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**Diversity of Oligochaeta worms (Annelida) in Madatapa lake (South Georgia)**  
**Shubitidze Zhanetta<sup>1</sup>, Japoshvili Bella<sup>1</sup>, Pataridze Avalo<sup>1</sup>, Bikashvili Ani<sup>1</sup>, Gabelashvili Sophio<sup>1</sup>,  
 Mumladze Levan<sup>1,2,3</sup>**

<sup>1</sup>*Institute of Zoology, Ilia State University, 3/5 Cholokashvili Ave., Tbilisi, 0162, Georgia*

<sup>2</sup>*Invertebrate Research Center, Agladze #26, Tbilisi-0119, Georgia.*

<sup>3</sup>*Biodiversity Research Center, Institute of Ecology, Ilia State University, 3/5, Cholokashvili Ave., Tbilisi, 0162, Georgia*

**Abstract.** In this article we report the results of investigation of Oligochaeta worms of Madatapa lake. In total 23 species belonging to 5 families were identified. Among them 20 species are new record for Madatapa lake and *Aulophorus furcatus* (Oken, 1815) is a new record for the Javakheti region

### Introduction

Madatapa Lake (Fig.1) is a part of Javakheti Protected Areas and is considered as one of the most important wetland area in the region [1]. It is shallow, high mountain lake (2108m asl) with a surface area of 8.78 km<sup>2</sup> and mean depth of 1.5m. The first work on Oligochaeta fauna of Madatapa was published in 1961 [2] where the occurrence of three taxon (*Tubifex tubifex*, *Stylaria lacustris*, and - *Nais* sp.) were reported. In 2016 article by Gabelashvili et al. (2016) [3] five families of Oligochaeta (Naididae, Lumbriculidae, Enchytraeidae, Propappidae and Haplotaxidae) were listed for Madatapa without species accounts. In this article we provide a complete list of Oligochaeta species found in lake Madatapa obtained during the recent intensive field sampling.



**Fig. 1 Map of Georgia and the location of Madatapa lake**

### Materials and Discussion

Fifty-four benthic samples were collected between 2015 and 2016 years seasonally except winter. Samples were collected by 0.5mm mesh size kicknet and preserved in 70% ethyl alcohol, then sorted and identified under a microscope. Photos of whole organisms as well as of the separated parts of the body, carrying identification signs, were made. For taxonomical identification of the Oligochaeta specimens Chekanovskaya (1962) [4] and Timm (2009) [5] were used, classification of Tibificidae follows the

ICZN rules – a farewell to Tubificidae by Erseus, Wetzel & Gustavsson [6]. In total 23 species, represented by 14 genus and 5 families were identified. One species *Aulophorus furcatus* (Oken, 1815) is a new record for the Javakheti region. During the whole study period dominant family was Naididae (83%), followed by Lumbriculidae (13%), Enchytraeidae (2.4%), Propappidae (0.3%) and Haplotaxidae (0.3%).

Species Checklist:

**Subclass: Oligochaeta Grube, 1850**  
**Order: Haplotaxida Brinkhurst, 1971**  
**Suborder: Tubificina Vejdovsky, 1884**  
**Family: Naididae Ehrenberg, 1828**  
**Subfamily: Naidinae Ehrenberg, 1828**

**Genus: Aulophorus Schmarda, 1861**

1. *A. furcatus* (Oken, 1815)

**Genus: Nais Müller, 1774**

2. *N. barbata* Müller, 1774
3. *N. behningi* Michaelsen, 1923
4. *N. communis* Piguet, 1906
5. *N. pardalis* Piguet, 1906
6. *N. pseudobtusa* Piguet, 1906
7. *N. simplex* Piguet, 1906
8. *N. variabilis* Piguet, 1906

**Genus: Ophidonais Gervais, 1838**

9. *O. serpentina* (O.F. Müller, 1773)

**Genus: Pristina Ehrenberg, 1828**

10. *P. bilobata* (Bretscher, 1903)
11. *P. menoni* (Aiyer, 1929)

**Genus: Stylaria Lamarck, 1816**

12. *S. fossularis* Leidy, 1852
13. *S. lacustris* (Linnaeus, 1767)

**Subfamily Tubificinae Vejdovsky, 1884**

**Genus: Aulodrilus Bretscher, 1899**

14. *A. limnobius* Bretscher, 1899

**Genus: Limnodrilus Claparède, 1862**

15. *L. hoffmeisteri* Claparède, 1862

**Genus: Potamothrix Vejdovský & Mrázek, 1903**

16. *P. hammoniensis* (Michaelsen, 1901)
17. *P. paravaniensis* Poddubnaya et Pataridze, 1989

**Genus: Spirosperma Eisen, 1879**

18. *S. ferox* Eisen, 1879
19. *S. apapillatus* Lastochkin & Sokolskaya 1953



**Genus: Tubifex Lamarck, 1816**20. *T. tubifex* Lamarck, 1816**Family Haplotaxidae Michaelsen, 1900****Genus: Haplotaxis Hoffmeister, 1843**21. *H. gordioides* (Hartmann, 1821)**Order Lumbriculida brinkhurst, 1971****Family Lumbriculidae Vejdovsky, 1884****Genus Lumbriculus Grube, 1844**22. *L. variegatus* (Müller, 1774)**Order Enchytraeida****Family Propappidae Coates, 1986****Genus: Propappus Michaelsen, 1905**23. *P. glandulosus* Michaelsen, 1905

Individuals of genus Enchytraeus (Genus Enchytraeus Henle, 1837, Family: Enchytraeidae Vejdovsky, 1879) could not identified to species level, however this genus is new record for Madatapa lake.

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**References**

1. Javakheti guide. (2014). Editors: Japaridze R, Malazonia, N; Tbilisi, 78 pp.
2. Tskhomelidze O, Sergeeva Z & Ovinnikova V. (1961). Food resources of high mountain lakes: Madatapa, Khanchali and Bareti. Proceedings of the scientific research fishery station of GeorgiaVI: 38–48.
3. Gabelashvili S., Bikashvili A., Shubitidze Zh., Gioshvili M., Pankvelashvili E., Mumladze L., Japoshvili B. (2016). Family level diversity and distribution of macroinvertebrates of Madatapa, Khanchali and Bughdasheni lakes in javakheti plateau (South Georgia). Proceedings of the Institute of ZoologyXXV: 117–128.
4. Chekanovskaja O. (1962). Water small-bristle worms of the fauna of SSR . Academy of the Sciences of SSR, Moscow. 411pp.
5. Timm T. (2009) A guide to the freshwater Oligochaeta and Polychaeta of Northern and Central Europe. Dinkelscherben, Volume 66. 235 pp.
6. Erseus Ch., Wetzel M. J., & Gustavsson L. (2008). ICZN rules—a farewell to Tubificidae (Annelida, Clitellata). Zootaxa 1744: 66–68