ZooNotes 99: 1-3 (2016)
www.zoonotes.bio.uni-plovdiv.bg
ISSN 1313-9916

New earthworm (Clitellata: Lumbricidae) records from Vitosha Mts. (Bulgaria)

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Abstract. The paper deals with earthworm diversity from Vitosha Mountain (Bulgaria). During the investigation 10 earthworm species were collected altogether, belonging to 7 genera. Among them, two taxa are reported for the first time from the explored region. *Aporrectodea caliginosa* (Savigny, 1826) and *Lumbricus terrestris* Linnaeus, 1758 are proved to be new records from the territory of Vitosha Mountain.

Key words: Earthworms, Lumbricidae, Vitosha Mts.

Introduction

Vitosha is a mountain in western parts of Bulgaria, in south of Sofia town. It is situated between Stara Planina (Balkan Mountains) and Rilo-Rhodopes massif. The mountain is 19 km long and 17 km wide, actually consists of concentric denudational plateaus rising in tiers one above the other. The mountain has an area of 278 sq. km. Vitosha is separated into four main parts whose main ridges gather at a crown known as Cherni Vrah. This is the highest point of the mountain at 2.290 m a.s.l.

The first exploration of earthworm diversity in Vitosha Mountain was launched by Černosvitov (1934; 1937). His work was continued by Plisko (1963) and Šapkarev (1986). Recently Stojanović *et al.* (2012) recorded new records from Vitosha Mountain.

Material and Methods

The field investigations were carried out during the summer of 2016. Earthworms were collected by the diluted formaldehyde method (Raw 1959) complemented with digging and hand-sorting. The combination of both methods provides a more complete sampling of species, because the formalin method alone is not efficient in collecting species living in horizontal burrows. All the specimens were killed in 96% ethanol, fixed in 4% formalin solution and in 96% ethanol, then transfered into 75% ethanol. The material is deposited in the Institute of Soil Science, Agrotechnologies and Plant Protection "N. Poushkarov", Sofia, Bulgaria in private earthworm collection of Hristo Valchovski (PCHV). Identification of species was done in accordance to Mršić (1991).

Accepted: 12 October 2016
Published: 14 October 2016

Collecting localities:
1. Bistritca village, mixed forest, 1.046 m a.s.l., 42° 35' 12N 23° 20' 27E.
2. Ianchovska River, beech forest, 1.400 m a.s.l., 42° 35' 00N 23° 18' 46E.
3. Aleko hut, subalpine meadow, 1.820 m a.s.l., 42° 34' 50N 23° 17' 45E.

Results and Discussion

During the investigation from Vitosha Mountain ten lumbricid earthworm species were collected altogether, belonging to seven genera. The collected specimens are to be found in Table 1.

Tab.1. Earthworm species from Vitosha Mts.

Species	**Locality (specimens)**
Aporrectodea caliginosa (Savigny, 1826)	1 (2)
Aporrectodea rosea (Savigny, 1826)	1 (4)
Dendrobaena alpina (Rosa, 1884)	3 (4)
Dendrobaena attemsi (Michaelsen, 1902)	3 (1)
Dendrodrilus rubidus rubidus (Savigny, 1826)	2 (1)
Eisenia lucens (Waga, 1857)	2 (1)
Eiseniella tetraedra (Savigny, 1826)	1 (2)
Lumbricus rubellus Hoffmeister, 1843	2 (2)
Lumbricus terrestris Linnaeus, 1758	1 (3)
Octolasion lacteum (Örley, 1881)	2 (3)

Two taxa are found for the first time from Vitosha Mts. *Aporrectodea caliginosa* (Savigny, 1826) and *Lumbricus terrestris* Linnaeus, 1758 are proved to be new records for the explored region. *Lumbricus terrestris* is peregrine species, registered from many parts of South Bulgaria (Valchovski 2014) and Balkan Peninsula (Mısırlıoğlu *et al.* 2016). *Eisenia lucens* is widely distributed in deciduous forests in the country (Valchovski 2012).

According to current study and literature data there are 19 earthworm species and subspecies found at Vitosha Mts. The zoogeographical distribution of the lumbricid fauna of Vitosha Mts. is dominated by peregrine species (10 taxa = 52.63%). There are and Endemics (2 taxa = 10.52%), Balkanic-Alpine (2 taxa = 10.52%) and Trans-Aegean species (2 taxa = 10.52%). The Central-European, Mediterranean, Holarctic earthworms take part only with 1 species (5.26%).

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