Ecologica Montenegrina
ISSN 2336-9744 (online) | ISSN 2337-0173 (print)

Ecologica Montenegrina 19: 69-72 (2018)
This journal is available online at: www.biotaxa.org/em

Article

Monster from the Vault: a new finding of one of the largest European leech *Trocheta haskonis* Grosser, 2000 from Bosnia and Herzegovina

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Received 27 September 2018 | Accepted by *V. Pešić*: 10 October 2018 | Published online 17 October 2018.

Abstract
One extremely large leech specimen of *Trocheta haskonis* Grosser, 2000, reaching almost 190 mm when contracted, was collected in an underground vault constructed out of concrete in the village Prijakovci in the north-western part of Bosnia and Herzegovina. This finding indicates that one of the largest European leech species can colonize also small artificial habitats like a utility vaults, possible also subway tunnels and storm drains.

Key words: *Trocheta haskonis*, first record, Bosnia and Herzegovina, utility vault.

Introduction

Trocheta haskonis Grosser, 2000, is one of the largest European leech species discovered so far. This species was originally described from the flood plains along the river Elbe in Germany (Grosser 2000). Since then this species was recorded from one locality in Austria (Erbsbach, Wienna Woods) and from one cave in Eastern Serbia (Grosser 2013). Feeding behavior and reproductive biology of *Trocheta haskonis* was studied by Grosser & Kutschera (2004) who found this species to be a terrestrial predator that feeds on earthworms.

This study addresses the finding of *Trocheta haskonis* in one unusual habitat filling gap in our knowledge of the geographical distribution of this species.

Material and Methods

Material examined. One specimen, Bosnia and Herzegovina, Banja Luka, village Prijakovci, a utility vault near the house of the second author, 44°52'17.30"N, 17°9'1.26"E, 203 m asl., 31.iii.2018.

The leech was collected by the second author (GŠ) from the concrete and preserved in 70 % ethanol. The size was measured with a ruler. The specimen is deposited in the private collection of Clemens Grosser (Elstertrebnitz, Germany).

Results

External characters of the specimen examined from Banja Luka are in agreement with the previous description of *T. haskonis* by Grosser (2000, 2013). Our specimen was extremely large, the total length including suckers was 188 mm, and the maximum body width was 17 mm in preserved condition.

The leech is without stripes, lines or spots; the coloration of living leeches is reddish to dark gray. The annulation of the specimen from Banja Luka conform well the original description of the species (Grosser 2000): two broadened annuli (b2, a2 in the description) follows seven narrow annuli (c9, c10, c11, d23, d24, c1, c2). The genital pores situated in the furrows, male genital pore in the furrow b2/a2 and the female genital pore in the furrow c10/c11; the annulus a2 in our specimen slightly subdivided in the annuli b3, b4 and therefore the genital pores separated by four narrow annuli. The accessory pores typical of *T. haskonis* located left and right of the male genital pore.

Figure 1. Adult *Trocheta haskonis* Grosser, 2000 from Banja Luka. A-B Living specimens; C-D Sampling site: utility vault near in the village Prijakovci, Banja Luka, photographed in summer 2018. Photos by G. Šukalo.

Discussion

Morphological analysis showed that the leech sampled in the village Prijakovci near Banja Luka in the north-western part of Bosnia should be assigned to *Trocheta haskonis*. It's worth to mention that further analyses

dealing with more samples and application of molecular techniques are necessary to reveal intraspecific variability within *Trocheta haskonis*.

Grosser and Kutschera (2004) mentioned that mature contracted leeches of *Trocheta haskonis* are 80-120 mm long but capable of extension up to 220 mm. Our specimen was contracted 188 mm long, and possibly is one of the largest leech specimen collected in Europe. Based on the available literature, *Trocheta danastrica* Stschegolew, 1938 is considered as the largest European leech species. Nesemann (1997) collected a single specimen which extended in life up to 280 mm. The both species, *Trocheta haskonis* and *T. danastrica* can rich a body length of 200 to 220 mm, sometimes to 250 mm in *T. danastrica* (see Grosser and Epshtein 2009).

Grosser and Kutschera (2004) who studied biology of *Trocheta haskonis* stated that adults probably spent a part of year in the most soil where apparently forage for earthworms (Figure 2). All sites where *Trocheta haskonis* was collected display extreme variations in the water level (Grosser 2013). As already mentioned by Grosser and Kutschera (2004) it's likely that this species survive the dry season burrowing deeply into the soil. Grosser (2013) mentioned that he found leeches in the moist soil of dried puddle along of the River Elbe at a depth of 0.3 to 0.4 m. On the other hand, the locality in Serbia where *Trocheta haskonis* was collected was a small lime stone pond in a cave at the depth of 100 m; the leeches were found in a thick layer of foliage outside of the water (Grosser 2013).

Figure 2. Adult *Trocheta haskonis* from the *locus typicus* and its earth-worm prey. Photo by C. Grosser.

The site in Bosnia where our leech is collected was an underground vault constructed out of concrete and entered through a manhole on the topside (Fig. 1C-D). The vault is located about 250 meters from the nearby stream. The leech was collected with many earthworms and their fragments. Therefore it's likely that leech was attracted by the prey probably using water pipes to access the site. Our finding indicates that *Ttrocheta haskonis* can colonize also small artificial habitats like a utility vaults, possible also subway tunnels and storm drains.

A finding of *Trocheta haskonis* in Bosnia and Herzegovina fill the gaps in distribution of this species from Germany to Serbia. Several studies indicate that ranges of a number of Central European leech species extend more easterly then considered before. For example, Grosser and Pešić (2006a) reported *Haemopis elegans* Moquin-Tandon, 1846 from South Serbia and *Batracobdelloides moogi* Nesemann & Csányi, 1995 has been recorded from Montenegro (Grosser and Pešić 2005, Grosser *et al*. 2015). On the other hand, some leeches that were considered as "eastern" species extend more westerly. *Batracobdella euxina* Neubert & Nesemann, 1995 was described from Turkey (Neubert and Nesemann, 1995), later on found in Bulgaria (Grosser and Pešić 2006b) and in 2012 discovered in benthos of the River Aare downstream of Lake Biel in Switzerland (Jueg and Mürle 2013).

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