Preliminary Research on the Earthworm (Clitellata; Lumbricidae) Fauna of Eskişehir Beşik Deresi and Eskişehir-Mihalçık Gürleyik Village

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ABSTRACT: This study was carried out as a preliminary research on the earthworms of two different promenade area in Eskişehir province: Eskişehir Beşik Deresi and Eskişehir-Mihalçık Gürleyik Village.

INTRODUCTION

Turkey is a vast, situated in Western Asia and Southeastern Europe. Beşik Deresi and Gürleyik Village are situated in Eskişehir province (Northwestern Turkey). Beşik Deresi is a natural promenade area about 10 ha in size in the forest and about 35 km away from the center of Eskişehir. The rich flora of this wooded area with a natural waterfall and a clear stream consists of larch, juniper, plane, maple, nuts, willow, hawthorn, poplar, cranberry, blackberry, wild rose, oak and ivy. Gürleyik Village is connected to Mihalçık District of Eskişehir and it is 120 km away from the centre of Eskişehir. Gürleyik Village, which takes its name from the deep green waters, has a waterfall and surrounded by greenery.

Turkey’s extraordinary soil biodiversity results from its varied geophysical relief, diverse climate, and complex geotectonic history (Pavlíček et al. 2010). The first data of earthworms in Turkey were published by Rosa (1893). His work was followed by Omodeo (1952; 1955) and Zicsi (1973). Subsequently, Omodeo & Rota (1989; 1991) presented new records of lumbricid biodiversity from Turkey. Recently, some scientists published new data on the earthworm fauna of the country (Cszuzdi et al. 2007; Misirlioğlu 2002, 2004, 2009, Misirlioğlu et al., 2004; Szerdjeresi et al., 2014; Misirlioğlu & Szerdjeresi 2015; Valchovski & Misirlioğlu, 2017). Currently, 75 lumbricid earthworm species are listed for Turkey (Szerdjeresi et al., 2014). The explorations of the earthworm fauna from Eskişehir province were launched by Misirlioğlu (2002; 2004) and Misirlioğlu & Szerdjeresi (2015). These areas have been selected for study because these are natural areas and have not been studied so far on earthworms.
MATERIAL and METHODS

The field investigations were carried out during the spring of the year 2016. The earthworms were collected by digging and hand-sorting. The specimens were killed in 85% ethanol in the field. After 15 minutes, they were transferred to 96% ethanol. Specimens were described and dissected under low power stereo microscope. Csuzdi and Zicsi 2003 were followed for nomenclature.

RESULTS

Species found in Beşik Deresi

At the end of the study, four species belonging to three genera were found.

1. Eskişehir Beşik deresi, after the iron barrier at the entrance of trout farm, right side of the road, under humid sawdust cover, 16.05.2016, leg. Mete Mısırlıoğlu.

\[
\text{Dendrobaena veneta (Rosa, 1886)} \quad 8 \text{ exemplars}
\]

\[
\text{Aporrectodea trapezoides (Dugès, 1828)} \quad 2 \text{ exemplars}
\]

2. Eskişehir Beşik deresi, after the iron barrier at the entrance of trout farm, right side of the road, under the small concrete entrance of trout farm, under the small concrete waterfall located, 16.05.2016, leg. Mete Mısırlıoğlu.

\[
\text{Dendrobaena alpina armeniaca (Rosa, 1893)} \quad 5 \text{ exemplars}
\]

3. Eskişehir Beşik deresi, before the iron barrier at the Entrance of trout farm, right side of the road, 16.05.2016, leg. Mete Mısırlıoğlu.

\[
\text{Dendrobaena alpina armeniaca (Rosa, 1893)} \quad 6 \text{ exemplars}
\]

Species found in Gürleyik Village

At the end of the study, four species belonging to three genera were found.

1. Eskişehir, Mihalıççık, Gürleyik Village, edge of the stream (near the water like a swimming pool), planty area, among the roots, 04.09.2016, leg. Mete Mısırlıoğlu.

\[
\text{Dendrobaena byblica (Rosa, 1893)} \quad 1 \text{ exemplar}
\]

\[
\text{Octolasion lacteum (Orley, 1881)} \quad 1 \text{ exemplar}
\]

\[
\text{Aporrectodea rosea (Savigny, 1826)} \quad 7 \text{ exemplars}
\]

2. Eskişehir-Mihalıççık-Gürleyik Village, 150 m later after the entrance, edge of the small waterfall, 10.11.2016, leg. Ezgi Öğdür.

\[
\text{Aporrectodea trapezoides (Dugès, 1828)} \quad 3 \text{ exemplars}
\]

\[
\text{Aporrectodea rosea (Savigny, 1826)} \quad 1 \text{ exemplar}
\]

\[
\text{Enterion roseum Savigny, 1826: 182.}
\]

\[
\text{Eisenia rosea f. acystis: Omodeo 1952: 9.}
\]

\[
\text{Allobobophora rosea f. balcanica: Omodeo 1955: 2.}
\]

\[
\text{Allobobophora rosea: Zicsi 1973: 229; Omodeo & Rota 1991:177.}
\]

\[
\text{Allobobophora rosea complex: Omodeo & Rota 1989: 183.}
\]

\[
\]

Distribution in Turkey:

Distributed in all regions of Turkey (Csuzdi et al. 2006; Mısırlıoğlu, 2011).

Zoogeographical distribution type: A common peregrine species, native to the Palearctic (Csuzdi and Zicsi, 2003).

Aporrectodea trapezoides (Dugès, 1828)


Distribution in Turkey:

Distributed in all regions of Turkey (Csuzdi et al. 2006; Mısırlıoğlu, 2011).

Zoogeographical distribution type: One of the most widely distributed peregrine earthworms (Csuzdi and Zicsi, 2003).

Dendrobaena alpina armeniaca (Rosa, 1893)

Allobophora alpina v. armeniaca Rosa, 1893b: 431.

Distribution in Turkey:

Distributed in all regions of Turkey (Csuzdi et al. 2006; Mısırlıoğlu, 2011; Pavlıçek et al. 2009: 119-120).

Dendrobaena byblica (Rosa, 1893)


Distribution in Turkey:

Marmara, North, East and Inner Anatolia regions (Omodeo & Rota 1989; Csuzdi et al. 2006; Mısırlıoğlu 2008b; Szeredjesi et al. 2014).

Zoogeographical distribution type: Circum-Mediterranean. It was registered in central and southeast part of Europe, Russia, Dagstan, Iran and Afghanistan (Perel, 1997; Csuzdi and Zicsi, 2003).

Dendrobaena veneta (Rosa, 1886)
Three of the four recorded species in Beşik Deresi are peregrine: Aporrectodea trapezoides, Dendrobaena veneta, Dendrodrilus rubidus rubidus. Among them Dendrobaena veneta and Aporrectodea trapezoides are one of the most common peregrine species in Turkey. Dendrodrilus rubidus rubidus is a relatively rare species in Turkey. It was recorded in several localities almost all in North Anatolia, except one in the Mediterranean region. In Marmara it was recorded in the Asian and the Thracian regions as well. Now, it is reported from Eskişehir-Inner Anatolia.

Dendrobaena alpina armeniaca is a Caucaso-Anatolian endemism recorded especially in the forested area of North Anatolia. Beside this, it was recorded in Inner Anatolia (Sivas) but it is in the neighborhood of North Anatolia. Except these, it was recorded also in Asian Marmara, in Bursa-Uludağ and Eskişehir-Bozdağ which are mountain areas covered with forests. Again, it was found in a wooded area of Eskişehir.

Four species were found in the Gürleyik Village: Aporrectodea rosea, Aporrectodea trapezoides, Dendrobaena byblica and Octolasion lacteum. Among the recorded species, three of them are peregrine: Aporrectodea rosea, Aporrectodea trapezoides and Octolasion lacteum. Aporrectodea rosea and Aporrectodea trapezoides are very common peregrine species in Turkey. Octolasion lacteum was recorded from several localities in Turkey (Marmara Aegean area, Northeastern Anatolia and Inner Anatolia near Marmara) (Csuzdi et al. 2006; Mısırlıoğlu 2011). Dendrobaena byblica was recorded in several cities on both sides of the Marmara region and also in the Aegean region. It was recorded also in Mediterranean, North, East and Southeastern Anatolia.

Surely, a more comprehensive study should be done to understand the earthworm fauna of the studied regions completely but we think that the first results of these unsampled areas are important. So, this study could be helpful to studies which will be done in the regions in future.

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REFERENCES


Pavlíček T, Csuzdi Cs, Coşkun Y 2009. First earthworm records in Mesopotamia (Oligochaetae), Zoology in the Middle East, 48(1): 119-120.