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First record of the neozoan species *Branchiodrilus hortensis* (Stephenson, 1910) (Oligochaeta, Naididae) from Slovakia

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With 3 figures and 1 table

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Schlagwörter: Branchiodrilus, Oligochaeta, Neozoen, Donau, Slowakei, Erstfund, Verbreitung, Bestimmung

First finding of the neozoan species *Branchiodrilus hortensis* in a side arm of the Danube river in Slovakia with notes on distribution and identification.

1 Introduction

Branchiodrilus hortensis is one of the known species of the genus. They are characterised by branchiae which possess paired digitiform gills, dorso-lateral in position and enclosing the hair setae (Brinhurst & Jamieson 1971). Untill now *Branchiodrilus hortensis* has been found in Europe only in The Netherlands (apparently introduced) in 2002-2003 at four sites (van Haaren et al. 2005). Originally the species occurs in Asia (India, Pakistan, Burma, China, Japan, Russian Far East, Java and Kalimantan), Australia and Africa (Ghana, Sudan, Zambia) according to Cekanovskay, (1962), Brinhurst & Jamieson (1971) and T. Timm (pers. comm.). Two other species of *Branchiodrilus* - *B. semperi* and *B. cleistochaeta* - have been recorded in South Asia and in French Cameroons respectively(Brinhurst & Jamieson 1971).

2 Material and methods

Oligochaeta were collected in the framework of the Biological monitoring of evaluation of environmental program of Gabčíkovo Water Work. Samples were collected using a kick-net in a side arm of the Danube on 16.07.2008. The specimens were mounted in Canadian balsam and identified.

3 Results and discussion

11 specimens of *Branchiodrilus hortensis* were collected in a branch of the Slovak-Hugarian stretch of River Danube km 1781-1785 (Fig. 1). This side arm separates the island Veľkolélsky ostrov. It is permanently connected with the main channel; during high discharge in main channel the side arm changes its lentic

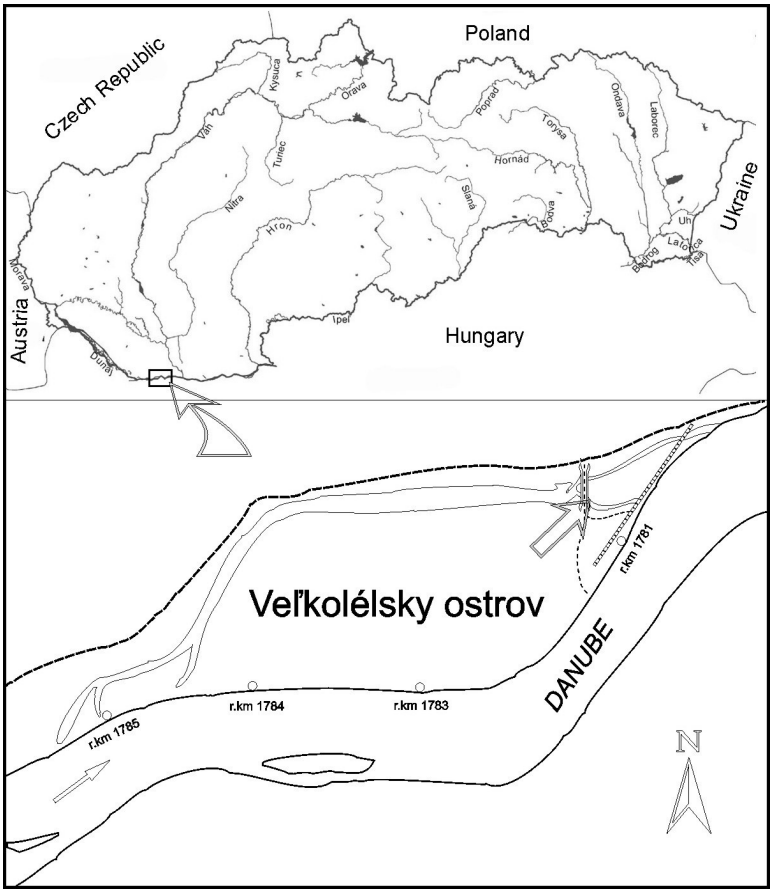

Fig. 1: Sampling site in the Danube side arm (arrow) where *Branchiodrilus hortensis* was found

character to a lotic one. Such a situation was found during the sampling period. The bottom at the sampling site (N 47°45'15.0", E 17°56'58.3") is characterized by coarse sand. The following physical quantities were measured: temperature 18.8 °C, pH 7,9, conductivity 367 μS/cm, dissolved oxygen 7.4 mg/l, saturation 80.35 %.

According to the description given by Sperber (1948), *Branchiodrilus hortensis* is characterized by the gills on nearly all segments from VI onwards (Fig. 2). Dorsal setae 2-5 per bundle, according Cekanovskaja (1962) in dorsal bundles only 1-3 hair setae, the length of longest hair setae may reach 1500 μm (data taken from Stephenson 1910 and Yamaguchi 1938). The hair setae of our Da-

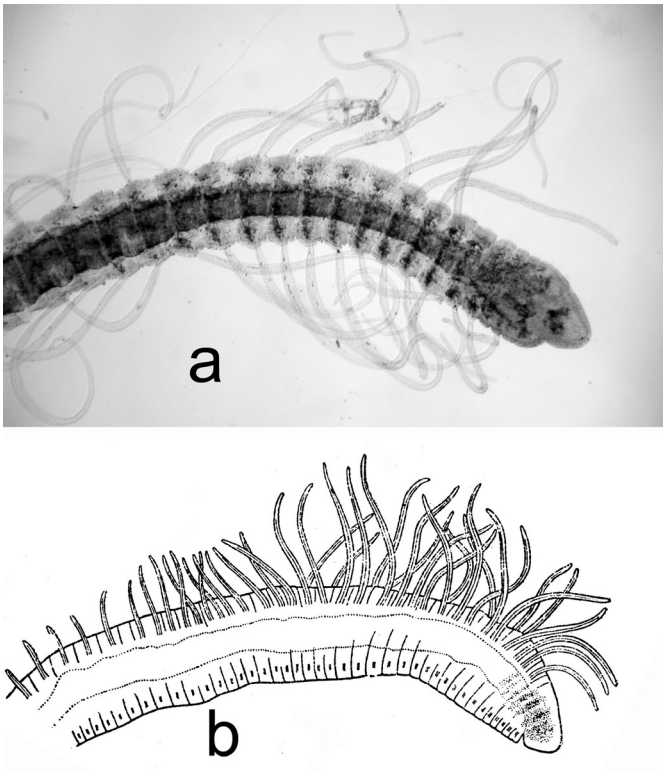

Fig. 2: *Branchiodrilus hortensis*. Anterior end of body with gills. (b taken from Cekanovskaja 1962)

nube specimens are 410-580 μm long. On the anterior part of body hair setae are enclosed within the gills, on posterior part usually one hair is free. In these segments also needles are present, 1-2 per bundle with straight tip, according to Sperber (1948) and Cekanovskaja (1962) 120-200 μm long and 120-230 μm respectively. All ventral seta of one type with distal nodulus and teeth equally long, the distal tooth being thinner (Fig. 3), 130-150 μm long (Sperber 1948) and 130-230 μm (Cekanovskaja 1962), 4-5 setae per bundle (Cekanovskaja 1962; Sperber 1948: not mentioned). In our material specimens showed only 2-3 ventral setae per bundle, 105-130 μm long. Penial setae 2-3 per bundle, with a simple distal hook, 132 μm long according to Sperber (1948), but after Cekanovskaja up to 320 μm. All of our specimens were immature. Timm (2009) gives the following features: length of body 5-50 mm, segment number in the first zooid 29-70, in single individuals 35-135; forebody transversally striped with dark pigment. No eyes present. Able to swim.

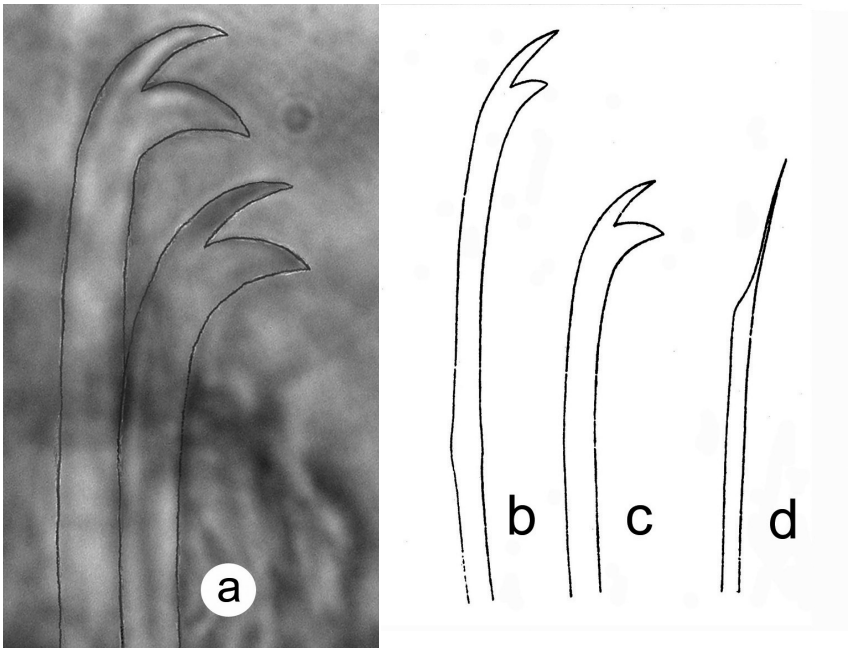

Fig. 3: *Branchiodrilus hortensis*. a = ventral setae of IX. segment, b = ventral setae of X. segment, c = ventral setae of posterior segments, d = needle setae (b-d taken from Cekanovskaja 1962)

We encountered *B. hortensis* only in July 2008 during lotic conditions in the side arms. At a visit in October *B. hortensis* could not been found; the side arms were very shallow with stagnant water and most of the bottom was dry.

At the sampling site in 2008 we registered (3 visits) in total 16 species of Oligochaeta; 6 of them we had found in July 6 (Tab. 1). Dominant were species of the genera *Limnodrilus* and *Psammoryctides* and more juvenile specimens of *Criodrilus lacuum*.

Tab. 1: Oligochaeta found at Veľkolélsky ostrov in 2008. With asterisk: species found in July, together with *B. hortensis*

NAIDIDAE
Branchiodrilus hortensis (Stephenson, 1910)*
Dero digitata O. F. Müller, 1773
Nais barbata (O. F. Müller, 1773)
Nais communis Piguet, 1906
Nais christinae Kasprzak, 1973
Nais pardalis Piguet, 1906
Nais pseudobtusa Piguet, 1906
Ophidonais serpentina (O. F. Müller, 1773)
Stylaria lacustris (Linnaeus, 1767)

TUBIFICIDAE
Limnodrilus claparedeianus Ratzel, 1868
Limnodrilus hoffmeisteri Claparède, 1862 *
Limnodrilus udekemianus Claparède, 1862 *
Psammoryctides barbatus (Grube, 1861) *
Psammoryctides moravicus (Hrabě, 1934) *
CRIODRILIDAE
Criodrilus lacuum Hoffmeister, 1845 *
ENCHYTRAEIDAE
Marionina riparia Bretscher, 1899

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