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New taxa of freshwater snails from Macedonia (Gastropoda: Hydrobiidae, Amnicolidae)

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Received 7 August 2015 | Accepted 13 August 2015 | Published online 15 August 2015.

Abstract

A new representative of a new genus and a new *Bythinella* species have been found in Macedonia, *Sumia macedonica* n. gen. n. sp. and *Bythinella golemoensis* n. sp. The shells of the holotypes and paratypes as well as the penis morphology are depicted.

Key words: new description, Gastropoda, Macedonia.

Introduction

From R. Macedonia only two *Bythinella* species are known so far: *Bythinella drimica drimica* Radoman, 1976 and *Bythinella melovskii* Glöer & Slavevska-Stamenković, 2015, both of which occur at the border to Albania, north of Lake Ohrid (Radoman 1983, Glöer & Slavevska-Stamenković 2015). In the other mountainous surrounding countries many more *Bythinella* species are known: from Croatia to Montenegro and Serbia 12 *Bythinella* spp. (Glöer & Pešić 2014), from Montenegro three species (Glöer & Pešić 2010), and from Bulgaria 21 species (Glöer & Pešić 2006, Georgiev & Glöer 2013, 2014, Georgiev & Hubenov 2013). This indicates that the freshwater molluscs in the abundant springs of R. Macedonia are not well investigated. Only the ancient Lakes Ohrid and Prespa and some springs in their vicinity as Sveti Naum with many endemic species have been in the focus of many malacologists. From springs in the Ohrid basin some endemic species are known, for example *Pyrgohydrobia jablanicensis* Radoman, 1955 which has been described from the (nowadays not accessible) cave just beneath the sampling site of *Sumia macedonica* n. gen. n. sp., which was not found by Radoman.

Material and Methods

The living animals were collected by hand from stones in the artificial lake in front of the Šum spring and from stones in the springs near Golemo Ezero. Photos of the habitat and living animals were taken by A.C. Mrkvicka and I. Drozdowski. The measurements were carried out by means of ZEISS stereo microscope and an eye-piece micrometer. The photographs were taken with a digital camera system (LEICA). Morphological

terms used for descriptions are in accordance with Hershler & Ponder (1998). The material is stored in the National History Museum Vienna (NHMW).



Figure 1. Sampling sites of the new hydrobiid species. 1: Spring Šum, 4 km N of Struga; 2: spring SW and E of Golemo Lake (Pelister National Park).

Systematics

Class **Gastropoda** Cuvier, 1795

Order **Neotaenioglossa** Haller, 1892

Family **Hydrobiidae** Troschel, 1857

Genus ***Sumia*** gen. nov.

Type species: *Sumia macedonica* n. gen. et n. sp.

Description. The shell is ovate-conic with 4-5 whorls. The whorls are slightly convex, the aperture is ovate with a simple outer lip. The penis is long and slender.

Differentiating features: The penis of *Grossuana* spp. resemble that of *Sumia* but the shells are much smaller and the whorls are less convex. *Pyrgohydrobia* Radoman, 1955 has a long triangular penis with a broad basis, very different from *Sumia*. At least no species could be found in the Balkans with a similar morphology of the penis and the shell.

Etymology: Named after the spring Šum where the type species of this genus were collected.

***Sumia macedonica* n. gen et n. sp.**
(Figs 2-10)

Type series. Holotype: shell height 2.95 mm, width 1.8 mm, NHMW Mollusca 111202. Paratypes: 8 specimens in ethanol NHMW Mollusca 111203, 1 shell in collection Glöer.

Locus typicus: Artificial lake at the Spring Šum, 4 km N of Struga, R. Macedonia (41°10'59.27"N 20°37'56.86"E; altitude ca. 700 m)

Etymology: Named after the country where the species lives.

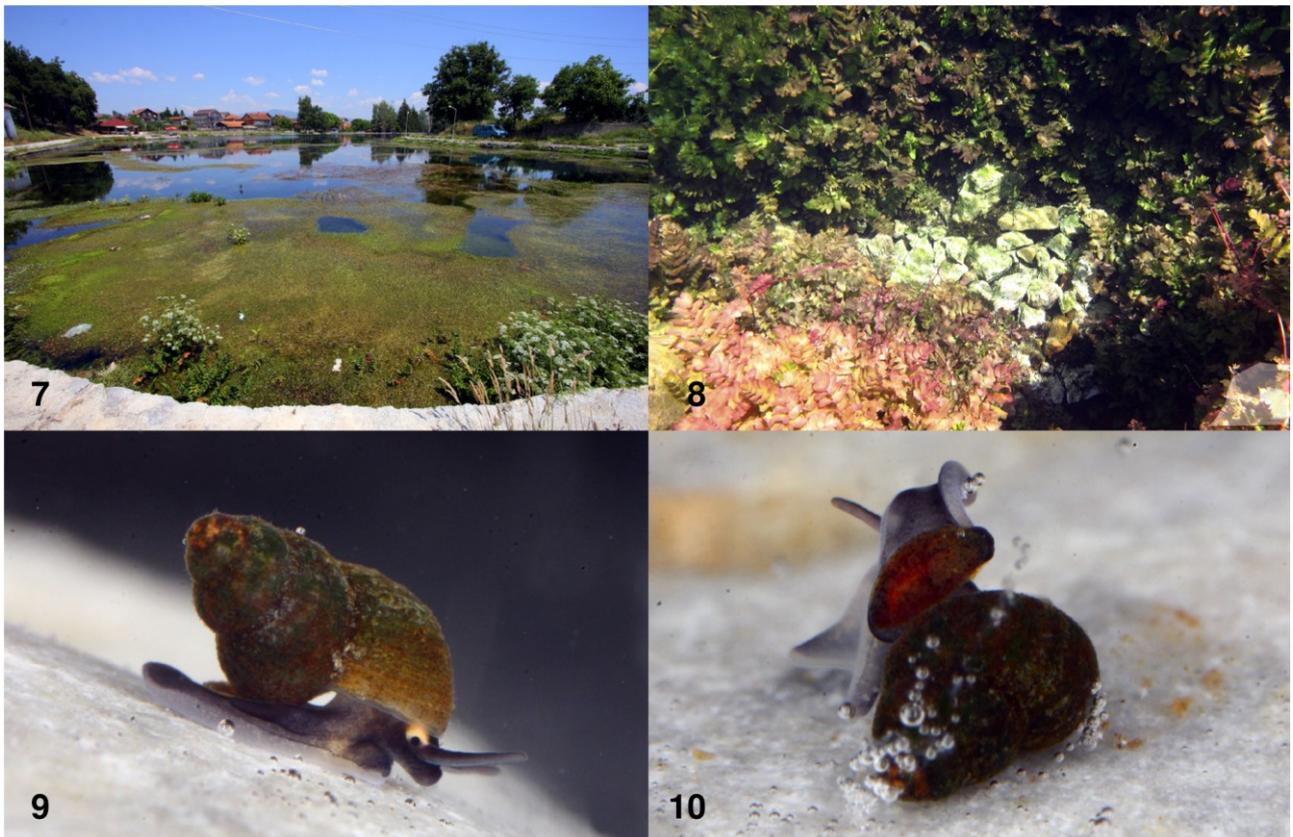


Figures 2-6. *Sumia macedonica* n. sp. 2: Holotype; 3-4: Paratype, 5-6: head with penis in situ.

Description

Shell. The light brown shell is ovate-conic with 4-5 whorls and a deep suture. The surface is rough with fine growth lines. The whorls are slightly convex, the aperture is ovate with a simple outer lip, the periostome is sharp, thickened at the columella. The operculum is reddish-brown, umbilicus is closed. Shell height 2.9-3.1 mm, width 1.8 mm.

Animal. The mantle is grayish black, the snout is white, the black eyes are surrounded by white areas. The tentacles are cylindrical, long and rounded at the tip.



Figures 7-10. *Sumia macedonica* n. gen. n. sp.: 7: artificial lake at the locus typicus; 8: stones on the ground of the lake inhabited by *Sumia macedonica*, 9-10: living animals of *Sumia macedonica* n. sp.

Morphology of the penis. The penis is long and slender without any outgrowth, usually bent twice (fig. 6), not pigmented and sharply tapered at the distal end.

Habitat and ecology: The powerful cold spring emerges from a cave, it is fed by carstic waters from Jablanica mountains. Due to the drinkwater catchment supplying the city of Struga, the cave is not accessible. In front of the cave an artificial lake (1-3 m deep, size about 150x50 meters) with concrete walls and stony ground contains clear and cold water from the springs. Growth of aquatic macrophytes (*Ranunculus trichophyllos*, *Berula erecta*, *Myriophyllum spicatum*) is abundant, *Sumia macedonica* was observed on and under stones in the lake and in the watercourse from the cave/water catchment to the lake.

Distribution: Only known from type locality.

Family **Amnicolidae** Tryon, 1863

Genus *Bythinella* Moquin-Tandon, 1856

Bythinella golemoensis n. sp.
(Figs 11-18)

Type series: Holotype: shell height 2.7 mm, width 1.6 mm, NHMW Mollusca 111204; Paratypes: (i): spring SW of Golemo Lake, 22 specimens in ethanol NHMW Mollusca 111205, 3 specimens in coll. Glöer, (ii): spring E of Golemo Lake, 7 specimens in ethanol NHMW Mollusca 111256.

Locus typicus: spring SW of Golemo Lake, Pelister National Park, Macedonia. (40°58'08.31"N 21°12'25.16"E; altitude 2218 m)

Etymology: Named after the Lake near the springs where this species occurs.

Description

Shell. Shell cylindrical with 4.5 convex whorls with a moderately deep suture. The whorls are fast growing. Apex obtuse, umbilicus closed. Aperture oval. Shell height 2.7-2.9 mm, width 1.6–1.7 mm, aperture height to shell height ratio 0.39-0.44.

Soft body. Mantel black with a white border, tentacles long and thin.

Morphology of the penis. Penis as long as the penial appendix, flagellum relative short and regularly thick.



Figures 11-14. *Bythinella golemoensis* n. sp. **11:** shell of holotype; **12:** shell of paratype from (2); **13:** head and penis in situ; **14:** penis with tubular gland (flagellum).

Differentiating features: From *Bythinella drimica drimica*, it differs in shell morphometry: shell height 1.97-2.31 in *B. d. drimica* vs. 2.7-2.9 mm in *B. golemoensis* n. sp., and shell width 1.13-1.30 in *B. d. drimica* vs. 1.6-1.7 mm in *B. golemoensis* n. sp. (measurements of *B. d. drimica* after Radoman 1983). The umbilicus in *B. d. drimica* is slit-like, closed in *B. golemoensis* n. sp. From *B. melovskii* it differs in aperture height to shell height ratio which is in *B. melovskii* 0.44-0.47 and 0.39-0.44 in *B. golemoensis* n. sp. In addition the penis is longer than in *B. melovskii* while the tubular gland is shorter.

Habitat and ecology: The cold springs where *B. golemoensis* lives are situated at the foot of a natural dam and fed by the lake, which is situated above the dam. The water emerges from the base of the dam at about 120 m length. Vegetation is like in alpine springs with abundant growth of mosses on and between stones. Living *B. golemoensis* were found on and under stones. Water temperature was about 8°C in July. In Bulgaria *Bythinella* spp. could not be found above 2000 m alt.

Distribution: Only found in cold springs near Golemo Ezero (“Large Lake”) in NP Pelister, Rep. Macedonia.



Figures 15-18. *Bythinella golemoensis* n. sp. **15:** shell of holotype; **16:** shell of paratype from (2); **17:** head and penis in situ; **18:** penis with tubular gland (flagellum).

Acknowledgements

The authors would like to thank Anita Eschner for lending us the materials of the collection of NHMW. AM wishes to thank gratefully: Svetozar Petkovski, PhD, Curator of the Museum of Natural History in Skopje, Rep. Macedonia, for his support of our journeys to Macedonia with his expert knowledge and his contacts to authorities. Dr. Marjan Komnenov, PhD, (Skopje, Rep. Macedonia) for accompanying and guiding us to the most beautiful, most interesting and very often hidden nature treasures of the Rep. Macedonia. MMag. Irene Drozdowski (Perchtoldsdorf, Austria) for always finding the most interesting habitats and even the smallest, nearly invisible snails in their hidden places! In addition we like to thank two anonymous reviewers for the helpful comments.

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