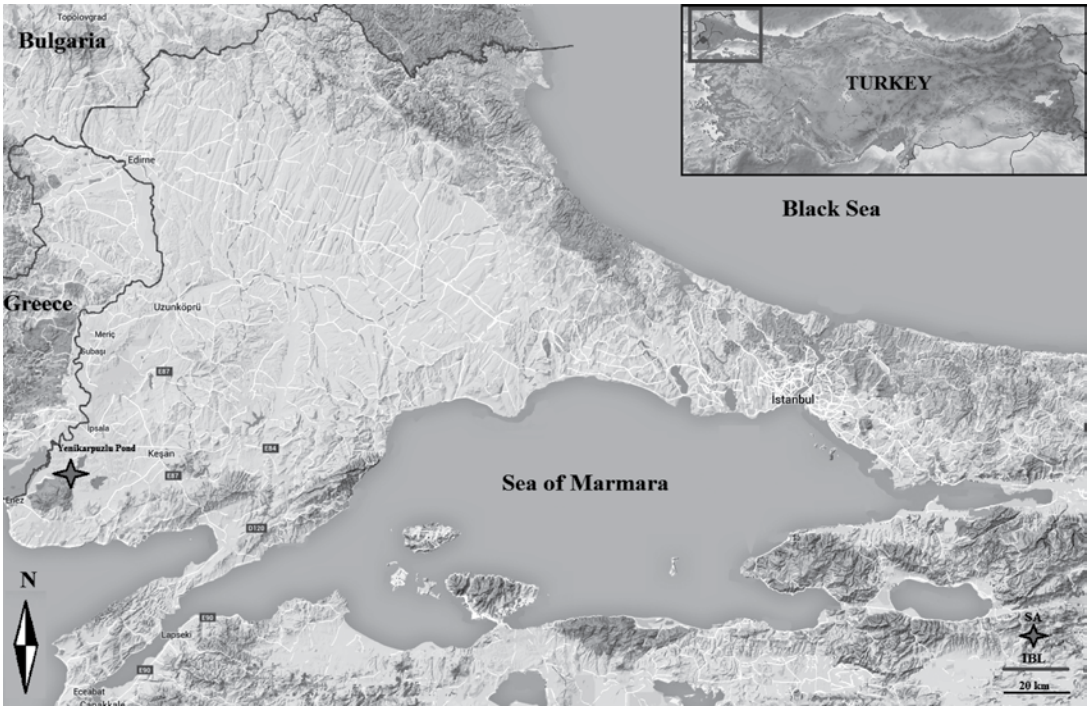

Fig. 1. Location of Yenikarpuzlu Pond and the sampling site. Legend: SA: Sampling Area, IBL: International Borderlines, N: North

Bursa. Another six localities of *B. kozarovi* in Asian Turkey were reported by Subchev (2012). Considering specimens of *B. kozarovi* obtained from *A. leptodactylus* from Turkey (Subchev 2008, 2012, Subchev & Gelder 2010), this species can be stated as a native to Western Anatolia. *Branchiobdella kozarovi* has been reported also from other regions in Europe and Asia: Asian Turkey, Georgia, Bulgaria, Ukraine, Poland, the Netherlands, Armenia, Kazakhstan, Western Russia and Iran (Fard & Gelder 2011, Subchev 2014). Most of these records were from the areas within the original distribution area of its primary host *A. leptodactylus* (Souty-Grosset *et al.* 2006). The association of *B. kozarovi* with *A. leptodactylus* appears to be endemic to the Eastern Euro-Mediterranean subregion and around the Black Sea (Bânârescu 1990). Our finding reported here is the first report of branchiobdellidans and *B. kozarovi* in particular, from the European part of Turkey.

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