ZooNotes 242: 1-4 (2024) 242
www.zoonotes.bio.uni-plovdiv.bg
ISSN 1313-9916 DOI: 10.69085/zn20240242

First finding of rare endemic species *Cernosvitovia biserialis* (Černosvitov, 1937) since 1967 year from Bulgaria

HRISTO VALCHOVSKI

Agricultural academy, N. Poushkarov Institute of Soil Science, Agrotechnology and Plant Protection, 7 Shosse Bankya Str., 1080 Sofia, Bulgaria e-mail: h_valchovski@abv.bg

Abstract. Identifying the earthworm material recently collected from pre-Balkan hill zone resulted in discovered new record of rare Balkan endemic species from *Cernosvitovia biserialis* (Černosvitov, 1937) since 1967. This is the northern finding of the species from Bulgaria. The paper also provided information about distribution, zoogeography and ecology of this taxon.

Key words: earthworms, Lumbricidae, Bulgaria.

Introduction

The Pre-Balkan represents the northern hilly and low-mountainous strip of the Staroplaninska (Balkan) zone and is an intermediate link between the Danube plain in the north and the actual highland part of the Balkan Mts. It occupies an area of 14,389.8 km² and the length – about 460 km. Its width varies from 20 – 30 km in the western and eastern parts to 50 – 60 km in the middle part. The average altitude is 364 m and the maximum height is Vasiliev Peak (1490 m). The earthworm fauna from Pre-Balkan is not yet well explored. Only few data from this region was published in the past: Mihailova (1966), Sapkarev (1986), and Valchovski (2017).

Material and methods

Investigations were carried out during 2024 year. Earthworms were collected by the diluted formaldehyde method (Raw 1959). The specimens were killed in 70% ethanol, fixed in 4% formalin solution and in 70% ethanol. Localities in Rhodope were investigated during this research.

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 low power microscope. Identification of species was done in accordance to Mršić (1991).

Results

Family Lumbricidae Rafinesque-Schmaltz, 1815

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.

Received: 01.06.2024, Accepted: 11.05.2024, Университетско издателство "Паисий Хилендарски"
Published: 17.06.2024 Plovdiv University Press "Paisii Hilendarski"

Allolobophora rosea balcanica: Šapkarev 1986: 81.
Aporrectodea rosea rosea: Valchovski 2014: 3
Aporrectodea rosea: Stojanović *et al.* 2012: 9; Valchovski & Szederjesi 2016: 357.
10 ex. Yablanitsa vill., 43°00'29"N, 24°03'46"E, 480 m, leg. H. Valchovski.

Genus *Cernosvitovia* Omodeo 1956
***Cernosvitovia biserialis* (Černosvitov, 1937)**
Allolobophora biserialis Černosvitov, 1937: 85; Mihailova 1966: 190, Zicsi and Csuzdi 1986:114.
Cernosvitovia biserialis: Zicsi 1982: 441, Šapkarev 1986: 84; Valchovski 2012: 90, (Stojanovic et al., 2013).
3 ex. Yablanitsa vill., 43°00'29"N, 24°03'46"E, 480 m, leg. H. Valchovski.

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., Yablanitsa vill., 43°00'29"N, 24°03'46"E, 480 m, leg. H. Valchovski.

***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; Stojanović *et al.* 2012: 9; Szederjesi 2013: 80; Valchovski 2014: 5.
4 ex., Yablanitsa vill., 43°00'29"N, 24°03'46"E, 480 m, leg. H. Valchovski.

Genus *Octolasion* Örley, 1885
***Octolasion lacteum* (Örley, 1881)**
Lumbricus terrestris var. lacteum Örley, 1881: 584.
Octolasium lacteum: Černosvitov 1934: 76., 1937: 89; Plisko 1963:432; Mihailova 1966: 193; Zicsi & Csuzdi 1986: 120.
Octolasion tyrtaeum: Mršić 1991: 347.
Octolasion lacteum: Šapkarev 1986: 84; Szederjesi 2013: 81; Stojanović *et al.* 2012: 9; Valchovski 2014: 6.
5 ex., Yablanitsa vill., 43°00'29"N, 24°03'46"E, 480 m, leg. H. Valchovski.

Discussion

Cernosvitovia biserialis (Černosvitov, 1937) is a restricted endemic taxon registered at few localities from Bulgaria and Serbia. Sapkarev (1988) recorded *Cernosvitovia biserialis* near the border with Bulgaria from the Serbian side: Caribrod and Vidilic village. Type locality is near Primorsko village, (Černosvitov, 1937). The species was found after that in Ljulin Mountain, Vratca (Western Stara Planina Mts). Zemen (Koniyavska Mt.) (Černosvitov 1937). Mihailova (1966) reported the species from Gorata Mt., part of Eastern Rhodope Mts. and the last record is from 1967 year Chepan Mt. (Šapkarev 1986).

The type locality from Černosvitov (1937) and the record of Mihailova (1966) are probably misidentification with close species *Cernosvitovia bulgarica* (Černosvitov, 1934). Both findings are from South-eastern Bulgaria where is the areal of *Cernosvitovia bulgarica*, far away from distribution of *Cernosvitovia biserialis*. Current record from Pre-Balkan is the most eastern finding of *Cernosvitovia biserialis*, excluding doubtful records. Zoogeographical distribution type of the taxon is Balkan endemism according to Mršić (1991). Habitat of *Cernosvitovia biserialis is:* stream banks, caves, forests (Mihailova 1966) and meadows

(Šapkarev 1986). The species was found mainly in hilly and low-mountainous zones in western Bulgaria and Serbia near the border with Bulgaria.

References

Bouché, M.B. (1972) *Lombriciens de France, écologie et systématique*. I.N.R.A. Publications 72-2. Institut National de la Recherche Agronomique, Paris, 621 pp.

Černosvitov, L. (1934) Die *Lumbriciden Bulgariens. Mitteilungen aus den Königlich Naturwissenschaftlichen Instituten in Sofia*, 7: 71–78.

Černosvitov, L. (1937) Die Oligochaetenfauna Bulgariens. *Mitteilungen aus den Königlich Naturwissenschaftlichen Instituten in Sofia*, 10: 62–92.

Hoffmeister, W. (1843) Beitrag zur Kenntnis Deutscher Landanneliden. *Archiv für Naturgeschichte*, 9: 183–198.

Linnaeus, C. (1758) *Systema Naturae per Regna tria Naturae, secundum Classes, Ordines, Genera, Species, cum Characteri- bus, Differentiatiis, Synonymis, Locis*. 10th edition, volume 1. Laurentii Salvii, Holmiae, 824 pp.

Mihailova, P. (1964) Njakoj vidove ot semejstvo Lumbricidae (Oligohaeta) novi za faunata na Blgarija. *Annuaire de Université de Sofia*, 57: 163–169.

Mihailova, P. (1966) Dzdovni cervi Lumbricidae (Oligohaeta) v Trakija. *Fauna na Trakja, Bulgarian Academy of Science, Sofia*, 3: 181–200.

Mršić, N. (1991) *Monograph on Earthworms (Lumbricidae) of the Balkans*. Slovenian Academy of Sciences and Arts, Liubliana, 755 pp.

Omodeo, P. (1956b) Contributo alla revisione dei Lumbricidae. *Archivio Zoologico Italiano*, 41: 129–212.

Örley, L. (1881) A magyarországi Oligochaeták faunája. I. Terricolae. *Mathematikai és Természettudományok Köréből*, 16: 562–611.

Örley, L. (1885) A palaearktikus övben élõ Terrikoláknak revíziója és elterjedése. *Értekezések a Természettudományok Köréből*, 15: 1–34.

Plisko, G. (1963) Materialien zur Kenntnis der Regenwürmer (Oligochaeta, Lumbricidae) Bulgariens. *Fragmenta Faunisica, Warsawa*, 10: 425–440.

Rafinesque-Schmaltz, C. (1815) *Analyse de la Nature ou tableau de l'univers et des corps organisés*. Palermo, 223 pp.

Raw, F. (1959): Estimating earthworm population by using formalin. *Nature*, 184: 1661-1662.

Šapkarev, J, (1988) Contribution to the knowledge of the earthworm fauna of Serbia, Yugoslavia (Lumbricids of Šumadija). Fragmenta Balcanica Musei Macedonici Scientiarum Naturalium, 5(14): 17–24.

Šapkarev, J. (1986) Earthworm fauna of Bulgaria (Oligochaeta: Lumbricidae). *Fragmenta Balcanica*, 13: 77–94.

Stojanović, M., Tsekova, R. & Milutinović, T. (2012) Earthworms (Oligochaeta: Lumbricidae) of Bulgaria: Diversity and Biogeographical Review. *Acta Zoologica Bulgarica*, Suppl. 4: 7-15.

Szederjesi, T. (2013) New earthworm records from Bulgaria (Oligochaeta, Lumbricidae). *Opuscula Zoologica, Budapest* 44: 77–83.

Valchovski, H. (2012) Checklist of earthworms (Oligochaeta: Lumbricidae) from Bulgaria – a review. *Zootaxa*, 3458: 86–102.

Valchovski, H. (2014) Diversity of earthworms (Oligochaeta: Lumbricidae) in Sofia Plain, Bulgaria. *ZooNotes*, 59: 1–9.

Valchovski, H. (2017) New data on the distribution of earthworms (Oligochaeta: Lumbricidae) in Bulgaria, with first record of Proctodrilus opisthoductus Zicsi, 1985 in the country. *Acta Zoologica Bulgarica*, 69(3): 441–443.

Valchovski, H. & Szederjesi, T. (2016) New and additional records of earthworms (Oligochaeta: Lumbricidae) from Bulgaria: first finding place of endemic species *Cernosvitovia munteniana* on the Balkan Peninsula. *North-Western Journal of Zoology*, 12(2): 356–360.

Zicsi, A., 1982. Revision zweier Bretscherischen Regenwurm-Arten (Oligochaeta: Lumbricidae). Revue suisse de Zoologie, 89: 553–565.

Zicsi, A. & Csuzdi, C. (1986) Regenwürmer aus Bulgarien (Oligochaeta Lumbricidae). *Opuscula Zoologica, Budapest*, 22: 113–121.