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A new *Pseudobithynia* and a new *Bythinella* species, with some additional new records of gastropods (Gastropoda: Bithyniidae, Bythinellidae) from Greece

Peter Glöer[1*] & Anastasios Porfyris[2]

[1] *Schulstraße 3, D-25491 Hetlingen, Germany,* [2] *Blessa str. 33, 15669 Athens, Greece*

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ABSTRACT

The first citation of *Pseudobithynia euboeensis* out from its type locality is given, proving that the species has actually survived. *Bythinella eleousae* was found again at its type locality, giving the chance to depict the variability of the shells and the morphology of the penis as well. In addition, a new *Bythinella* species from Skyros Island and a new *Pseudobithynia* species from Central Greece are described.

RESUM

Es dona a conèixer la primera citació fora de la seva localitat típica de *Pseudobithynia euboeensis*, que demostra que l'espècie hauria sobreviscut. *Bythinella eleousae* va ser trobada a la seva localitat típica, permetent mostrar la seva variabilitat conquiliològica i la morfologia del penis. Addicionalment, es descriuen una nova espècie de *Bythinella* de l'illa de Skyros i una nova espècie de *Pseudobithynia* de Grècia central.

Introduction

The genus *Pseudobithynia* Glöer & Pešić, 2006 is distributed from an isolated population in Croatia (Krka National Park) as far as Lebanon (Glöer & Bößneck 2007). With ten *Pseudobithynia* species (Glöer, 2019), the highest diversity of this genus occurs in Greece. Up to now, from Lebanon only *Pseudobithynia* spp. are known (Glöer *et al.*, 2012), while in all other regions *Bithynia* spp. also occur (Glöer *et al.*, 2007).

The genus *Bythinella* Moquin-Tandon, 1856 is widely distributed in Greece (Glöer, 2022). Recent findings of *Bythinella eleousae* Glöer & Reuselaars, 2020 gave us the opportunity to study this species more in detail. Many islands in the Aegean Sea are inhabited by one or more distinct *Bythinella* spp. (Glöer & Poryfris, 2020), thus it is not a big surprise that a new *Bythinella* species could be found in Skyros, an island never investigated before. Triantis *et al.* (2005) have published only on land snails from this island, while its freshwater malacofauna has not been studied.

Material and methods

The second author (AP) collected the snails in August of 2022 by hand from the surface of dead leaves and small stones in spring swallow water spots. The samples were put into 75% ethanol. The dissections and measurements of the genital organs and the shells were carried out using a stereo microscope (Leica M205C). The photographs were taken with a digital camera (Leica DMC5400). The type material is stored in the Zoological Museum of Hamburg (ZMH).

Results

Systematics
Family Bithyniidae Gray, 1857
Genus *Pseudobithynia* Glöer & Pešić, 2006
Type species: *Pseudobithynia irana* Glöer & Pešić, 2006

***Pseudobithynia euboeensis* Glöer, Falniowski & Pešić, 2010**
(Figure 2A-D)
2010 *Pseudobithynia euboeensis* Glöer, Falniowski & Pešić, p. 182, fig. 3.5-3.8

Type locality: Euboea Island, vicinity of Marmaris village, from a damp meadow (with some small water bodies, formed by the water running from the spring) at the seaside.

Re-description: Shell glossy and light brownish to corneous, surface finely striated, 4.5–5 whorls slightly convex with a deep suture, umbilicus open, the aperture height takes 0.5 of the shell height, peristome sharp, outer margin of aperture a little sinuated. Aa clear dimorphism is not visible. Nucleus of operculum not cochleate. Shell height 5.5–6.5 mm, width 4.3–4.5 mm.

The penis is simple and broad with a small tip.

Remarks: *P. euboeensis* was first collected in 1985 by A. Falniowski, but in 2003 the type locality of this species was badly affected. All the water from the spring was taken out with pumps, and this habitat disappeared (Glöer *et al.*, 2010). Fortunately, this species has a wider distribution and still survives in Central Greece.

*Autor corresponsal.
Adreça electrònica: gloeer@malaco.de

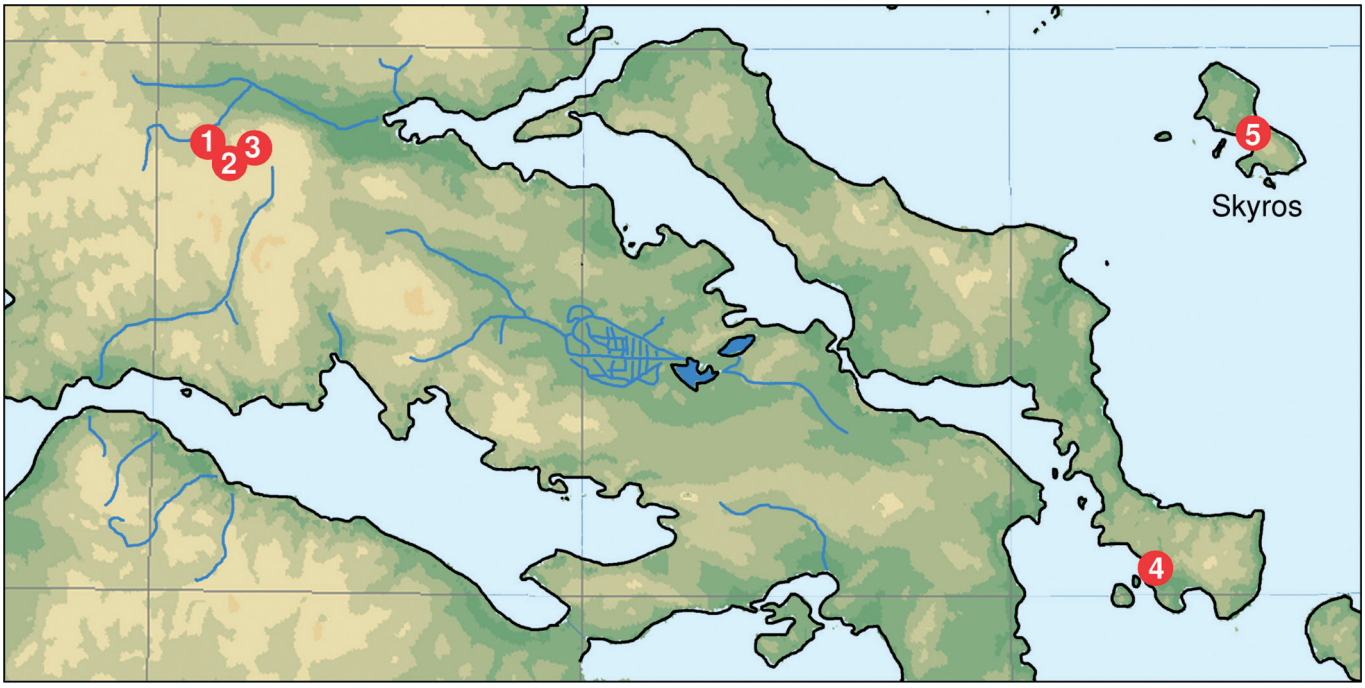

Figure 1. The sampling sites of (1) *Pseudobithynia lilaia* n. sp. (type locality); (2) *Bythinella eleousae*; (3, 4) *Pseudobithynia euboeensis* (4, type locality); (5) *Bythinella deidamiae* n. sp. (type locality).

Pseudobithynia lilaia n. sp.

(Figures 3A-H, 7A)

Type material: holotype (male, shell height 4.59 mm) ZMH 141448; 3 paratypes ZMH 141449; 2 paratypes in coll. Glöer; 5 paratypes in coll. Porfyris, all from type locality.

Type locality: Spring close to Lilaia village, Phocis Mountains, 38°38'26.8"N 22°29'32.0"E.

Etymology: Named after Lilaia village, where the species was found.

Description: The brownish shell is ovate to globular with 4.5 stepped, fast growing whorls. The surface is silky. The aperture is nearly circular, straight from lateral view. The umbilicus is closed. The peristome is sharp. The operculum is concentric with an eccentric, non cochleate, nucleus. There is a sexual dimorphism visible, in which the females are broader. The shell is 4.6-6.0 mm high, and 3.7-4.0 mm broad (male), up to 5.2 mm in females.

The flat penis is very broad with a swelling on the left side.

Differentiating characters: It differs from *Pseudobithynia euboeensis* (which occurs in the same region) in the morphology of the penis, which in *P. euboeensis* has no bulb. In addition, the females in *P. lilaia* are broader than the males, while in *P. euboeensis* the females are not. All other *Pseudobithynia* species in Greece are slimmer and are endemic, except *Pseudobithynia zogari* Glöer, Falniowski & Pešić, 2010, which is widely distributed in the lowlands of Greece. Table 1 displays the morphological differences between the *Pseudobithynia* species of Greece.

Distribution: Only known from the type locality.

Table 1. Some morphological features of the *Pseudobithynia* species of Greece.

Taxon	H : W (male)	H : W (female)	Operculum	Penis with bulb
P. ambrakis	1.8	1.4	not cochleate	no
P. euboeensis	1.4	1.4	not cochleate	no
P. falniowskii	1.6	1.5	cochleate	no
P. gittenbergeri	1.1	1.1	cochleate	unknown
P. hemmeni	1.4	1.4	not cochleate	unknown
P. panetolis	1.5	1.6	cochleate	no
P. renei	1.3	1.2	not cochleate	unknown
P. trichonis	1.7	1.1	non chochleate	yes
P. westerlundi	1.5	1.9	non cochleate	unknown
P. zogari	1.5	1.5	non cochleate	no
***P. lilaia* n. sp.**	1.1	1.2	non cochleate	yes

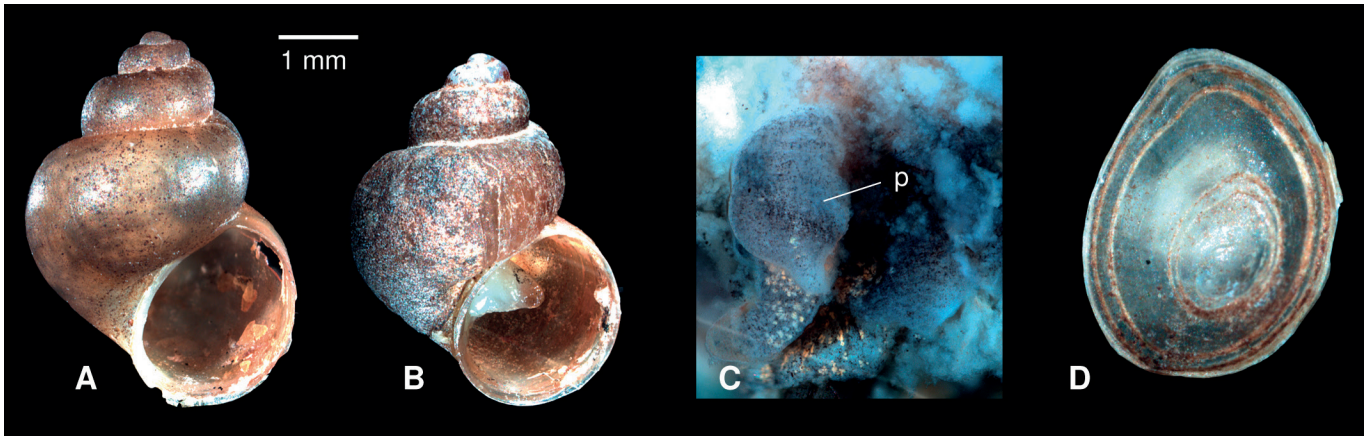

Figure 2. *Pseudobithynia euboeensis*. A: Female; B: Male; C: Penis in situ; D: Operculum. p = penis.

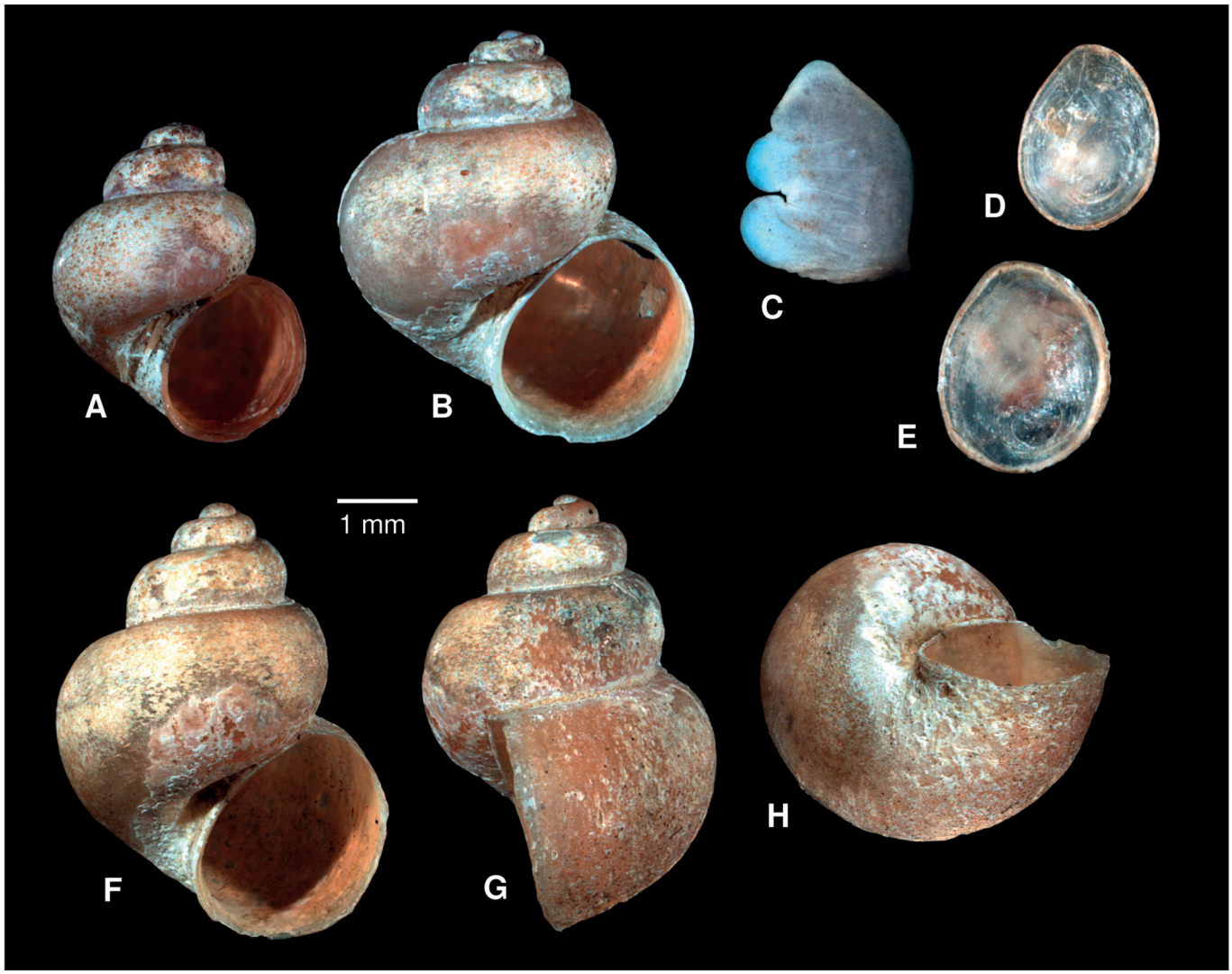

Figure 3. *Pseudobithynia lilaia* n. sp., A: Holotype (male); B: Paratype, female; C: Penis; D: operculum (male); E: operculum (female); F-H: paratype (male).

Family Bythinellidae Locard, 1893
Genus *Bythinella* Moquin-Tandon, 1856
***Bythinella eleousae* Glöer & Hirschfelder, 2020**
(Figure 4)

2020 *Bythinella eleousae* Glöer & Hirschfelder, p. 63, fig. 2.1 [Ecol. Monteneg. 30: 60-67].

Type locality: Parnassus Mountains, Kifisou spring at the ruins of the Byzantine church Agia Eleousa, 1.5 km SW of Polidrosos, N 38°37'45.1" E 22°31'12.4", 311 m asl.

Re-description: The cylindrical shell has a flat apex and is relatively broad. The 4.5-5 whorls are slightly convex (rarely tumid) with a clear suture. The body whorl takes about 0.75 of total shell height. The aperture is ovate, with a sharp peristome. The umbilicus is slit-like to closed. The shell is 2.8-3.4 mm high and 1.8-1.9 mm broad.

The penis is as long as the penial appendix. The tubular gland is long and slightly thinner at the distal end.

Remarks: *B. eleousae* lives syntopically with *P. euboeensis*.

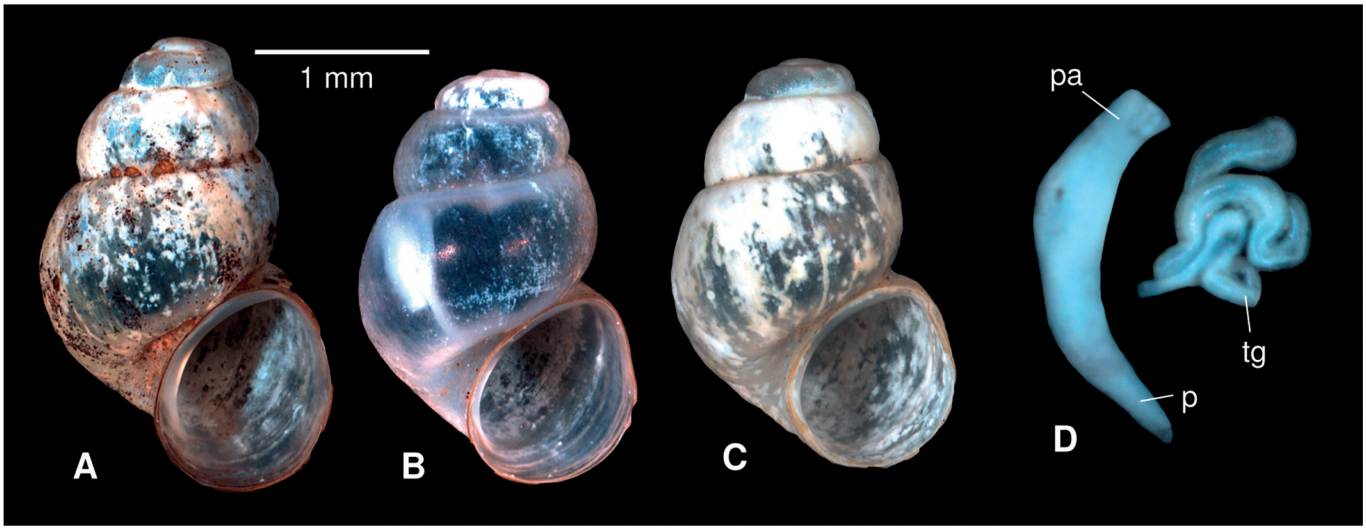

Figure 4. Topotype of *Bythinella eleousae*: A-C: Shells; D: Penis (p) with penial appendix (pa) and tubular gland (tg).

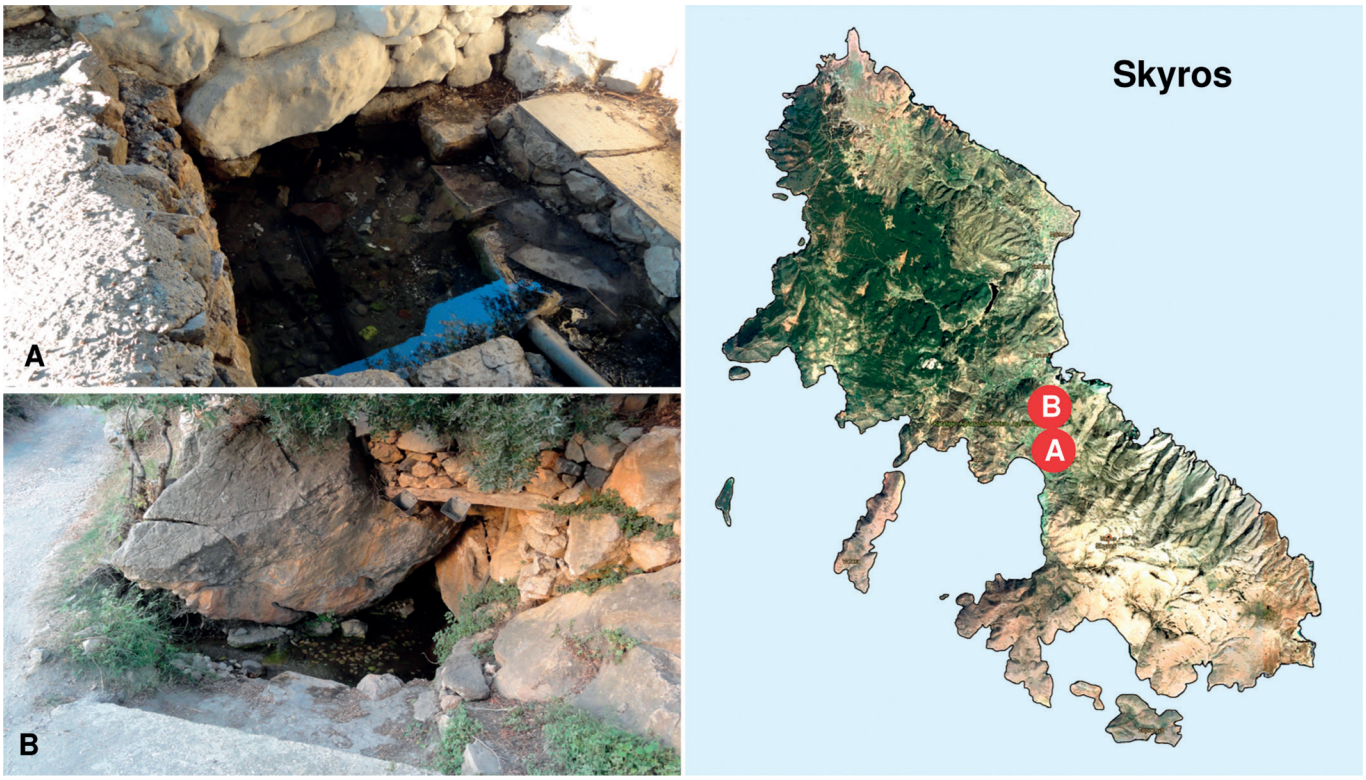

Figure 5. A: Type locality of *Bythinella deidamiae* n. sp. (Ayia Sotira); B: a second sampling site of this species in Skyros Island.

***Bythinella deidamiae* n. sp.**
(Figures 6A-D, 5A, 7B)

Type material: holotype 2.94 mm high, ZMH 141450; 10 paratypes ZMH 141451; 3 paratypes in coll. Glöer; 6 paratypes in coll. Porfyris, all from the type locality.

Type locality: Spring at Ayia Sotira chapel, Xylo, Skyros Island, 38°50'29.6"N 24°34'30.7"E, collected at 15th August 2022 by A. Porfyris.

Etymology: Named after Deidamia who, in the Greek Mythology, was one of the seven daughters of Lycomedes, king of Skyros, and was also mother of Achilles' son Neoptolemos.

Description: The shell is elongated ovate with 4.5 convex to tumid whorls, separated by a deep suture. The surface is glossy. The apex is small, the other whorls are fast growing. The aperture is ovate with a rounded angle at the top. The peristome is sharp, the umbilicus is closed. The body whorl takes 0.46 of shell height, the shell is 2.94-3.07 mm high and 1.7 mm broad.

The penis is shorter than the penial appendix. The tubular gland is of medium length, relatively thick and tapered at the distal end.

Differentiating characters: The geographically closest species are *B. eleousae* from Parnassus Mountains and *Bythinella dimitrosensis* Glöer & Reuselaars, 2020, from Euboea. *B. eleousae* is larger and broader than *B. deidamiae* n. sp.and *B. dimitrosensis* is smaller than *B. deidamiae* n. sp. While the shell of *B. dimitrosensis* is ovate, the shell of *B. deidamiae* n. sp. is elongated ovate and the shell of *B. eleousae* is cylindrical. In *Bythinella deidamiae* n. sp. the tubular gland is relatively shorter and thicker than in *B. eleousae*.

Distribution: Only known from type locality.

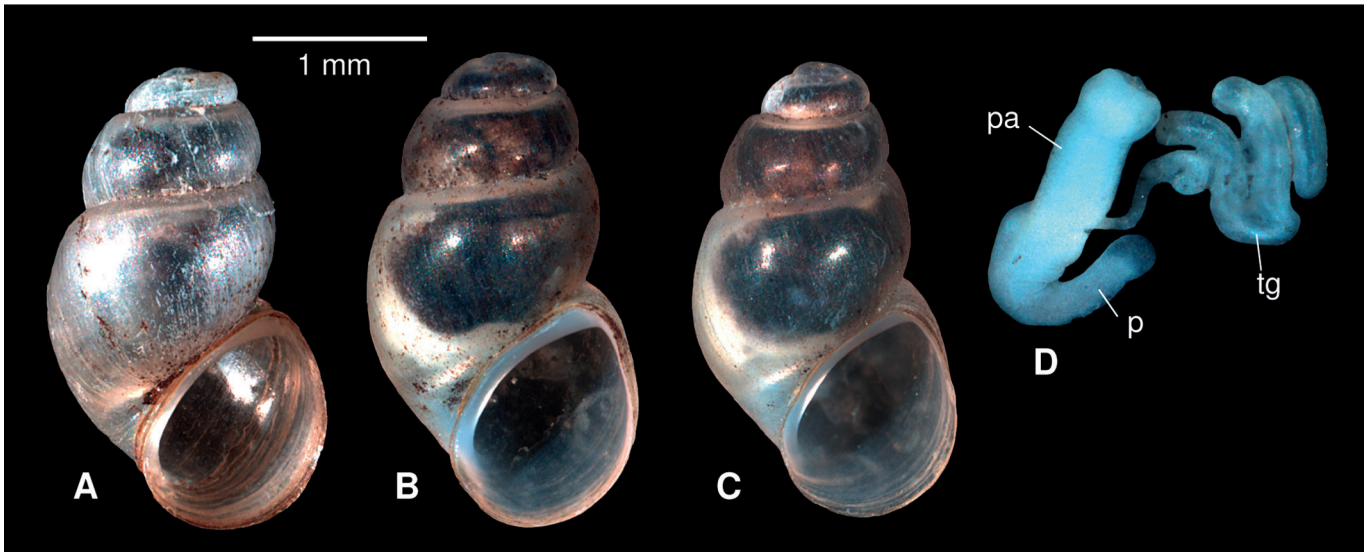

Figure 6. *Bythinella deidamiae* n. sp. Ayia Sotira. A: Holotype; B-C: Paratypes; D: Male copulatory organ. p = penis, pa = penial appendix, tg = tubular gland.

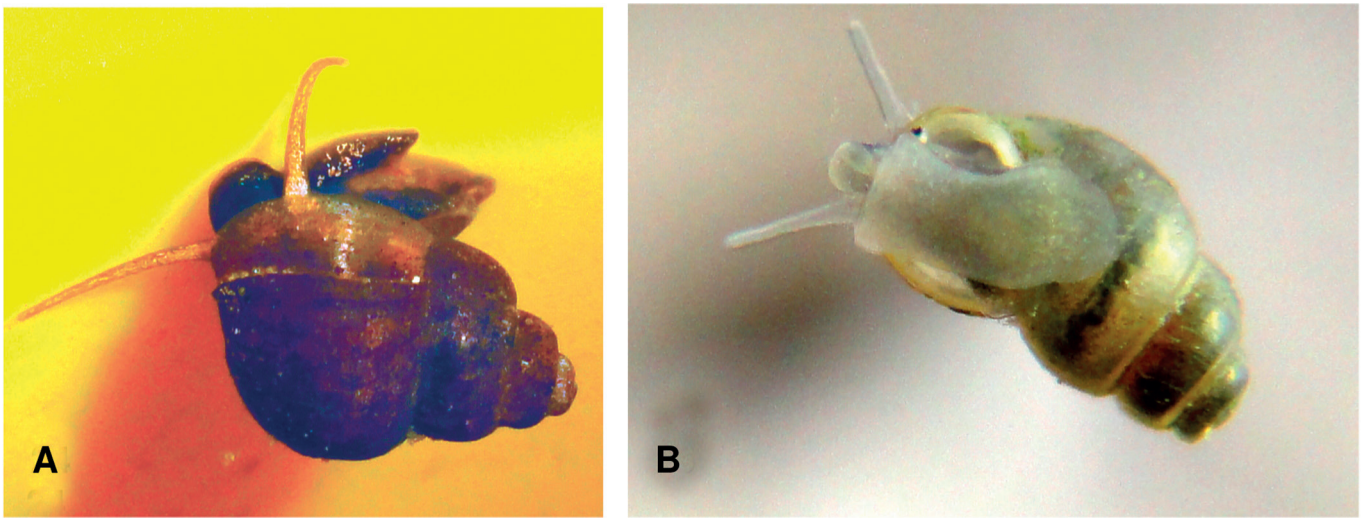

Figure 7. A: Live specimen of *Pseudobithynia lilaia* n. sp.; B: Live specimen of *Bythinella deidamiae* n. sp. (photos: A. Porfyris).

Acknowledgments

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References

Glöer, P. (2019). *The Freshwater Gastropods of the West Palaearctis*. Vol. 1. 399 pp. Hetlingen.

Glöer, P. (2022). *The Freshwater Gastropods of the West Palaearctis*. Vol. 2. 386 pp. Hetlingen.

Glöer, P. & Bößneck, U. (2007). *Pseudobithynia kathrini* n. sp., *P levantica* n. sp. und *R amiqensis* n. sp. - drei neue Arten aus dem Libanon (Mollusca: Gastropoda: Bithyniidae). *Mollusca* 25, 113–120.

Glöer, P. & Hirschfelder, H.-J. (2020). Some new *Bythinella* spp. from southern Greece (Gastropoda: Bythinellidae). *Ecol. Montenegrina* 30, 60–67. http://dx.doi.org/10.37828/em.2020.30.5

Glöer, P. & Porfyris, A. (2022). Greece, a second hotspot of *Bythinella* spp. (Gastropoda: Bythinellidae) in Europe, with the description of two new species. *Spira* 8, 27–37.

Glöer, P., Albrecht, C. & Wilke, T. (2007). Enigmatic distribution patterns of the Bithyniidae in the Balkan Region (Gastropoda: Rissooidea). *Mollusca* 25, 13–22.

Glöer, P., Falniowski, A. & Pešić, V. (2010). The Bithyniidae of Greece (Gastropoda: Bithyniidae). *J. Conchol.* 40, 179–187.

Glöer, P., Falkner, G. & Dia, A. (2012). The genus *Pseudobithynia* in Lebanon, with a redescription of three species and additional notes on its ecology (Mollusca: Bithyniidae). *Zool. Middle East* 57, 87–96.

Triantis, K.A., Vardinoyannis, K. & Mylonas, M. (2005). Area and habitat relationships in island land snail faunas: an Aegean case study exploring the choros model. *Rec. West. Aust. Mus. Supp.* 68, 133–141.