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Two new stygobiont snail species (Gastropoda, Hydrobiidae) from a spring in West Bulgaria

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Abstract

One new species of the genus *Bythiospeum* and one new species of the genus *Devetakia* from West Bulgaria, village of Bankya, Tran town area were described and the holotypes have been depicted.

Key words: Subterranean, new species, Gastropoda, Bulgaria.

Introduction

The Bulgarian stygofauna is one of the richest in Europe (Beron *et al.* 2009). Till now there are more than 30 species of snails known to inhabit the underground waters of the country (Georgiev & Hubenov 2013). Most of them have been described only by the shell morphology because living specimens could not be found. Thus the assignment of the species to the genus groups can only be provisional.

In this paper we describe two new species of stygobiotic snails from the genera *Bythiospeum* and *Devetakia* found only as empty shells in spring deposits of West Bulgaria, near the Serbian border.

The genus *Devetakia* differs from the genus *Bythiospeum* by the round shape of the aperture, its simple outer lip, not so pointed shell apex and more convex whorls (Georgiev & Glöer 2011). Because the two species described here as new differ in its size and the apex we designated these species to the genus *Bythiospeum* and *Devetakia*.

Material and Methods

The shells were collected by sieving the spring deposits by sieves. The measurements were carried out by using a stereo microscope (Zeiss) and an eye-piece micrometer, the photographs were made with a Leica digital camera system. The photographs were taken with a camera system with a digital adapter.

The material is stored in the Zoological Museum of Hamburg (ZMH), Germany. Abbreviations used: H - shell height, W - shell width.

Systematics

Family Hydrobiidae Troschel, 1857

***Bythiospeum juliae* n. sp.**

(Fig. 1)

Material examined: 4 shells, from the type locality, 20.08.2014, Dilian Georgiev leg.

Holotype (ZMH): H = 2.1 mm, W = 1.1 mm (Fig. 1).

Paratypes (ZMH): 3 shells.

Locus typicus: Bulgaria, spring on the left bank of Yablanitsa River, southwest of village of Bankya, Tran town area, 42°50'53.3" N, 22°40'43.7" E, 640 m alt.

Etymology: The species is named after Dilian Georgiev's mother Julia Georgieva.

Description: The shell is elongate-conical to almost cylindrical with 5-5.5 slightly rounded whorls that have shining surface. The apex is rounded, the umbilicus is closed. The aperture is ovoid to slightly pear-shaped with a simple lip. The operculum and the soft body are unknown. H = 1.8-2.1 mm, W = 0.9-1.1 mm.

Differentiating features: In comparison to all known *Bythiospeum* species from Bulgaria (Georgiev & Glöer 2013) and Serbia (Radoman 1983), *B. juliae* n. sp. is unique by having very fast growing whorls of the shell.

Habitat and ecology: Stygobiotic species found only as empty shells among sand deposits of a spring emerging from rocks, at a river bank. The area was occupied by broad leaf forest dominated by *Fagus sylvatica*, *Carpinus* sp., and *Alnus glutinosa*.

Distribution: Bulgaria, known only from its type locality (Fig. 3).



Figure 1. Holotype of *Bythiospeum juliae* n. sp.: shell.

***Devetakia veselinae* n. sp.**

(Fig. 2)

Material examined: 9 shells, from the type locality, 20.08.2014, Dilian Georgiev leg.

Holotype (ZMH): H = 1.6 mm, W = 0.8 mm (Fig. 1).

Paratypes (ZMH): 4 shells.

Locus typicus: Bulgaria, spring on the left bank of Yablanitsa River, southwest of village of Bankya, Tran town area, 42°50'53.3" N, 22°40'43.7" E, 640 m alt.

Etymology: The species is named after Dilian Georgiev's wife Veselina Ivanova.

Description: The shell is very small, elongate-conical to almost cylindrical with 4 rounded whorls that have shining surface. The apex is rounded, the umbilicus is opened. The aperture is rounded to slightly ovoid with a simple lip. The operculum and the soft body are unknown. H = 1.3-1.7 mm, W = 0.7-0.8 mm.



Figure 2. Holotype of *Devetakia veselinae* n. sp.: shell.

Differentiating features: From all known species from the genus *Devetakia*, the new species by its thin apertural lip and almost cylindrical shell is most similar to *D. mandrica* Georgiev, 2012 from which it differs by its smaller size (H < 1.6 mm; H = 1.7-2.0 mm in *D. mandrica*).

Habitat and ecology: Stygobiotic species found only as empty shells among sand deposits of a spring emerging from rocks, at a river bank. The area was occupied by broad leaf forest dominated by *Fagus sylvatica*, *Carpinus* sp., and *Alnus glutinosa*.

Distribution: Bulgaria, Known only from its type locality (Fig. 3).



Figure 3. The spring emerging from rock crevices along Yablanitsa River - type locality of *Bythiospeum juliae* n. sp. and *Devetakia veselinae* n. sp. (exact sampling site pointed by an arrow).



Figure 4. Position of the sampling site of the two new stygobiotic snail species described.

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