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Original Article

New species of stygobiotic *Belgrandiella* from north Bulgaria (Gastropoda: Hydrobiidae)

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***Abstract*:**
Georgiev, D.: ***New species of stygobiotic Belgrandiella from north Bulgaria (Gastropoda: Hydrobiidae). Biologica Nyssana, 3 (2), December 2012: 105-107.***

A new stygobiotic species of *Belgrandiella* from a cave in north Bulgaria was described. Nine shells were collected by the author on 09.03.2013 at the entrance of the Water cave (Vodnata) near village of Musina, north Bulgaria, N43 13 14.9 E25 25 39.6, 198 m alt. The systematic position of the genus *Belgrandiella* was also discussed.

Key words: aquatic, Bulgaria, endemic, subterranean, snail

Introduction

The genus *Belgrandiella* Wagner, 1927 (Gastropoda: Risooidea) consists of minute snails inhabiting the springs and the subterranean waters of south-west and central Europe to the Caucasus (Kabat, Hersler, 1993; Arconada, Ramos, 2003). This is one of the most diverse genera from the Risooidea superfamily in Bulgaria having 11 species known till now (Georgiev, 2011a, Georgiev, 2013). There are two ecological groups of species from the genus: stygobiotic (*Belgrandiella hessei* Wagner, 1927, *Belgrandiella pusilla* Angelov, 1959, *Belgrandiella bulgarica* Angelov, 1972, *Belgrandiella bureschi* Angelov, 1976, *Belgrandiella stanimirae* Georgiev, 2011, *Belgrandiella maarensis* Georgiev, 2013) and spring-living species (*Belgrandiella angelovi* Pintér, 1968, *Belgrandiella zagoraensis* Glöer & Georgiev, 2009, *Belgrandiella dobrostanica* Glöer & Georgiev, 2009, *Belgrandiella bachkovoensis* Glöer & Georgiev, 2009, *Belgrandiella pandurskii* Georgiev, 2011, the last one also found in cave waters) (Wagner, 1927; Angelov, 1959, 1972, 1976; Pintér, 1968; Hubenov, 2005, 2007; Glöer, Georgiev, 2009; Georgiev, 2011b, c, d).

In this paper I describe a new stygobiotic species of *Belgrandiella* from a cave in north Bulgaria showing that the subterranean waters of the country are still poorly known considering their fauna and many new species could be found in further research.

Material and methods

The shells were collected by sieving the cave river deposits by 1x1 and 2x2 mm width of the mesh sieves. The material from the smaller meshed sieve was then brought to the laboratory and dried. After that it was again put into water and the floating shells were collected by a strainer and small brush. The measurements were carried out by means of CETI stereo microscope and an eye-piece micrometer, and photographs were made with camera system with a digital adapter. The material is stored in the National Museum of Natural History, Sofia, Bulgaria.

Abbreviations used: H - shell height, W - shell width, AH - aperture height, AW - aperture width, LH - last whorl height.

Table 1. Shell measurements of *Belgrandiella hubenovi* n. sp. (for abbreviations see "Materials and Methods")

N	H	W	AH	AW	LH	W/H	AH/H	AW/AH	LH/H
1	1.49	0.76	0.54	0.54	1.06	0.51	0.37	1.00	0.71
2	1.49	0.89	0.56	0.56	1.02	0.60	0.38	1.00	0.69
3	1.67	0.89	0.63	0.59	1.12	0.53	0.38	0.95	0.67
4	1.73	0.99	0.71	0.63	1.19	0.57	0.41	0.88	0.69
5	1.55	0.89	0.56	0.59	1.12	0.57	0.36	1.06	0.72
6	1.62	0.86	0.63	0.59	1.12	0.53	0.39	0.95	0.69
7	1.49	0.87	0.56	0.59	1.09	0.59	0.38	1.06	0.73
8	1.68	0.87	0.63	0.59	1.19	0.52	0.37	0.95	0.71
Average	**1.59**	**0.88**	**0.60**	**0.59**	**1.11**	**0.55**	**0.38**	**0.98**	**0.70**

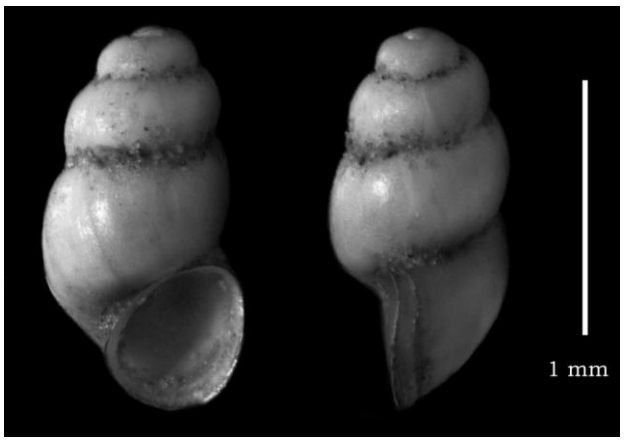

Fig. 1. Front and side view of the holotype of *Belgrandiella hubenovi* n. sp.

Results and discussion

Genus *Belgrandiella* Wagner, 1927
Type species: *Belgrandia kusceri* Wagner, 1914

Belgrandiella hubenovi n. sp.

Material examined: 9 shells, 09.03.2013, the Water cave (Vodnata) near village of Musina, north Bulgaria, N43 13 14.9 E25 25 39.6, 198 m alt., D. Georgiev leg.
Holotype: H = 1.49 mm, W = 0.76 mm, AH = 0.54 mm, AW = 0.54 mm, LH = 1.06
Paratypes: 3 shells, National Museum of Natural History, Sofia, Bulgaria, 5 shells coll. D. Georgiev.
Locus typicus: Water cave near village of Musina, north Bulgaria, N43° 13' 14.9" E25° 25' 39.6", 198 m alt.
Differential diagnosis: By its bent periostome the new species differs from all known Bulgarian species from the genus *Belgrandiella* with an exception of *B. hessei* – another stygobiont known from Temnata Dupka cave near Lakatnik town, about 167 km to the west. From this species *B. hubenovi* n. sp. differs by its smaller size (H max = 1.73 mm versus 2.3 mm in *B. hessei*), and not so thick and developed aperture lip.
Description: Shell: The shell is ovate-conic to ovate-cylindrical, white, whorls are 3-4, regularly growing with, shining surface, with deep suture, fine growth lines sometimes forming small, irregular smooth ribs. The umbilicus is slit-like, the aperture is egg-shaped with sharp periostome which is bent to the outside from the lateral view. The operculum and the soft body are not known. H = 1.49-1.73 mm, W = 0.76-0.99 mm, AH = 0.54-0.71 mm, AW = 0.54-0.63 mm, LH = 1.02-1.19 mm, W/H = 0.51-0.60, AH/H = 0.36-0.41, AW/AH = 0.88-1.06, LH/H = 0.67-0.73.
Etymology: Named after Assoc. Prof. Dr Zdravko Hubenov (National Museum of Natural History, Sofia, Bulgaria) who contributed so much in the studies of the Bulgarian aquatic malacofauna and paid me attention of some springs as potential localities of freshwater snails.
Distribution: Known only from the type locality, possibly local endemic species.
Habitat and ecology: A stygobiotic species found only as empty shells in the river deposits at the entrance of Vodnata cave near village of Musina. This cave can be explored only by boat and experienced divers for searching living snails on the bottom substrate of the inner stream.

The systematic position of the genus *Belgrandiella* Wagner, 1927 is unclear. It is referred by various authors to different family groups as Hydrobiidae, Orientalinidae or Belgrandiellidae (Radoman, 1983; Kabat & Hersler, 1993; Angelov, 2000; Arconada & Ramos, 2003). The genus consists of minute Risooid snails with different shell shapes, mainly ovoid-conical but also conical or ovoid and different penis morphology (simple long,

simple short, conical or triangular, or same shape but with one small lobe on the left side). It can be supposed (as for other extremely subterranean genera, for example *Bythiospeum* Bourguignat, 1882) that *Belgrandiella* is a complex of more still undefined genera. However it is a very hard task and sometimes is impossible for the scientists to reach the habitats of some of the stygobiotic species.

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