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Contribution to the knowledge of earthworm fauna (Lumbricidae) from Northern Bulgaria

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Abstract. Identifying the earthworm material recently collected from the Pre-Balkan hills resulted in the discovery of rare *Allolobophora leoni* (Michaelsen, 1891) and endemic species *Cernosvitovia rebeli* (Rosa, 1897). This is the first finding of *Allolobophora leoni* since 1965 and the northernmost finding of species *Cernosvitovia rebeli* from Bulgaria. The paper also provided information about the distribution and zoogeography of those taxa.

Key words: Lumbricidae, pre-Balkan region, Bulgaria.

Introduction

Northern Bulgaria is the northern half of the country, located to the north of the main ridge of the Balkan Mountains. Besides the Balkan Mountains, Northern Bulgaria borders the Timok River to the west, the Danube River to the north, and the Bulgarian Black Sea Coast to the east. Geographically, the region's terrain is relatively uniform, dominated by the hilly Danubian Plain, with some low plateaus to the east. Northern Bulgaria covers an area of 48.596 square kilometres. The earthworm fauna from Northern Bulgaria is not yet well explored. Only a few data from scarce areas were published in the past: Černosvitov (1937), Mihailova (1965; 1968), Sapkarev (1986), Uzunov (2010), Valchovski & Szederjesi (2016) and Valchovski (2017; 2024).

Materials and methods

Investigations were carried out during spring of 2025. Earthworms were collected by digging and hand sorting. The specimens were killed in 95% ethanol, fixed in 4% formalin solution and in 70% ethanol. Localities are from meadows from the Pre-Balkan hills. The specimens were deposited in the *Institute of Soil Science, Agrotechnologies and Plant Protection "N. Poushkarov", Sofia, Bulgaria.* The earthworms were described and dissected under a low-power microscope. Identification of species was done in accordance to Mršić (1991).

Results

Family Lumbricidae Rafinesque-Schmaltz, 1815

Genus *Allolobophora* Eisen, 1874

***Allolobophora leoni* (Michaelsen, 1891)**

Allolobophora leoni Michaelsen, 1891: 15; Mihailova 1965: 258; Valchovski 2012: 87.

Allolobophora (*Allolobophora*) *leoni*: Perel 1979: 188.

Pannoniona leoni: Mršić 1991: 227.

3 ex. near dam Krapetz (Lovech) 43° 5' 30"N 24° 55' 10" E, 403m a.s.l., leg. L. Tribis.

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Genus *Aporrectodea* Örley, 1885
***Aporrectodea rosea* (Savigny, 1826)**
Enterion roseum Savigny, 1826: 182.
Allolobophora prashadi : Mihailova 1964:167.
Eisenia rosea var. *typica*: Mihailova 1966: 185.
Allolobophora rosea: Plisko 1963: 428.
Allolobophora rosea rosea: Šapkarev 1986: 81.
Allolobophora rosea balcanica: Šapkarev 1986: 81.
Aporrectodea rosea rosea: Valchovski 2014: 3
Aporrectodea rosea: Stojanović *et al.* 2012: 9; Valchovski & Szederjesi 2016: 357.
14 ex. near dam Krapetz (Lovech) 43° 5' 30"N 24° 55' 10" E, 403m a.s.l., 12 ex. Koevtci vill. 43° 9' 18"N 25° 7' 7.47"E, 403m a.s.l., 6 ex. Krasno Gradishte vill. 43° 10' 57"N, 25° 10' 48" E, 210m a.s.l., 2 ex. Suchindol vill. 43° 10' 8" N 25° 8' 33"E, 328m a.s.l., leg. L. Tribis.

Genus *Cernosvitovia* Omodeo 1956
***Cernosvitovia rebeli* (Rosa, 1897)**
Allolobophora rebeli Rosa, 1897: 2.
Octolasium rebeli: Černosvitov 1934: 77.; 1937: 89; Mihailova 1966: 194.
Cernosvitovia rebeli: Valchovski 2012: 91; Szederjesi 2013: 78.
3 ex. Krasno Gradishte vill. 43° 10' 57"N, 25° 10' 48" E, 210 m a.s.l., 6 ex. Koevtsi, 43° 9' 18" N 25° 7' 7.47"E, 403m a.s.l., leg. L. Tribis.

Genus *Lumbricus* Linnaeus, 1758
***Lumbricus rubellus* Hoffmeister, 1843**
Lumbricus rubellus Hoffmeister, 1843: 187; Plisko 1963: 438; Mihailova 1966: 194; Zicsi & Csuzdi 1986: 120; Šapkarev 1986: 85; Stojanović *et al.* 2012: 9; Valchovski 2014: 5.
1 ex. Koevtsi 43° 9' 18" N 25° 7' 7.47"E, 403m a.s.l., 1 ex. Suchindol, 43° 10' 8" N 25° 8' 33"E, 328m a.s.l., leg. L. Tribis.

***Lumbricus terrestris* Linnaeus, 1758**
Lumbricus herculeus: Bouchė 1972: 352.
Lumbricus terrestris Linnaeus, 1758: 647; Černosvitov 1937: 90; Plisko 1963: 438; Šapkarev 1986: 85; Zicsi & Csuzdi 1986: 120; Szederjesi 2013: 80; Valchovski 2014: 5.
1 ex., Suchindol vill. 43° 10' 8" N 25° 8' 33"E, 328m a.s.l., leg. L. Tribis.

Discussion

Allolobophora leoni (Michaelsen, 1891) has only one record in the country from Dobrudzha North-Western Bulgaria (Mihailova 1965). The species is a Trans-Aegean zoogeographic distribution type. It was registered in Southern and Eastern Europe (Mršić, 1991). *Cernosvitovia rebeli* (Rosa, 1897) is a Balkan endemic species. It was found in Albania, Greece and Bulgaria (Mršić, 1991). On the territory of the country is registered many times from Southern Bulgaria. Stara Planina Mts. (Rosa 1897; Černosvitov 1934; Valchovski 2016), Strandja Mt. (Černosvitov 1937; Szederjesi 2013) and Western Rhodope Mts. (Mihailova 1966), Sredna Gora Mt. (Valchovski & Velizarova, 2016), Gorata Mt., part of East Rhodope Mts. (Szederjesi 2013), and Thracian lowland (Valchovski *et al.*, 2019). The northern border of the area of *Cernosvitovia rebeli* was the Balkan Mts. This is the first finding from Northern Bulgaria and the northernmost occurrence of the species in the world at all.

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