Five aquatic Oligochaeta species new for the fauna of Montenegro

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Abstract: Five species of aquatic Oligochaeta new for Montenegro were recorded from various types of fresh waters. Marionina argentea (Michaelsen, 1889) was reported from a subterranean stream. Propappus volki Michaelsen, 1916, Rhyacodrilus coccineus (Vejdovský, 1876), and Cognettia sphagnetorum (Vejdovský, 1877) were found in epigean streams. Haplotaxis gordioides (Hartmann, 1821) appeared in both subterranean and epigean streams. The list of aquatic oligochaetes from Montenegro now encompasses 39 species.

Key words: Aquatic oligochaetes, Montenegro, new records, faunistics


The aim of this paper is to contribute to the diversity and distribution of aquatic oligochaetes from running and subterranean waters in Montenegro.

The examined material comes from qualitative samples collected in 2000, 2002, 2004, and 2006 from 4 research stations (Figure) by hand netting. In Djakovića cave (station 1) located in Grahovo (42°39’21”N, 18°40’36”E; 7.09.2000, 7.02.2002) the samples were taken from the subterranean stream. In Lepenac stream (station 2) near Mojkovac (42°57’50”N, 19°34’57”E; 30.09.2006) and Bistrica stream (station 3) in Crkvine near Kolašin (43°7’7”N, 19°20’25”E; 30.09.2006) the samples were collected from stoney and gravel substrate. In Kuti stream (station 4) 13 km NW of Plav (42°37’08”N, 19°47’08”E; 9.10.2004) samples were taken from muddy substrate. The material was rinsed in a sieve with mesh size 0.25 mm, preserved in 3% formalin, and then transferred to 75% alcohol. All the individuals were eventually mounted on slides in

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polyvinyl lactophenol and examined with the use of keys by Nielsen and Christensen (1959), Kasprzak (1981), and Timm (2009). Slide-mounted specimens are kept in the collection of the first author.

Five species of Oligochaeta, namely *Cognettia sphagnetorum*, *Haplotaxis gordioides*, *Marionina argentea*, *Propappus volki*, and *Rhyacodrilus coccineus*, appeared to be new for the Montenegrin fauna. Being holarctic (*R. coccineus*, *C. sphagnetorum*, *H. gordioides*, *M. argentea*) and palearctic (*P. volki*) elements all these species are widespread in Europe (Timm, 2009). Fauna Europaea (Timm, 2004) reports *M. argentea* from 20 countries, *C. sphagnetorum* and *H. gordioides* from 23, *P. volki* from 25, and *R. coccineus* from 33. *Haplotaxis gordioides*, *P. volki*, and *R. coccineus* are already known from Croatia as well as all the above species plus *C. sphagnetorum* from Bosnia and Herzegovina. *Rhyacodrilus coccineus* and *H. gordioides* were also reported from Macedonia and these with the addition of *C. sphagnetorum* from Slovenia (Timm, 2004). Paunovic et al. (2003) gave information about *H. gordioides* and *P. volki* from Serbia. Kerovec and Mršić (1981) reported *C. sphagnetorum* from this country. *Marionina argentea* has not been recorded from any country of the former Yugoslavia, but the species was reported from the Balkan Peninsula in Greece (Timm, 2004). Taking into consideration data about terrestrial species given by Stojanović and Karaman (2003), the total number of Oligochaeta of Montenegro is now 84 species (39 aquatic), which is about 8.5% of the European oligochaete fauna.

**Family: Haplotaxidae**

*Haplotaxis gordioides* (Hartmann, 1821)

Material: 7 individuals from 2 sites: Djakovića cave (date of sampling: 7.02.2002) and Lepenac stream.

Characteristics of examined specimens: Worms 40-53 mm in length and 170-215 segments, pink. Long prostomium with a transverse groove. Chaetae large, thick, simple-pointed, sigmoid, with nodulus, arranged singly in bundles. Dorsal chaetae smaller, lacking only in front segments. Immature individuals.

The species is known from various epigean and subterranean cool waters (Timm, 2009). In the present study recorded from subterranean stream and stony and gravel substrate of epigean flow.

**Family: Enchytraeidae**

*Cognettia sphagnetorum* (Vejdovský, 1878)

Material: 5 individuals found in Bistrica stream.

Characteristics of examined specimens: Worms 15-16 mm in length and 44-53 segments. Chaetae sigmoid, without nodulus, arranged by 3 (by 4 in few posterior segments). Five pairs of compact pharyngeal glands arranged dorsally. Immature individuals.

Species known from fresh waters and *Sphagnum* bogs (Timm 2009). In the present study recorded from stony and gravel substrate of epigean stream.

*Marionina argentea* (Michaelsen, 1889)

Material: 1 individual found in Djakovića cave on 7.09.2000.

Characteristics of examined specimens: Small worm 4 mm in length and 27 segments, intensively white. Chaetae straight, without nodulus, arranged 2 per bundle. II segment without dorsal bundles. Oval spermathecal ampullae connected with oesophagus. Clitellum present in segments XII and XIII.

![Figure. Locations of sampling sites in Montenegro (1 - Djacovića cave, 2 – Lepenac stream, 3 – Bistrica stream, 4 – Kuti stream).](attachment:image.png)
The species is known from soil and fresh waters (Timm, 2009). In the present study recorded from subterranean stream.

**Family: Naididae**

**Subfamily: Rhyacodrilinae**

*Rhyacodrilus coccineus* (Vejdovský, 1876)

Material: 6 mature individuals found in Lepenac stream.

Characteristics of examined specimens: Worms 16-18 mm in length and 57-62 segments. Dorsal chaetae start from II segment and are arranged by 3-5 hair and 3-5 pectinate chaetae per bundle in anterior segments. Preclitellar ventral chaetae bifid, 4-5 per bundle, with teeth of equal length, while in posterior segments the upper tooth slightly thinner and shorter. Clitellum present in segments ¼ X to ½ XIII. Penial chaetae present, 4-5 per bundle, with hooked distal end, without teeth, blunt ended.

In the present study the species was recorded from stony and gravel substrate of epigean flow.

**Family: Propappidæ**

*Propappus volki* Michaelsen, 1916

Material: 2 individuals found in Kuti stream.

Characteristics of examined specimens: Worms of the length of 6 mm and 31-33 segments, white. Prostomium with a tentacle. Bifid, sigmoid chaetae with nodulus arranged 3 per bundle. Each bundle with 2 large chaetal glands attached. Immature individuals.

The species is known from various epigean and subterranean waters (Timm, 2009). In the present study recorded from muddy substrate of epigean flow.

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