

1-1-2011

## Five aquatic Oligochaeta species new for the fauna of Montenegro

ALEKSANDRA JABLONSKA

VLADIMIR PESIC

Follow this and additional works at: <https://journals.tubitak.gov.tr/zoology>



Part of the [Zooology Commons](#)

---

### Recommended Citation

JABLONSKA, ALEKSANDRA and PESIC, VLADIMIR (2011) "Five aquatic Oligochaeta species new for the fauna of Montenegro," *Turkish Journal of Zoology*. Vol. 35: No. 1, Article 17. <https://doi.org/10.3906/zoo-0903-12>

Available at: <https://journals.tubitak.gov.tr/zoology/vol35/iss1/17>

This Article is brought to you for free and open access by TÜBİTAK Academic Journals. It has been accepted for inclusion in Turkish Journal of Zoology by an authorized editor of TÜBİTAK Academic Journals. For more information, please contact [academic.publications@tubitak.gov.tr](mailto:academic.publications@tubitak.gov.tr).

## Five aquatic Oligochaeta species new for the fauna of Montenegro

Aleksandra JABŁOŃSKA<sup>1,\*</sup>, Vladimir PEŠIĆ<sup>2</sup>

<sup>1</sup>Department of Invertebrate Zoology & Hydrobiology, University of Łódź,  
Banacha 12/16, PL-90-237 Łódź - POLAND

<sup>2</sup>Department of Biology, Faculty of Sciences, University of Crna Gora, Cetinjski put b.b.,  
81000 Podgorica, Crna Gora - MONTENEGRO

Received: 09.03.2009

**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 epigeal streams. *Haplotaxis gordioides* (Hartmann, 1821) appeared in both subterranean and epigeal streams. The list of aquatic oligochaetes from Montenegro now encompasses 39 species.

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

Faunistic data of aquatic oligochaetes from Montenegro come from a few papers by Černosvitov (1931), Hrabě (1958), Karaman (1973), and Jacobi (1981a, 1981b). Kerovec and Mršić (1981) in their *Catalogus Faunae Yugoslaviae* mentioned only 16 aquatic Oligochaeta species from Montenegro. Janković and Jakovčev (1986) as well as Jakovčev et al. (1995) enriched that list with 12 species, while Jabłońska and Pešić (2006) added another 6.

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 Bistrice stream (station 3) in Crkvine near Kolašin (43°7'7"N, 19°20'25"E; 30.09.2006) the samples were collected from stony 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

\* E-mail: olapio@biol.uni.lodz.pl;

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 epigeal and subterranean cool waters (Timm, 2009). In the present study recorded from subterranean stream and stony and gravel substrate of epigeal flow.

**Family: Enchytraeidae**

*Cognettia sphagnetorum* (Vejdovský, 1878)

Material: 5 individuals found in Bistrice 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 epigeal 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 - Djakovića cave, 2 - Lepenac stream, 3 - Bistrice stream, 4 - Kuti stream).

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 ½ 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 epigeal flow.

**Family: Propappidae**

*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 epigeal and subterranean waters (Timm, 2009). In the present study recorded from muddy substrate of epigeal flow.

**Acknowledgments**

The authors are grateful to Elżbieta Dumnicka for her help in identifying the species of the family Enchytraeidae. We wish to thank Tarmo Timm and the second anonymous referee for their valuable critique and comments. We also thank Michał Grabowski for improving the final version of the manuscript.

**References**

- Černosvitov, L. 1931. Zur Kenntnis der Oligochaetenfauna des Balkans. Zool. Anz. 95: 312-327.
- Hrabě, S. 1958. Die Oligochaeten aus den Seen Dojran und Skadar. Spisy vydav. Přír. Fak. Masaryk Univ. 197: 337-353.
- Jabłońska, A. and Pešić, V. 2006. New data on aquatic Oligochaeta of Montenegro. In: Proceedings of the Symposium, II International Symposium of Ecologists of Montenegro (Eds., V. Pešić and S. Hadžiablahović), Kotor, pp. 25-29.
- Jacobi, G.Z. 1981a. Benthic macroinvertebrates of the upper Morača River and its tributaries. In: The biota and limnology of Lake Skadar. (ed. G. Karaman), Biološki zavod Titograd, Smithsonian Institution Washington, pp. 282-294.
- Jacobi, G.Z. 1981b. Zoobenthos from sublacustrine springs in Lake Skadar. In: The biota and limnology of Lake Skadar. (ed. G. Karaman), Biološki zavod Titograd, Smithsonian Institution Washington, pp. 251-263.
- Jakovčev, D., Kalafatić, V. and Martinović-Vitanović, V. 1995. Diverzitet oligoheta (Oligochaeta) kopnenih voda Jugoslavije sa pregledom vrsta od međunarodnog značaja. In: Biodiverzitet Jugoslavije sa pregledom vrsta od međunarodnog značaja. (eds., V. Stevanović and V. Vasić), Ecolibri, Biološki Fakultet Beograd, pp. 279-284.
- Janković, M. and Jakovčev, D. 1986. Study of the bottom fauna of the Lake Skadar in the area of Raduš. Ekologija. 21 (1): 1-16.
- Karaman, S. 1973. Beitrag zur Kenntnis der Oligochaetenfauna des Skadarsees. Zool. Anz. 190 (5/6): 351-358.
- Kasprzak, K. 1981. Skąposzczety wodne I. Klucze do oznaczania bezkręgowców Polski. PWN, Warszawa.
- Kerovec, M. and Mršić, N. 1981. Catalogus Faunae Jugoslaviae III/1 Oligochaeta. Slovenska akademija znanosti in umetnosti, Ljubljana.
- Nielsen, C.O. and Christensen, B. 1959. The Enchytraeidae critical revision and taxonomy of European species. Naturhistorisk Museum, Aarhus.
- Paunovic, M., Kalafatic, V., Jakovcev, D. and Martinovic-Vitanovic, V. 2003. Oligochaetes (Annelida, Oligochaeta) of the Vlastina river (South-East Serbia): diversity and distribution. Biologia, Bratislava, 58 (5): 903-911.
- Stojanović, M. and Karaman, S. 2003. Second contribution to the knowledge of earthworms (Lumbricidae) in Montenegro. Arch. Biol. Sci. 55 (1-2): 55-58.
- Timm, T. 2004. Fauna Europaea: Annelida, Oligochaeta (limnic). Fauna Europaea, version 1.1, <http://www.faunaeur.org>.
- Timm, T. 2009. A guide to the freshwater Oligochaeta and Polychaeta of Northern and Central Europe. Lauterbornia 66: 1-235.