

Some records of Bithyniidae from Turkey with the description of *Bithynia pesicii* n. sp. (Gastropoda: Bithyniidae)

PETER GLÖER¹ & M. ZEKI YILDIRIM²

¹ Schulstr. 3, D-25491 Hettingen, Germany; e-mail: gloer@malaco.de

² Süleyman Demirel Üniv. Burdur Eğitim Fak., TR-15100 Burdur, Turkey; e-mail: mzyildirim@befsdu.edu.tr

Abstract. During malacological investigations in Turkey we found a new *Bithynia*-species, *B. pesicii* n. sp. in Asia-minor, in former times mentioned as *Bithynia leachii*. A description of the morphology of species' shell and the penis are given in this paper. In addition, we present the morphology of the penis of *Bithynia pseudemmericia* Schütt, 1964 and *Pseudobithynia pentheri* (Sturany, 1904), never depicted before.

Kurzfassung. Einige Nachweise der Bithyniidae aus der Türkei mit der Beschreibung von *Bithynia pesicii* n. sp. (Gastropoda: Bithyniidae). – Bei malakologischen Untersuchungen in der Türkei fanden wir eine neue *Bithynia*-Art in Kleinasien, die man früher als *B. leachii* bezeichnet hat. In dieser Arbeit werden die Gehäuse- und Penismorphologie dieser Art beschrieben. Daneben bilden wir die Penismorphologie von *Bithynia pseudemmericia* Schütt, 1964 und *Pseudobithynia pentheri* (Sturany, 1904) ab, die zuvor noch nie dargestellt wurde..

Key words. *Bithynia pesicii* n. sp., *Bithynia*, *Bithynia pseudemmericia*, *Pseudobithynia pentheri*, *Pseudobithynia*, Turkey.

Introduction

Many authors mentioned only *Bithynia tentaculata* (Linnaeus, 1758), *Bithynia leachii* (Sheppard, 1824) and *Bithynia pseudemmericia* Schütt, 1964 from Turkey (e. g. BILGIN 1980, YILDIRIM 1999). More precise investigations showed us that there are still more species of this genus living in Turkey. On the one hand we could find *Pseudobithynia pentheri* (Sturany, 1904), never mentioned after the original description by Sturany 1904, and on the other hand we found an up to now unknown species.

Material and methods

The snails were gathered with a sieve from the banks of the waters. The samples were put into ethanol (75%). The dissections and measurements of the genital organs and the shells were carried out using a stereo microscope (Stemi SV 6, Carl Zeiss, Germany), the photographs were made with a digital camera (Nikon D70).

The sampling sites

The sampling site of *Bithynia pesicii* n. sp. was a small, nearly 5–6 km long, stream with its source in a little swamp area with rich vegetation. The *Bithynia pseudemmericia* were gathered at different sampling sites in Antalya over a distance of more than 250 km, and the studied lots of *Pseudobithynia pentheri* were sampled in Karpuzsekisi near Gülbula village, in the region of Kayseri.



Fig. 1. The sampling sites of 1: *Bithynia pesicii* n. sp., Akçapınar (Muğla region). 2: *B. pseudemmericia*, Kirgöz-Döşemalti (Antalya region, loc. typ.). 3: *Pseudobithynia pentheri*, Kayseri region.

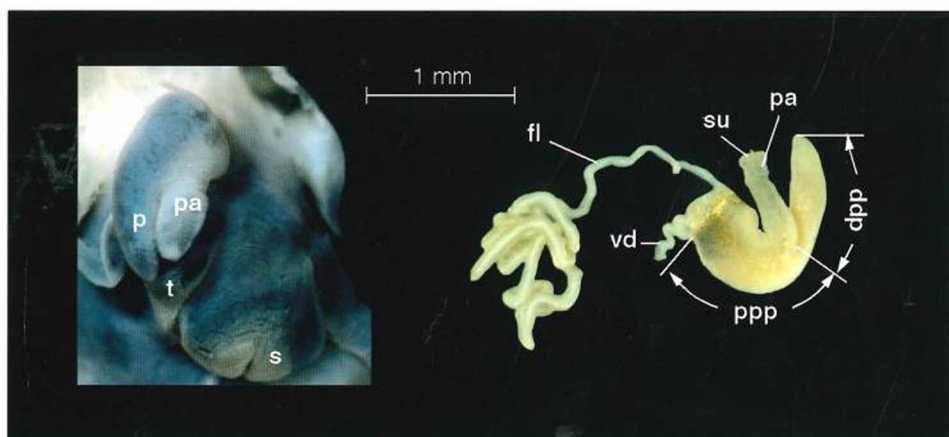


Fig. 2. The Morphology of the penis of *Bithynia* species (*B. mostarensis* Moellendorf, 1873). fl=flagellum, dpp=distal part of the penis, p=penis, pa=penial appendix, ppp=proximal part of the penis, s=snout, su=sucker, t=tentacle, vd=vas deferens (after GLOER & PEŠIĆ, in press).

Results

The morphology of the penis

The penis in *Bithynia* species is situated at the neck behind the right tentacle. From dorsal view on the left side a penial appendix branches off with a sucker at the distal end and a flagellum (accessory gland after PONDER 2003) at the opposite end in the cephalic cavity. The penial appendix subdivides the penis into two parts, the proximal (ppp) and the distal (dpp) part (Fig. 2).

The penis of each particular *Bithynia* species known up to now is, however, intraspecifically variable, but has some unchangeable interspecific features, which enable the determination of the distinct species. These unchangeable characters are the distal part of the penis (broad or narrow, tapered or not tapered), the tip of the penis (rounded or pointed), the flagellum (short, long, very long), the relative length of the penial appendix to the distal part of the penis (short or approximately of the same length), and the relations between the proximal (ppp) and the distal part of the penis (dpp).



Fig. 3. *Bithynia pesicii* n. sp. 1–2: male, Holotype (ZMH 37581), 3–4: female.

Descriptions

Bithynia pesicii n. sp.

Material examined: 26.V.2004 leg. M. Z. YILDIRIM. We dissected 30 adult specimens.

Holotype: Shell 6.6 mm high, 4.2 mm wide. Zoologisches Museum Hamburg (ZMH) No. 37581.

Paratypes: ZMH 37582, Süleyman Demirel Üniv. Burdur Eğitim Fak., Burdur (Turkey), and collection of the senior author.

Locus typicus: Akçapınar Stream near Akçapınar Village, 37°2.22'N, 28°21.14'E, (Muğla, Turkey).

Habitat: A small nearly 5–6 km long stream with its source in a little swamp area with a rich vegetation. *Bithynia pesicii* n. sp. lives on stones. Temperature: 13–16.9 °C, pH: 7.5–8.3, O₂: 7.1–9.1 mg/l; Cl: 25–90 mg/l, and carbonate hardness 7.6–13.8 °dH.

Etymology: named after Dr Vladimir Pešić (Podgorica, Montenegro), an outstanding expert on water mites, who found so many new freshwater mollusc species in the Balkan region.

Diagnosis: The yellowish shell has 4–5 convex whorls with a deep suture. The aperture as well as the operculum show an obtuse angle, and at the point of contact with the last whorl they are concave. The umbilicus is slit-like. The nucleus of the operculum is eccentric. The shell is 5.9–6.6 mm high and 3.8–4.5 mm wide.

However, we found 12 males which are a little slimmer than the females. So we can consider a poorly developed dimorphism within this species.

Anatomy: The penial appendix branches off from the distal third of the penis. The penial appendix is three times longer than the distal part of the penis. The flagellum is very short.

Bithynia pseudemmericia Schütt, 1964

Arch. Moll. 93(5/6): 177–178, fig. 2 (p. 174) and 6 (radula and operculum, p. 177).

Locus typicus: "See von Bunarbaşı bei Yeniköi, 40 km n. Antalya."

Material examined: We studied 20 specimens of this species from different sampling sites: 5 ex. from loc. typ., 3 ex. from Yeniköy spring (near loc. typ.), 3 ex. from spring Astyda (near loc. typ.), Eber Lake, Afyon (250 km far from loc. typ.), and 9 ex. from Isparta, Eğirdir Lake (littoral zone).



Fig. 4. Topotype of *Bithynia pseudemmericia*.

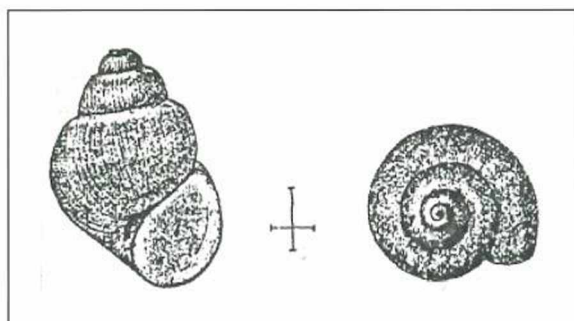


Fig. 5. Original drawing of *Pseudobithynia pentheri* (Sturany, 1904).

Anatomy: The penis has a very short distal part (dpp) with a very long penial appendix, as well as a long flagellum (Fig. 4.4).

Pseudobithynia pentheri (Sturany, 1904)

Anz. Ak. Wiss. Wien, **10**: p. 116, *Bithynia pentheri*.

Locus typicus: "Vilayet Kayseri. Soisaly 1075 m ü.M."

For identifying topotypes of *Pseudobithynia pentheri* unambiguously, the original description was not sufficient because the drawing given by Sturany seems to be not very typical. So we had to borrow the type material from the Natural History Museum Vienna but got no answer from the curator Karl Edlinger to our request. But the Natural History Museum Basel (Switzerland) lent us the paratypes. So we could identify the *Pseudobithynia pentheri*, described as *Bithynia pentheri* by Sturany.

While dissecting the species we found that there are no flagellum und no clear penial appendix visible, only a swollen spot. So we have to realise that this species does not belong to the genus *Bithynia*, but to the genus *Pseudobithynia* GLÖER & PEŠIĆ 2006.

Already STURANY (1905) wrote: "Die neue Art, von Dr. Penther in Soisaly, Erdschias-Dagh am 6./VI. 1902 entdeckt, nimmt in der Gattung *Bithynia* eine ziemlich isolierte Stellung ein, so daß es schwer ist, die nächstverwandten Formen namhaft zu machen."

[Translation: „The new species, found by Dr Penther in Soisaly, Erdschias-Dagh on 6./VI. 1902, is an isolated species within the genus *Bithynia*, so it is hard to name the nearest related species.”]

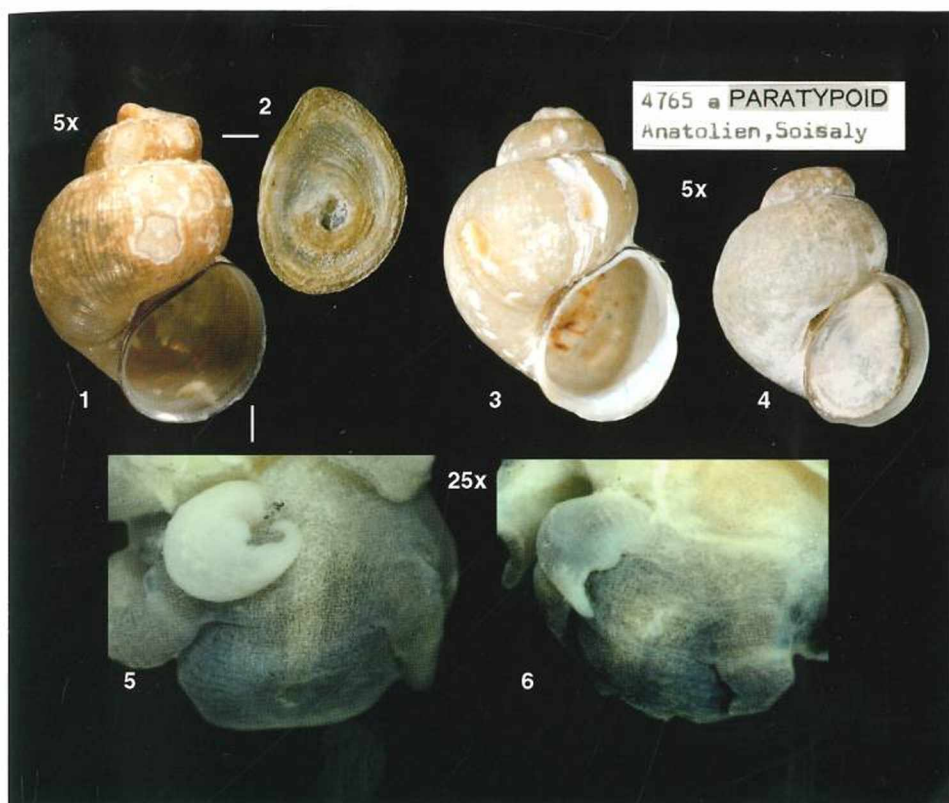


Fig. 6. *Pseudobithynia pentheri*. 1–2, 5–6: topotype; 3–4: paratypes (NHM Basel).

Acknowledgements

We would like to express our thanks to the Natural History Museum of Basel for lending us the paratypes of "*Bithynia*" *pentheri*, as well as Dr David Walker (Hamburg) for giving our English a slight polishing up.

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Received on January 20, 2006, accepted on February 2, 2006.

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Band/Volume: [24](#)

Autor(en)/Author(s): Glöer Peter, Yildirim M. Zeki

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