Afyon Kocatepe Üniversitesi Fen ve Mühendislik Bilimleri Dergisi

Afyon Kocatepe University Journal of Science and Engineering

AKÜ FEMÜBİD **19** (2019) 031003 (533-535) AKU J. Sci. Eng. **19** (2019) 031003 (533-535)

DOI: 10.35414/akufemubid.514127

Araştırma Makalesi / Research Article

Earthworm (Clitellata; Megadrili) Records from Eskişehir Province

İbrahim Mete MISIRLIOĞLU[1*], Hristo VALCHOVSKI[2]

[1] *Eskişehir Osmangazi University, Faculty of Science and Letters, Department of Biology, 26480 Eskişehir, Turkey.*

[2] *Department of Physics, Erosion and Soil Biota, Institute of Soil Science "N. Pîushkarov", 7 Shosse Bankya Str. 1080 Sofia, Bulgaria.*

Corresponding author *e-posta: metem@ogu.edu.tr ORCID ID: http://orcid.org/0000-0001-9928-8478*

h_valchovski@abv.bg ORCID ID: http://orcid.org/0000-0002-6172-4307

Geliş Tarihi: 17.01.2019; Kabul Tarihi: 03.12.2019

Keywords
Annelida; Clitellata; Earthworms; Lumbricidae; Megadrili

Abstract

In this study, earthworm samples collected from 9 localities in Eskişehir Province were identified. At the end of the identification, 9 taxa belong to 6 genera were found: *Aporrectodea jassyensis* (Michaelsen, 1891), *Aporrectodea handlirschi handlirshi* (Rosa, 1897), *Aporrectodea handlirschi mahnerti* (Zicsi, 1973), *Aporrectodea rosea* (Savigny, 1826), *Dendrobaena veneta veneta* (Rosa, 1884), *Lumbricus rubellus* Hoffmeister, 1843, *Dendrodrilus rubidus rubidus* (Savigny, 1826), *Proctodrilus tuberculatus* (Černosvitov, 1935), *Octodrilus transpadanus* (Rosa, 1884), *Octodrilus complanatus* (Dugés, 1828).

Eskişehir İlinden Topraksolucanı (Clitellata; Megadrili) Kayıtları

Anahtar Kelimeler
Annelida; Clitellata; Topraksolucanları; Lumbricidae; Megadrili

Öz

Bu çalışmada Eskişehir İlinin 9 lokalitesinden toplanan topraksolucanları örneklerinin teşhisi yapılmıştır. Çalışma sonunda 6 cinse ait 9 takson bulunmuştur. Bu türler: *Aporrectodea jassyensis* (Michaelsen, 1891), *Aporrectodea handlirschi handlirshi* (Rosa, 1897), *Aporrectodea handlirschi mahnerti* (Zicsi, 1973), *Aporrectodea rosea* (Savigny, 1826), *Dendrobaena veneta veneta* (Rosa, 1884), *Lumbricus rubellus* Hoffmeister, 1843, *Dendrodrilus rubidus rubidus* (Savigny, 1826), *Proctodrilus tuberculatus* (Černosvitov, 1935), *Octodrilus transpadanus* (Rosa, 1884), *Octodrilus complanatus* (Dugés, 1828)'dur.

1. Introduction

Eskisehir is located on the northwest of the Central Anatolian Region. Approximately 22% of the province forms mountains and the share of the plains is around 26%. It has under the effect of continental climate. Annual temperature average is 10.9°C. There are large temperature differences between night (12°C) and day (29 °C) temperatures. The average annual precipitation is 378.9 kg / m^3. Precipitation is seen in snow and rain in winter. The spring rains fall in a downpour. Central Anatolian steppe, North and Western Anatolian forests form the vegetation cover of Eskişehir region (Anonymous, 1996).

Turkey is a vast and rich country in terms of biodiversity. Eighty-three earthworm taxa were registered so far and approximately one third of them are endemic to country. But our knowledge about distribution of the earthworm species in Turkey limited because there are still large unsampled areas in Turkey (Mısırlıoğlu 2017).

So, the aim of the current examination is to present contribution to the knowledge about earthworm fauna of the Eskişehir province. We think that the results also will be helpful to understand the distribution of some species except peregrines in Turkey.

2. Material and Methods

Digging and handsorting method were used for collecting the earthworm samples. The

specimens were put in 85% ethanol in the field. and then transferred to 96% ethanol in laboratory. Low power stereo microscope was used for identification.

Collecting localities as follows:

Loc 1: Eskişehir Sazova-edge of Porsuk river, altitude 770 m a.s.l, 12.IV.2017.

N 39° 46′ 21′′ E 30° 28′ 38′′

Loc 2: Eskişehir -Aşağısöğütönü-edge of a small pond, altitude 818 m a.s.l, 12.IV.2017.

N 39° 47′ 40′′ E 30° 28′ 41′′

Loc 3: Eskişehir, Çamlıca, edge of Porsuk river, altitude 792 m a.s.l, 12.IV.2017.

N 39° 46′ 6′′ E 30° 27′ 46′′

Loc 4: Eskişehir, Karabayır, edge of a stream, altitude 790 m a.s.l. 12.IV.2017.

N 39° 45′ 36′′ E 30° 28′ 8′′

Loc 5: Eskişehir, near the road of Çifteler-Konya, altitude 870 m a.s.l, 18.IV.2017.

Loc 6: Eskişehir, Fidanlık, Picnic area, altitude 790 m a.s.l, 19.IV.2017.

Loc 7: Eskişehir Muttalip quarter, edge of a small pond, altitude 795 m a.s.l, 19.04.2017.

N 39° 813938 E 30° 538548

Loc 8: Eskişehir Musaözü, Picnic area, edge of pond, altitude 800 m a.s.l, 19.IV.2017.

N 39° 47′ 40′′ E 30° 28′ 41′′

Loc 9: Eskişehir Karagözler quarter, woody area, altitude 790 m a.s.l, 19.IV.2017.

N 39° 46′ 6′′ E 30° 27′ 46′′

3. Results

9 species belong to 6 genera were found in this study. They are:

Aporrectodea jassyensis (Michaelsen, 1891)
Aporrectodea handlirschi handlirshi (Rosa, 1897)
Aporrectodea handlirschi mahnerti (Zicsi, 1973)
Aporrectodea rosea (Savigny, 1826)
Dendrobaena veneta veneta (Rosa, 1884)
Lumbricus rubellus Hoffmeister, 1843
Dendrodrilus rubidus rubidus (Savigny, 1826)
Proctodrilus tuberculatus (Černosvitov, 1935)
Octodrilus transpadanus (Rosa, 1884)
Octodrilus complanatus (Dugés, 1828)

Species in accordance to localities as follows :

Loc 1: *Octodrilus transpadanus* 3 exemples
Loc 2:*Aporrectodea jassyensis* 4 exs.
Proctodrilus tuberculatus 4 exs.
Aporrectodea rosea 3 exs.
Loc 3: *Octodrilus complanatus* 3 exs.
Lumbricus rubellus 1 exs.
Loc 4: *Octodrilus complanatus* 2 exs.
Loc 5:*Dendrobaena veneta* 1 exs.
Loc 6: *Dendrodrilus rubidus rubidus* 3 exs.
Loc 7: *Lumbricus rubellus* 3 exs.
Loc 8: *Aporrectodea handlirshii handlirshii* 3 exs.
Aporrectodea rosea 2 exs.
Loc 9: *Aporrectodea handlirshii mahnerti* 3 exs.

4.Discussion

Four of the collected species are peregrine: *Aporrectodea rosea* (Savigny, 1826), *Dendrodrilus rubidus rubidus* (Savigny, 1826), *Dendrobaena veneta veneta* (Rosa, 1884), *Lumbricus rubellus* Hoffmeister, 1843. They were already registered taxa from many areas of the country (Csuzdi *et al.* 2006, Omodeo and Rota 1989, 1991, Mısırlıoğlu 2017, Mısırlıoğlu and Szederjesi, 2015).

Three of them are Trans-Aegean species: *Proctodrilus tuberculatus* (Černosvitov, 1935), *Octodrilus transpadanus* (Rosa, 1884), *Aporrectodea handlirschi handlirshi* (Rosa, 1897). *Octodrilus transpadanus* was recorded from Aegean, Mediterranean, Marmara and Central Anatolia regions of Turkey (Omodeo and Rota 1989, 1991, Csuzdi *et al.* 2006, Mısırlıoğlu 2002, 2017). *Proctodrilus tuberculatus* is a rare species which recorded from Marmara, Mediterranean and Central Anatolia previously (Csuzdi *et al.* 2006, Mısırlıoğlu 2002). *Aporrectodea handlirschi handlirschi* was found in Bolu province which located in North-west Anatolia (Csuzdi *et al.* 2006). Now, it was recorded from Inner Anatolia.

Octodrilus complanatus (Dugés, 1828) is a Circum mediterranean species. It was recorded from Marmara and Aegean regions previously (Csuzdi *et al.* 2006, Mısırlıoğlu 2017). Now, It was recorded from west part of Inner Anatolia.

Aporrectodea jassyensis (Michaelsen, 1891) is an East Mediterranean species. There are some records of it from different provinces of Marmara, Aegean, Mediterranean, Inner and North Anatolia

regions (Csuzdi *et al.* 2006, Mısırlıoğlu 2017, Mısırlıoğlu and Szederjesi, 2015).

Aporrectodea handlirschi mahnerti (Zicsi, 1973) is endemic subspecies to Turkey. It was recorded from Bursa (Marmara Region) and Trabzon (North Anatolia) in previous studies. It is the first record of it from Central Anatolia. (Omodeo and Rota 1989, 1991, Csuzdi *et al.* 2006, Mısırlıoğlu 2017).

Turkey is the richest country in terms of earthworm biodiversity among the whole neighbours. But there are still unsampled areas in the country and distribution of some species is still unknown. So, all records in Turkey may be helpful to understand the earthworms fauna of the country and the distribution of the species except peregrines as well. We hope that our results can be helpful to understand the earthworm diversity of the Eskişehir and also Turkey.

5. References

Anonymous, 1996. Global Medya Hizmetleri&Halkla İlişkiler Tic. Ltd. Şti., Eskişehir, ETAM A.Ş. Matbaa Tesisleri, 1-116.

Csuzdi Cs., Zicsi A., 2003. Earthworms of Hungary (Annelida: Oligochaeta; Lumbricidae). Hungarian Natural History Museum, Budapest, 1-271.

Csuzdi Cs., Zicsi A., Mısırlıoğlu M., 2006. An annotated checklist of the earthworm fauna of Turkey (Oligochaeta: Lumbricidae) *Zootaxa*, **1175**: 1–29 [6].

Mısırlıoğlu M. 2002. The earthworms (Oligochaeta: Lumbricidae) of Eskişehir City, Turkey. *Megadrilogica* **9**: 17–20.

Mısırlıoğlu M., 2017. Topraksolucanları, Biyolojileri, Ekolojileri, Zirai Yönleri, Türkiye Türleri ve Türlerin Taksonomik Özellikleri. Genişletilmiş ve Gözden Geçirilmiş 2. Basım, Nobel Yayınları, Ankara, 1-168.

Mısırlıoğlu M., Szederjesi T., 2015. Contributions to the Earthworm Fauna of Turkey, *Megadrilogica* **18**(6): 99-102.

Omodeo P. Rota E. 1989. Earthworms of Turkey. *Bolletino Zoologica*, **56**, 167-199.

Omodeo P., Rota E., 1991. Earthworms of Turkey II. *Bolletino Zoologica*, **58**, 171-181.