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## Two new *Bythinella* species from Romania (Gastropoda: Amnicolidae)

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Received 5 November 2015 | Accepted 10 November 2015 | Published online 11 November 2015.

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### Abstract

Recently collected samples of freshwater molluscs from springs in NW and SW Romania revealed two new *Bythinella* spp. which are here described as new for science. The holotypes and paratypes are depicted as well as the penis morphology. Of one species only empty shells could be found.

**Key words:** *Bythinella*, taxonomy, new species, spring habitat, Romania.

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### Introduction

Many representatives of the genus *Bythinella* have been described from Romania recently (Falniowski *et al.* 2009, Glöer 2013). Before 2009 only *B. molcsanyi* H. Wagner, 1941 and *B. dacica* Grossu, 1949 have been known from Romania (Falniowski *et al.* 2009, Glöer 2013). In some springs two distinct species occur, e.g. *B. grossui* and *B. molcsanyi* in the Ignis Plateau in Maramures county as well as *B. molcsanyi* and *B. feheri* Glöer, 2013 (Glöer 2013) also in Maramures, while other species are widespread like *B. grossui* and *B. molcsanyi*.

This paper is intended to describe the new *Bythinella muranyii* n. sp. and *B. gregoi* n. sp.

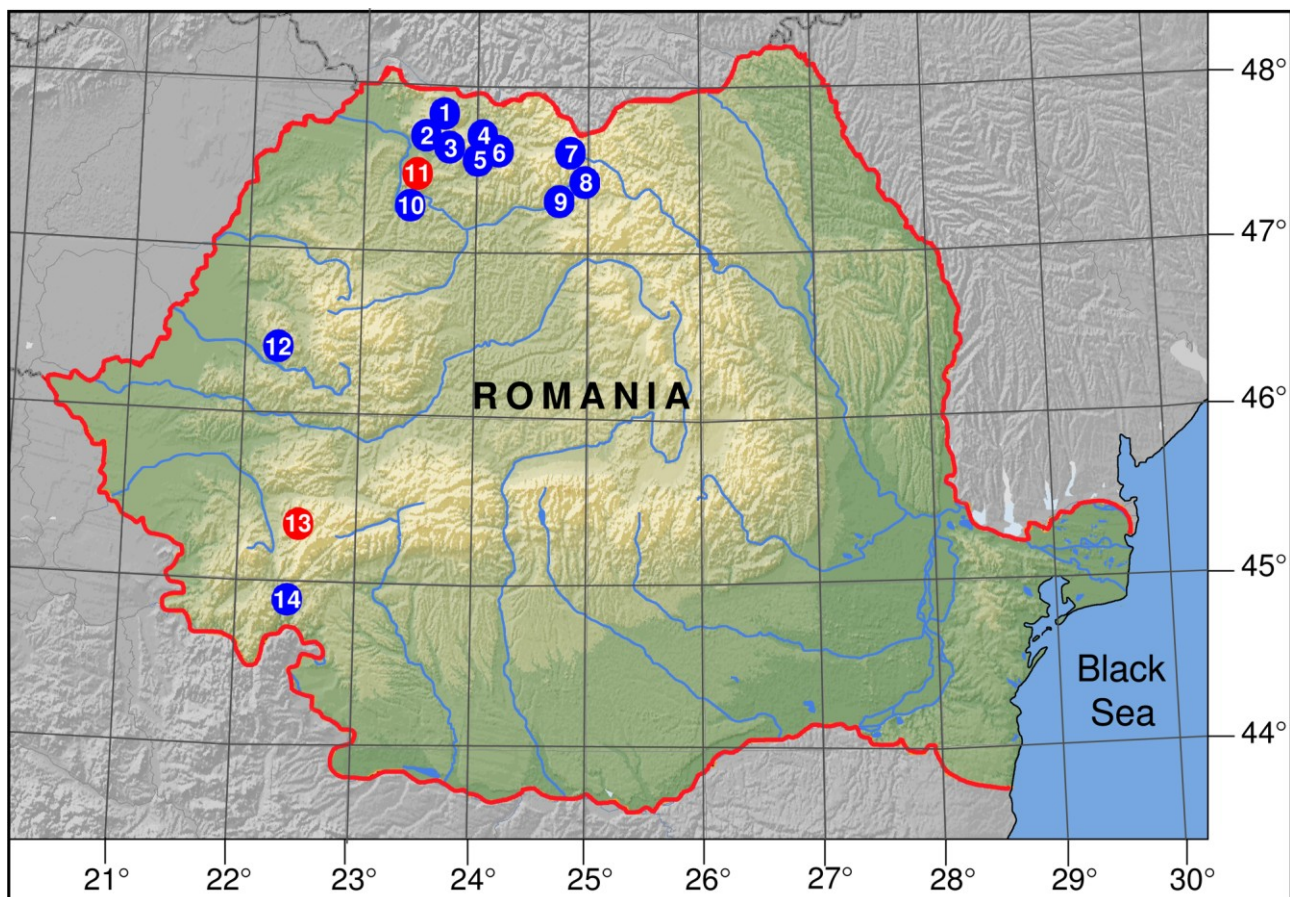
### Material and Methods

The snails were collected recently in Romania (fig. 1) by the junior author by sieving and by hand and fixation in 75% ethanol. The dissections and measurements of the genital organs and the shells were carried out using a stereo microscope (ZEISS); the photographs were made by a digital camera system (Leica R8).

The following abbreviation is used: HNHM (Hungarian National History Museum, Budapest).

### Systematics

Family **Amnicolidae** Tryon, 1863



**Figure 1.** Sampling sites of *Bythinella* spp. in Romania. 1: *B. georgievi* Glöer 2013, 2: *B. blidariensis* Glöer 2013, 3: *B. sirbui* Glöer 2013, 4: *B. feheri* Glöer 2013, 5: *B. falniowskii* Glöer 2013, 6: *B. grossui* Falniowski, Szarowska et Sirbu 2009, 7: *B. viseuiana* Falniowski, Szarowska et Sirbu 2009; 8: *B. calimanica* Falniowski, Szarowska et Sirbu 2009, 9: *B. viseuiana* Falniowski, Szarowska et Sirbu 2009, 10: *B. szarowskiae* Glöer 2013, 11: *B. gregoi* n. sp. 12: *B. radomani* Falniowski, Szarowska et Sirbu 2009, 13: *B. muranyii* n. sp., 14: *B. dacica* Grossu 1946 (type locality).

Genus *Bythinella* Moquin-Tandon, 1856

Type species: *Bulimus viridis* Poiret, 1801

***Bythinella muranyii* n. sp.**

(Figs 2-5, Fig. 1)

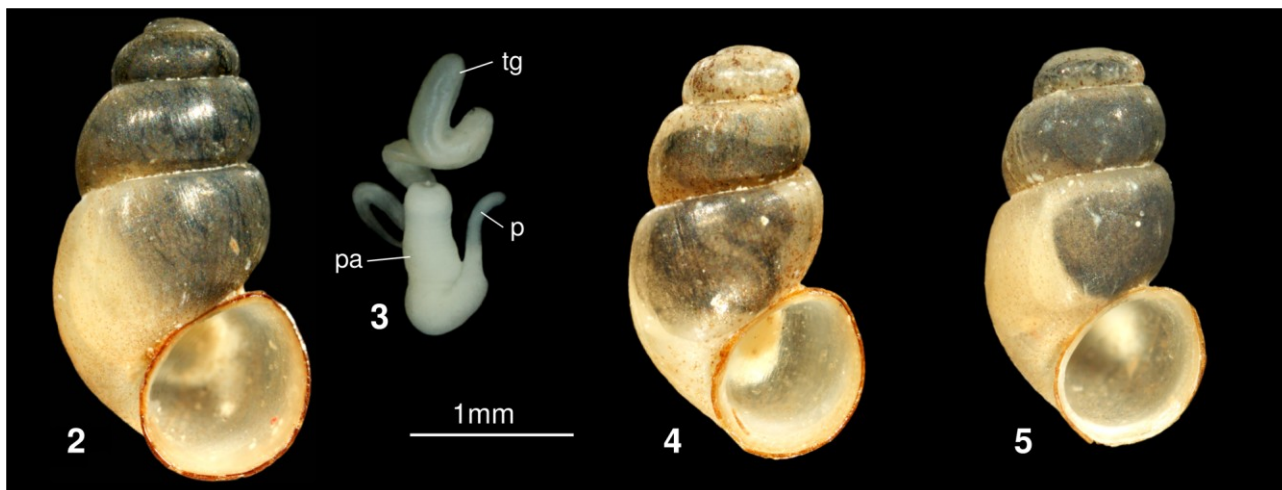
**Holotype:** 2.9 mm height, 1.6 mm width, NHMH 99695.

**Paratypes:** 17 sp. NHMH 99696, 5 sp. coll. P. Glöer, 3 sp. coll. J. Grego.

**Type locality:** Romania, Caraş-Severin County, Ţarcu Mts, spring and its outlet at Cuntu Meteorological Station; 1465 m alt., N45°18.008' E22° 30.059'; 09.06.2011 T. Kovács, D. Murányi & G. Puskás leg.

**Etymology:** Named after Dávid Murányi entomologist, who collected this new species.

**Description:** The yellowish-brown shell has 4.5 whorls which are slightly convex with a deep suture. The shell is elongated cylindrical-ovate. The aperture is ovate and lightly angled at the top. The peristome is sharp and not thickened at the columella. The umbilicus is closed. Aperture height to shell height: 0.4, height of body whorl to height of spire 1.5-1.7, shell height 2.3-2.9 mm, width 1.3-1.6 mm.



**Figures 2-5.** *Bythinella muranyii* n. sp. **2:** Holotype, **3:** penis with tubular gland. **4-5:** Paratypes; abbreviations: p: penis, pa: penial appendix, tg: tubular gland (flagellum).

**Animal:** The mantle is black with a white boarder, eye spots are visible.

**Male copulatory organ:** The penial appendix is as long as the penis. The tubular gland is long, thin at the proximal end and thick at the distal end.

**Differentiating features:** The new species differs from *B. dacica* by the much more slender penis depicted by Falniowski et al. (2009: p. 25) and the shell height to shell width ratio which is in *B. dacica* 1.6-1.7 while it is in *B. muranyii* n. sp. 1.8. In *B. gregoi* n. sp. the shell is larger and the tubular gland is shorter and thick at the proximal end, while it is in *B. muranyii* thin at the proximal end. From *B. reginae* n. sp. it differs in size.

**Ecology:** The specimens were collected from stones in the spring outlet. The spring has rather cold water, shaded by some close conifers. There are water pipes for water collection but the outlet brook is open; the spring has permanent free outflow (Fig. 14).

**Distribution:** Only known from type locality.

**Remark:** Grossu (1946) mentioned in the original description of *B. dacica* a shell width of 1-1.2 mm while the shells depicted by Falniowski *et al.* (2009: p. 23) have a width of 1.3-1.4 mm. Thus we do not know if the species Falniowski *et al.* (2009) worked on are *B. dacica* in fact.

### ***Bythinella gregoi* n. sp.**

(Figs 6-9, Fig. 1)

**Holotype:** 2.7 mm height, 1.4 mm width, NHMH 99693.

**Paratypes:** 15 sp. NHMH 99694, 4 sp. coll. Glöer, 3 sp. coll. Grego.

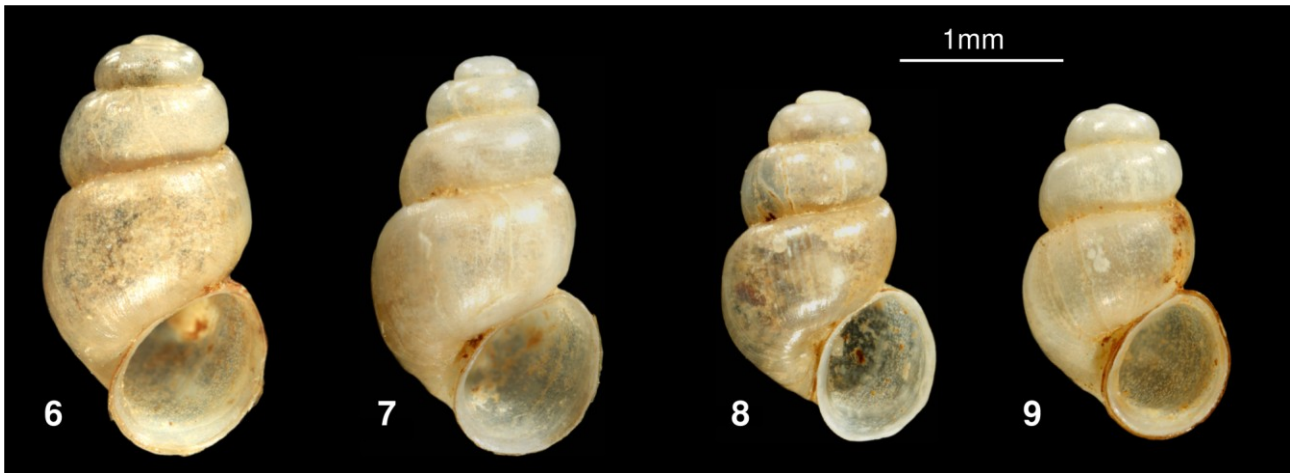
**Type locality:** Romania, Salaj county, 3,7 km SE of Vălișoara (Dióspatak), below the lowest pond, spring, right side of the brook. N47.356° E23.428°; 15.07.2015 Eröss et Kenéz leg.

**Etymology:** The species is dedicated to the junior author's friend and colleague Jozef Grego, Malacologist of Horná Mičiná, Slovakia in honor to his engagement in Hydrobiidae studies.

**Description:** The horn-colored shell has 4.5 whorls which are slightly convex with a deep suture. The shell is elongated cylindrical-ovate. The aperture is ovate and slightly angled at the top. The peristome is sharp.

The umbilicus is slit-like to closed. Aperture height to shell height: 0.4, shell height to shell width 1.6-1.9, height of body whorl to height of spire 1.9-2.1, shell height 2.2-2.6 mm, width 1.3-1.4 mm.

**Male copulatory organ:** unknown.



**Figures 6-9.** *Bythinella gregoi* n. sp. **6:** Holotype. **11-13:** Paratypes.

**Differentiating features:** The shells are smaller than the other species of this region. In addition the shells differ in the ratio of height of body whorl to spire.

**Ecology:** The spring has cold water, shaded by some close conifers. There are water pipes for water collection but the outlet brook is open.



**Figure 10.** Sampling site of *Bythinella muranyii* n. sp.

**Distribution:** Only known from type locality.

**Remark:** We could only find empty shells of this species. Thus this species possibly lives in the underground of this spring.

#### **Acknowledgements**

We are grateful to J. Grego for his useful comments, to L. Forró for his help in organising the Romanian field-trips. Thanks are due to my colleagues, A. Gubányi, A. Kenéz, T. Kovács, D. Murányi and G.Puskás, for their help during the field work. In addition we like to thank two anonymous reviewers for their helpful comments.

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