The Bythinella spp. of Greece (Gastropoda: Hydrobioidea: Bythinelliidae)

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Abstract
In this article the type localities of 21 Bythinella spp. hitherto known from Greece are presented on a map. Twelve of these species are described as new for science. Unfortunately we had not enough materials for dissections, so the descriptions are based on the shell characters only, like almost all other known Bythinella spp. from Greece.

Key words: Bythinella, Greece, Crete, Peloponnese, Samos, Lesvos, Evia, new species.

Introduction

When Schütt (1980) studied the Bythinella spp. from Greece, he could only list B. charpentieri (Roth, 1855) from the mainland, and described B. kosensis and B. cretensis from the islands of Kos and Crete. In 1988 Reischütz described B. charpentieri cabirius from the island of Samothraki by the shells of which Glöer & Georgiev 2012 could add the anatomy. In 2008 Reischütz et al. described B. beckmanni and B. atypicos, both from Peloponnese.

Molecular genetic studies by Falniowski & Szarowska (2011) revealed ten Bythinella clades from continental Greece. Unfortunately the authors only worked with clades and did not deal with species names. In 2016 Falniowski & al. described B. walensae from the island of Naxos and Glöer & Hirschfelder (2019) could describe two more species: B. rethynmonensis and B. sitiensis from the island of Crete. B. rethynmonensis was originally described as B. magdalenae (homonym, preoccupied by Yildirim et al. 2012) and got the replacement name B. rethynmonensis Glöer & Hirschfelder 2020.

Analyses of Bythinella spp. revealed several cases where conclusions from morphological and sequence data would be inconsistent or even contradictory (Haase et al. 2007).

Recent investigations showed that the diversity in Bythinella is much larger than hitherto believed, thus this article is intended to present all the known Bythinella from Greece and to describe 12 new species which were found between 2009 and 2020.
Material and methods

The snails have been collected by Robert Reuselaars and fixed in 80% ethanol. The specimen were taken by hand or with a tweezers. In most cases only a few specimen were collected to avoid disturbing the small populations too much. Of the 12 new species, 7 are living in a habitat of less than 1 m² and in low densities (see figures 4, 5, 8, 13 and 14). In 2 cases even less than 0.25 m² (see figures 10 and 12).

The measurements of the shells were carried out using a stereo microscope (ZEISS) with an eyepiece micrometer; the photographs were made with a digital camera system (Leica R8). The type material is stored in RMNH (Rijksmuseum van Natuurlijke Historie Naturalis Leiden, The Netherlands) and in the collection of Robert Reuselaars.

Study Area

Greece is a hotpot for land and freshwater molluscs. Despite the fact that Greece is visited by many malacologists in the past, there is a continuous flow of new discoveries. In this article we present our findings on the freshwater genus *Bythinella*. As shown on the map, the distribution of this genus is almost horseshoe shaped, starting on the western side of continental Greece in Epirus, down to the Peleponnese, Crete and then moving upwards along the Turkish coast on the islands of Kos, Samos, Lesvos and Thassos with a few dispersed localities near Athens and on the islands of Naxos and Evia. It seems to be absent in the eastern continental part, roughly between Thessaloniki and Lamia. On many visits in this area in the past 20 years, *Bythinella* spp. were discovered. In the northern continental part of Greece, roughly below Bulgaria and FYROM, *Bythinella* spp. seems to be replaced by *Grossuana*. Species of this genus are known from FYROM and Bulgaria, but in 2018 four species were discovered in this region, three of which were new species (Glöer, Reuselaars & Papavasileiou).

Results

In Greece *Bythinella* spp. were assumed to local endemics and species of populations which occur at nearby locations are very different in shell shape (e.g. nos. 3-6). However, Glöer & Hirschfelder 2019 could show that 3 distinct species occur endemically on the island of Crete. We conclude with our present study that there is more diversity of species within this genus than formerly known. We present an identification key (Table 2) on the 21 known species. Although most species are only known from the type locality, we cannot exclude that there might be new discoveries of new or the here presented species in nearby localities and this identification key will be helpful in further studies on this genus.

Family *Bythinellidae* Locard, 1893

Genus *Bythinella* Moquin-Tandon, 1856

Type species by designation: *Bulimus viridis* Poiret, 1801

**Differentiating characters**: Because the *Bythinella* spp. in Greece are locally or regional endemic we compare the species only with those wich live in the same region each. For species delimitation see also the identification key at the end (table 2).

*Bythinella kyriaki* n. sp. [fig. 2.1]

**Material examined**: Holotype (RMNH.MOL.340494) and 2 paratypes (RMNH.MOL.340495) from type locality.

**Holotype**: 2.2 mm high, 1.5 mm broad from type locality.

**Paratypes**: 2 paratypes from type locality, 1 adult and 11 subadult ex. in coll. Robert Reuselaars (no. 1264).
**THE BYTHINELLA SPP. OF GREECE**

**Locus typicus:** spring 2 km of monastery Kapina, Epirus, Greece at 620 meters altitude (Figure 4), 39° 34' 01.13475'' N 21° 07' 19.90862'' E, 11.09.2019 Robert Reuselaars leg.

**Habitat:** strong running spring, the specimen were sparsly found on the small stones (1 per 5-6 stones) beneath the outflow of the spring. This species occupies an area of only 1 m².

**Etymology:** Named after Kyriakos Papavasileiou who accompanied Robert Reuselaars at several trips in Greece and as to thank him for his help and support.

**Description:** The shell is ovate with 4-4.5 slightly convex whorls which are separated by a deep suture. The aperture is broad ovate to circular, angled at the top. The peristome is slightly reflexed at the columella. The umbilicus is closed. The body whorl takes 0.7 of shell height. The aperture is 0.8 mm high and 0.8 mm broad. The ratio of shell height to shell width is 1.6. The shell is 2.2-2.3 mm high and 1.4-1.5 mm broad.

**Differentiating characters:** The aperture is more circular than in *B. gregoi*, the umbilicus is closed and not slit-like.

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

*Figure 1.* The type localities of the *Bythinella* spp. in Greece. Marked in red: the here described new *Bythinella* species, marked in black: the known *Bythinella* spp. 1: *Bythinella kyriaki* n. sp., 2: *B. gregori* n. sp., 3: *B. pesici* n. sp., 4: *B. klimaensis* n. sp., 5: *B. rigaensis* n. sp., 6: *B. radomani* n. sp., 7: *B. kwanti* n. sp., 8: *B. petrosensis* n. sp., 9: *B. liandinaensis* n. sp., 10: *B. konstandinensis* n. sp., 11: *B. olymbosensis* n. sp., 12: *B. dimitrosensis* n. sp., 13: *B. charpentierricabirias*, 14: *B. charpentieri*, 15: *B. beckmanni*, 16: *B. atypicos*, 17: *B. walensae*, 18: *B. kosensis*, 19: *B. rethymnonensis*, 20: *B. cretensis*, 21: *B. sitiensis*. 
Table 1 The type localities of the *Bythinella* spp. in Greece

|   | **Bythinella** spp.                                      | Location                                                                 |
|---|----------------------------------------------------------|--------------------------------------------------------------------------|
| 1 | *Bythinella kyriaki*                                     | Spring 2 km of monastery Kapina, Epirus, Greece                           |
| 2 | *Bythinella gregoi*                                      | Spring southwest of Anthousa, Greece                                      |
| 3 | *Bythinella pesici*                                      | Spring north of Klima, Aetolia, Greece                                   |
| 4 | *Bythinella klimaensis*                                  | Spring in Klima, Aetolia, south of lake Trichonida, Greece               |
| 5 | *Bythinella righanesis*                                  | Spring in Righani, north of Nafpaktos, Aetolia, Greece                   |
| 6 | *Bythinella radomani*                                    | Spring between Kokinochori & Perivoli, Fokidha, Greece                   |
| 7 | *Bythinella kwanti*                                      | Spring 5-6 km southeast of Aghios Petros, Parnon mountains,              |
| 8 | *Bythinella petrosensis*                                 | Peleponnesos, Greece                                                    |
| 9 | *Bythinella liandinaensis*                               | Spring between Liandina and Vasiliki, Peleponnesos, Greece              |
| 10| *Bythinella konstadinensis*                              | Monia Konstadinou en Elenis, 2 km east of Kosmadei, Samos island,       |
| 11| *Bythinella olymbosensis*                                | Spring at Olymbos mountain, aproximately 3 km before the top, south      |
| 12| *Bythinella dimitrosensis*                               | Lesvos island, Greece                                                  |
| 13| *Bythinella charpentieri cabirius*                        | Spring of Aghios Dimotros, Evia, Greece                                 |
| 14| *Bythinella charpentieri*                                | Attika                                                                  |
| 15| *Bythinella beckmanni*                                   | Spring in Mari, south of Leonidion, Nomos Argolida, Peloponese,         |
| 16| *Bythinella atypicos*                                    | Greece                                                                  |
| 17| *Bythinella walensae*                                    | Spring in Faskomilia east of Nea Figalia, north of Neda, Nomos Ilia,   |
| 18| *Bythinella kosensis*                                    | Kos island, spring above Agios Dimitrios, Greece                        |
| 19| *Bythinella rethymnonensis*                              | Argiroúpoli, 14 km southwest of Réthymnon, Crete island, Nómos          |
| 20| *Bythinella cretensis*                                   | Réthymnon, Greece                                                       |
| 21| *Bythinella sitiensis*                                   | Fountain in Zou, 6 km south of Sitía, Nómos Lasíthi, Crete island,     |

Bythinella charpentieri
Figure 2. The new Bythinella spp., described below. 1: Bythinella kyriaki n. sp., 2: B. gregori n. sp., 3: B. pesici n. sp., 4: B. klimaensis n. sp., 5: B. righaensis n. sp., 6: B. radomai n. sp., 7: B. kwanti n. sp., 8: B. petrosensis n. sp., 9: B. liandinaensis n. sp., 10: B. konstadinensis n. sp., 11: B. olymbosensis n. sp., 12: B. dimitrosensis n. sp.
Figure 3. The hitherto known Bythinella spp. From Greece. 13: Bythinella charpentieri cabirius (topotype), 14: B. charpentieri (after Falniowski et al. 2011, fig. 13), 15: B. beckmanni, 16: B. atypicos (15, 16 holotypes after Reischütz et al. 2008), 17: B. walensae (holotype after Falniowski et al. 2016), 18: B. kosensis (topotype), 19: B. rethymnonensis (holotype), 20: B. cretensis (holotype), 21: B. sitiensis (holotype)
Bythinella gregoi n. sp. [fig. 2.2]

**Material examined:** Holotype (RMNH.MOL.340496) and 2 paratypes (RMNH.MOL.340497) from type locality.

- **Holotype:** 2.5 mm high, 1.4 mm broad from type locality.
- **Paratypes:** 2 paratypes from type locality, 2 adult and 5 subadult ex. in coll. Robert Reuselaars (no. 839).
- **Locus typicus:** Spring SW of Anthousa, Greece, at 1.000 meters altitude, 39° 39’ 31.97786” N 21° 12’ 27.76905” E, 09.05.2013 Robert Reuselaars leg.
- **Habitat:** Slow running spring, the specimen were collected from old leaves.
- **Etymology:** Named after Jozef Grego who did so much for our knowledge of the hydrobiids from the Balkan.
- **Description:** The shell is slim ovate with 4-4.5 slightly convex whorls which are separated by a clear suture. The aperture is ovate, slightly angled at the top. The peristome is broadened at the columella. The umbilicus is slit-like. The aperture is 0.8 mm high and 0.7 mm broad. The ratio of shell height to shell width is 1.7. The shell is 2.4-2.7 mm high and 1.4-1.5 mm broad.
- **Differentiating characters:** See *Bythinella kyriaki* n. sp.
- **Distribution:** Only known from type locality.

Bythinella pesici n. sp. [fig. 2.3]

**Material examined:** Holotype (RMNH.MOL.340499) and 3 paratypes (RMNH.MOL.340499) from type locality.

- **Holotype:** 2.8 mm high, 1.7 mm broad from type locality.
- **Paratypes:** 3 paratypes from type locality, 1 adult and 6 subadult ex. in coll. Robert Reuselaars (no. 1267).
- **Locus typicus:** Spring north of Klima, Aetolia, Greece (south of lake Trichonida) at 660 meters altitude (Figure 14), 17.06.2019 Robert Reuselaars leg.
- **Habitat:** In the concrete canal and on old leaves of the artificial basin. This species occupies an area of less than 0.5 m².
- **Etymology:** Named after Vladimir Pešić who did so much for our knowledge of the freshwater molluscs from the Balkans.
- **Description:** The shell is ovate with 4-4.5 convex whorls which are separated by a deep suture. The aperture is ovate. The peristome is somewhat broadened at the columella. The umbilicus is closed. The body whorl takes 0.75 of shell height. The aperture is 0.9 mm high and 0.8 mm broad. The ratio of shell height to shell width is 1.6. The shell is 2.3-2.8 mm high and 1.5-1.7 mm broad.
- **Differentiating characters:** The shell is smaller than *B. klimaensis* n. sp. and *B. righaensis* n. sp., but larger than *B. radomani* n. sp. In *B. klimaensis* n. sp. and in *B. radomani* n. sp. the aperture is angled at the top. In *B. righaensis* n. sp. the whorls of the spire are more convex than in *B. pesici* n. sp.
- **Distribution:** Only known from type locality.

Bythinella klimaensis n. sp. [fig. 2.4]

**Material examined:** Holotype (RMNH.MOL.340500) and 3 paratypes (RMNH.MOL.340501) from type locality.

- **Holotype:** 3.4 mm high, 1.9 mm broad from type locality.
- **Paratypes:** 4 paratypes from type locality, 21 dry ex. in coll. Robert Reuselaars (no. 1274).
- **Locus typicus:** Spring in Klima, Aetolia, south of lake Trichonida, Greece at 625 meters altitude (Figure 6), 38° 28’ 09.57291” N 21° 28’ 54.52199” E, 17.06.2019 Robert Reuselaars leg.
- **Habitat:** Artificial canal below outflow of the spring, the specimens were collected from small stones and old leaves.
- **Etymology:** Named after Klima town.
Description: The shell is elongated ovate with 4.5-5 slightly convex whorls which are separated by a deep suture. The apex is oblique. The aperture is ovate, slightly angled at the top. The peristome is broadened at the columella. The umbilicus is closed. The body whorl takes 0.7 of shell height. The aperture is 1.0 mm high and 0.9 mm broad. The ratio of shell height to shell width is 1.9. The shell is 2.6-3.4 mm high and 1.7-1.9 mm broad.

Differentiating characters: See B. pesici n. sp.

Distribution: Only known from type locality.

Bythinella righaensis n. sp. [fig. 2.5]

Material examined: Holotype (RMNH.MOL.340502) and 2 paratypes (RMNH.MOL.340503) from type locality.

Holotype: 3.1 mm high, 1.8 mm broad from type locality.
Paratypes: 2 paratypes from type locality, 2 adult and 10 subadult ex. in coll. Robert Reuselaars (no. 1270).

Locus typicus: Spring in Righani, north of Nafpaktos, Aetolia, Greece at 565 meters altitude (Figure 7), 38° 28' 56.07778'' N 21° 46' 05.08430'' E, 13.06.2019 Robert Reuselaars leg.

Habitat: On small stones of the bottom of the springbasin. This species occupies an area of about 2 m².

Etymology: Named after Righani town.

Description: The shell is elongated ovate with 4.5-5 convex whorls which are separated by a deep suture. The aperture is ovate. The peristome is somewhat broadened at the columella. The umbilicus is closed. The body whorl takes 0.7 of shell height. The body whorl takes 0.7 of shell height. The aperture is 0.9 mm high and 0.7 mm broad. The ratio of shell height to shell width is 1.6. The shell is 3.1 mm high and 1.8 mm broad.

Differentiating characters: See B. pesici n. sp.

Distribution: Only known from type locality.

Bythinella radomani n. sp. [fig. 2.6]

Material examined: Holotype (RMNH.MOL.340504) and 4 paratypes (RMNH.MOL.340505) from type locality.

Holotype: 2.5 mm high, 1.5 mm broad from type locality.
Paratypes: 4 paratypes from type locality, 1 adult and 12 subadult ex. in coll. Robert Reuselaars (no. 1268)

Locus typicus: Spring between Kokinochori & Perivoli, Fokidha, Greece at 785 meters altitude (Figure 13), 38° 30' 24.98346'' N 22° 01' 16.56789'' E, 14.06.2019 Robert Reuselaars leg.

Habitat: On small stones and old leaves in small canal below the spring. This species occupies an area of about 1 m².

Etymology: Named after Pavle Radoman to honour his work on hydrobid snails of the Balkans.

Description: The shell is slim ovate with 4.5-5 convex whorls which are separated by a deep suture. The aperture is ovate, slightly angled at the top. The peristome is broadened at the columella. The umbilicus is closed. The body whorl takes 0.7 of shell height. The aperture is 0.9 mm high and 0.7 mm broad. The ratio of shell height to shell width is 1.8. The shell is 2.5-2.8 mm high and 1.5-1.7 mm broad.

Differentiating characters: See B. pesici n. sp.

Distribution: Only known from type locality.

Bythinella kwanti n. sp. [fig. 2.7]

Material examined: Holotype (RMNH.MOL.340506) and 2 paratypes (RMNH.MOL.340507) from type locality.

Holotype: 2.9 mm high, 1.8 mm broad from type locality.
**THE BYTHINELLA SPP. OF GREECE**

Paratypes: 2 paratypes from type locality, 2.6 mm high and 1.7 mm broad, + 1 juv, 2 adult and 10 subadult ex. in coll. Robert Reuselaars (no. 1273).

Locus typicus: Planitero, south of Kalavrita, NW Peleponnesos, Greece at 495 meters altitude (Figure 9), 37° 55' 59.61717'' N 22° 09' 45.61220'' E, 09.06.2019 Robert Reuselaars leg.

Habitat: stong running spring with medium sized stones with algae cover.

Etymology: Named after Henkdrikjan Kwant who joined Robert Reuselaars on many trips in the last 20 years.

Description: The shell is ovate with 4.5-5 slightly convex whorls which are separated by a deep suture. The aperture is ovate, slightly angled at the top. The peristome is broadened at the columella. The umbilicus is slit-like. The body whorl takes 0.76 of shell height. The aperture is 1.0 mm high and 0.8 mm broad. The ratio of shell height to shell width is 1.6. The shell is 2.6-2.9 mm high and 1.7-1.8 mm broad.

Differentiating characters: This species is much higher and broader than *B. beckmanni*.

Distribution: Only known from type locality.

**Bythinella petrosensis** n. sp. [fig. 2.8]

Material examined: Holotype (RMNH.MOL.340508) and 1 paratype (RMNH.MOL.340509) from type locality.

Holotype: 2.9 mm high, 1.8 mm broad from type locality.

Paratypes: 1 paratype from type locality, 2.0 mm high and 1.3 mm broad, 4 (dry) in coll. Robert Reuselaars (no. 682).

Locus typicus: Spring 5-6 km Se of Aghios Petros, Parnon mountains, Peleponnesos, Greece at 1.105 meters altitude (Figure 10), 37° 17' 36.115787'' N 22° 35' 30.35337'' E, 24.09.2010 Robert Reuselaars leg.

Habitat: This species occupies an area of only less than 0.15 m² in an artificial basin of a slow running spring

Etymology: Named after Aghios Petros town.

Description: The shell is elongated ovate with 3-4.5 convex whorls which are separated by a deep suture. The aperture is ovate. The peristome is thickened at the columella. The umbilicus is closed. The body whorl takes 0.8 of shell height. The aperture is 0.8 mm high and 0.7 mm broad. The ratio of shell height to shell width is 1.6. The shell is 2.0-2.2 mm high and 1.3 mm broad.

Differentiating characters: This species is much smaller than *B. liandinaensis* n.sp. and much smaller than *B. atypicos* as well.

Distribution: Only known from type locality.

**Bythinella liandinaensis** n. sp. [fig. 2.9]

Material examined: Holotype (RMNH.MOL.340510) and 3 paratypes (RMNH.MOL.340511) from type locality.

Holotype: 3.0 mm high, 1.8 mm broad from type locality.

Paratypes: 3 paratypes from type locality, 6 adult and 8 subadult (dry) in coll. Robert Reuselaars (no. 683).

Locus typicus: Spring between Liandina and Vasiliki, Peleponnesos, Greece, at 70 meters altitude (Figure 8), 36° 54' 42.86614'' N 22° 26' 33.74825'' E, 19.09.2010 Robert Reuselaars leg.

Habitat: On old leaves in a smal spring, this species occupies an area of about 1 m².

Etymology: Named after Liandina town.

Description: The shell is elongated ovate with 4.5-5 slightly convex whorls which are separated by a deep suture. The aperture is ovate, slightly angled at the top. The peristome is sharp. The umbilicus is slit-like. The body whorl takes 0.67 of shell height. The aperture is 1.0 mm high and 0.8 mm broad. The ratio of shell height to shell width is 1.8. The shell is 2.4-3.0 mm high and 1.4-1.6 mm broad.

Differentiating characters: See *B. petrosensis* n. sp.

Distribution: Only known from type locality.
**Bythinella konstadinensis** n. sp. [fig. 2.10]

**Material examined:** Holotype (RMNH.MOL.340512) and 2 paratypes (RMNH.MOL.340513) from type locality.

**Holotype:** 2.6 mm high, 1.9 mm broad from type locality.

**Paratypes:** 3 paratypes from type locality, 2 adult and 3 subadult (dry) in coll. Robert Reuselaars (no. 558).

**Locus typicus:** Monia Konstadinou en Elenis, 2 km E of Kosmadei, Samos isl., Greece at 313 meters altitude (Figure 11), 37° 45.76320' N 26° 40.93519' E, 10.10.2008 Robert Reuselaars leg.

**Habitat:** On old leaves and medium sized stones.

**Etymology:** Named after the monastery of Konstadinou en Elenis.

**Description:** The shell is ovate with 4.5-5 slightly convex whorls which are separated by a deep suture. The aperture is ovate, slightly angled at the top. The peristome sharp. The umbilicus is closed. The body whorl takes 0.8 of shell height. The aperture is 1.0 mm high and 0.9 mm broad. The ratio of shell height to shell width is 1.6. The shell is 2.5-2.7 mm high and 1.7-1.9 mm broad.

**Differentiating characters:** See *B. petrosensis* n. sp.

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

**Bythinella olymbosensis** n. sp. [fig. 2.11]

**Material examined:** Holotype (RMNH.MOL.340514) and 3 paratypes (RMNH.MOL.340515) from type locality.

**Holotype:** 2.6 mm high, 1.7 mm broad from type locality.

**Paratypes:** 3 paratypes from type locality, 3 adult and 8 subadult ex. (dry) in coll. Robert Reuselaars (no. 754).

**Locus typicus:** Spring at Olymbos mountain, apr 3 km before the top, south Lesvos isl., Greece at 804 meters altitude (Figure 12), 39° 04.15127' N 26° 21.01430' E, 08.05.2007 Robert Reuselaars leg.

**Habitat:** On algae on the bottom and sides of an artificial basin, this species occupies an are of less than 0.25 m².

**Etymology:** Named after Olymbos mountain.

**Description:** The shell is ovate conical with 4.5-5 slightly convex whorls which are separated by a clear suture. The apex is pointed. The aperture is oblique ovate, angled at the top. The peristome is thickened at the columella. The umbilicus is closed. The body whorl takes 0.75 of shell height. The aperture is 1.0 mm high and 0.8 mm broad. The ratio of shell height to shell width is 1.6. The shell is 2.1-2.6 mm high and 1.4-1.7 mm broad.

**Differentiating characters:** No other *Bythinella* sp. known on this island.

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

**Bythinella dimitrosensis** n. sp. [fig. 2.12]

**Material examined:** Holotype (RMNH.MOL.340516) and 3 paratypes (RMNH.MOL.340517) from type locality.

**Holotype:** 2.6 mm high, 1.6 mm broad from type locality.

**Paratypes:** 3 paratypes from type locality, 7 adult and 15 subadult ex. (dry) in coll. Robert Reuselaars (no. 776).

**Locus typicus:** Spring of Aghios Dimotros, island of Evia, Greece at 330 meters altitude (Figure 5), 38° 06' 29.05401" N 24° 26' 12.21897" E, 10.06.2011 Robert Reuselaars leg.

**Habitat:** on small stones and old leaves, this species occupies an area of about 1 m².

**Etymology:** Named after Aghios Dinitros town.

**Description:** The shell is ovate with 4.5 slightly convex whorls which are separated by a clear suture. The apex is pointed. The aperture is oblique ovate, angled at the top. The peristome is thickened at the columella. The umbilicus is closed. The body whorl takes 0.77 of shell height. The aperture is 1.0 mm high and 0.8 mm broad. The ratio of shell height to shell width is 1.7. The shell is 2.4-2.7 mm high and 1.5-1.7 mm broad.
Differentiating characters: *B. dimitrosensis* n. sp. is smaller than *B. charpentieri* and the whorls are less convex.

Distribution: Only known from type locality.

**Figures 4-9:** Sampling sites. 4. Kapina monastery (type locality of *Bythinella kyriaki* n. sp.), 5. Aghios Dimitros (type locality of *Bythinella dimitrosensis* n. sp.), 6. Klima (type locality of *Bythinella klimaensis* n. sp.), 7. Righani (type locality of *Bythinella righaensis* n. sp.), 8. Liandina (type locality of *Bythinella liandianensis* n. sp.), 9. Planitero (type locality of *Bythinella kwanti* n. sp.).
Figures 10-14: Sampling sites. 10. Aghios Petros (type locality of *Bythinella petrosensis* n. sp.), 11. Monia Konstadinou (type locality of *Bythinella konstandinensis* n. sp.), 12. Olymbos mountain (type locality of *Bythinella olymbosensis* n. sp.), 13. Kokinochori (type locality of *Bythinella radomani* n. sp.), 14. N. of Klima (type locality of *Bythinella pesici* n. sp.), 15: spring above Eftalophos (type locality of *Daphniola eptalofos*).
Conservation

Our contribution to the knowledge on the freshwater springsnails from Greece is important if we want to protect these species. Due to the human impact, most species in Greece are serious under stress. Most springs are used for drinking water or irrigation, see the examples in the figures 6, 7, 10, 12, 13 and 14. Another example: a short visit at the spring above Eftalopos 38° 35' 34.91509'' N 22° 30' 13.77271'' E (figure 15), after visiting the area around Nafpaktos and on the way to Athens in 2019, the type locality of Daphniola eptalophos, showed a similar picture. This species lives in a small artificial basin of less than 0.25 m². It is also serious under stress by pollution of the tobacco from cigarettes which were thrown in the small basin. Subsequently it seems that this spring is also drying out slowly. During the visit only two alive specimen were observed.

Of the Bythinella spp which are described in this article, we consider the species kyriaki, pesici, radomani, righaensis, petrosensis, olymbosensis, liandianensis and dimitrosensis as critically endangered due to a single spring, tiny area where they live in and low numbers of specimen. The others are considered as endangered because they only live in one spring with a higher number of specimen and less chance of human disturbance.

Table 2. Identification for the Bythinella spp. of Greece.

|   |   |   |
|---|---|---|
| 1 | Shell small, <2.5 mm, Shell larger than 2.5 mm | 2 |
|   |   | Bythinella beckmanni |
| 2 | Shell about 2 mm high, peristome sharp, umbilicus closed, W-Peloponnese east of Nea Figalia | 3 |
|   | Shell 2.1-2.3 mm high, N-Greece or S-Peloponnese | Bythinella kyriaki |
| 3 | Whorls slightly convex, aperture angled at the top, peristome reflexed at the columella, near monastery Kapina, Epirus | Bythinella petrosensis |
|   | Whorls convex, aperture not angled, body whorl : shell height = 0.8, S-Peloponnese, spring between Liandina and Vasiliki | |
| 4 | Shell elongated and slightly conical, Spire not conical | 5 |
|   |   | Bythinella liandinaensis |
| 5 | Shell elongated ovate, S-Peloponnese, umbilicus slit-like | 6 |
|   | Shell elongated ovate, S-Peloponnese, umbilicus closed | Bythinella atypicos |
| 6 | Shell higher than 3 mm, Shell 2.6-2.9 mm high | 7 |
|   |   | Bythinella righanensis |
| 7 | Shell elongated ovate, Umbilicus slit-like | 8 |
|   | Umbilicus closed | 9 |
| 8 | Naxos island | 10 |
|   | Shell slim, elongated cylindrical, Exo Potami, Crete | Bythinella klimaensis |
| 9 | Whorls inflated, spring in Righani, Aetolia | 11 |
|   | Whorls not inflated | Bythinella charpentieri |
| 10 | Peristome broadened at the columella, spring in Klima, Aetolia | 12 |
|   | Shell up to 3.6 mm high and 2 mm broad, Peristome sharp, region of Athen | Bythinella gregoi |
| 11 | Whorls nearly straight with a flat suture, umbilicus slit-like, Spring southwest of Anthousa | 13 |
|   | Whorls convex | Bythinella kwanti |
| 12 | Shell broad, umbilicus slit-like, Spring 5-6 km southeast of Aghious Petros | 14 |
|   | Umbilicus closed, | Bythinella pesici |
| 13 | Occurs on an island, Occurs on in Aetolia | 15 |
| 14 | Aperture ovate, Spring north of Klima, Aetolia, Aperture angled at the top, Apex pointed, Spring between Kokinochori & Perivoli, Fokidha | Bythinella radomani |
Crete
– Outside crete

16
– Umbilicus closed, Fountain in Zou, 6 km south of Sitía, Nómos Lasithí
  Bythinella sitiensis
– Umbilicus slit-like, Argiroúpoli, 14 km southwest of Réthymnon,
  Crete island, Nómos Réthymnon,
  Bythinella rethymnonensis
– Spring at the road below Palaiopolis, Samothrace island
  Bythinella cabirius
– Kos island, spring above Agios Dimitrios
  Bythinella kosensis
– Samos island
  Bythinella konstadiniensis
– Spring at Olymbos mountain, apr 3 km before the top, south Lesbos
  island
  Bythinella olymbosensis
– Spring of Aghios Dimotros, Evia
  Bythinella dimitrosensis

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