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# *Bithynia hareerensis* n. sp., a new *Bithynia* from Mesopotamia (Iraq) (Gastropoda: Bithyniidae)

Peter Glöer [1] & Murtada D. Naser [2]

[1] Schulstraße 3, D-25491 Hetlingen, Germany
gloeer@malaco.de
[2] Department of Marine biology, Marine Science Center, University of Basra, Iraq
bio_mur_n@yahoo.com

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## > Abstract

Continued investigations of the fauna of the freshwater molluscs in Mesopotamia revealed a new *Bithynia* species from the Garmat Ali River in the region of Basrah, *Bithynia hareerensis* n. sp. This species is compared with the *Bithynia* species mentioned in the literature from this region.

## > Kurzfassung

***Bithynia hareerensis* n. sp. – eine neue *Bithynia* aus Mesopotamien (Irak) (Gastropoda: Bithyniidae).** – Fortgeführte Untersuchungen der Süßwassermolluskenfauna in Mesopotamien brachten eine neue *Bithynia*-Art aus dem Fluß Garmat Ali in der Region von Basrah hervor, *Bithynia hareerensis* n. sp. Diese Art wurde mit aus der Literatur bekannten Arten dieser Gegend verglichen.

## > Key words

*Bithynia hareerensis* n. sp., Mesopotamia, Gastropoda.

## Introduction

In the 19th Century Westerlund (1886: 22) mentioned only *Bithynia badiella* Küster, 1853 from Mesopotamia, and Prashad (1921: 223) added *B. rubens* Kobelt, 1892, plus *B. ejecta* Mousson, 1874 for the Lower Euphrates but pointed out that this species belongs to the genus *Amnicola* (*Alocinma*), now referred to as *Pseudamnicola*, as the genus *Amnicola* occurs only in N-America. Pallary (1939: 76, pl. IV, fig. 12) reported *Bithynia iraqensis* from NE Iraq (Gireza Spring, Qalkand). In more recent papers Najim (1959) as well as Ahmed (1975) could not find a *Bithynia* sp. in Mesopotamia, but Mansoorian (1994, 2000) listed *B. badiella*, *B. tentaculata* (Linnaeus, 1758), *B. ejecta*, and *B. sistanica* from SE Iran. Other authors like Plaziat & Younis (2005) did not mention *Bithynia* from southern Mesopotamia and the many samples of the second author did not reveal many *Bithynia* spp. – thus, there are few species of the genus *Bithynia* in southern Mesopotamia.

## Material and methods

The snails where collected with a sieve from the banks of the waters and 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 (Zeiss, Germany), the photographs were made with a digital camera system (Leica R8, Germany).

## Results

The following species have been mentioned from Mesopotamia and surrounding regions, and are discussed below.


**Fig. 1**. The sampling site of *Bithynia hareerensis* n. sp.: Hareer station (part of Garmat Ali river, red point) at 30° 35' 24'' N, 47° 43' 21'' E.

## *Bithynia badiella* (Küster, 1853)

*Paludina badiella* Küster, 1853 – loc. typ.: "Beirut".

KÜSTER (1853, 62, Taf. 11, Fig. 25–28) described a sphaerical conical shell with whorls which are flattened at the suture. This flattening is visible especially at the body whorl.

NEUBERT (1998: 347, Fig. 32) designated a lectotype on which this flattening is clear visible.

## *Bithynia rubens* (Menke, 1830)

*Paludina rubens* (Menke, 1830) – loc. typ.: "in Sicilien, auch im Lago di Patria bei Neapel."

PRASHAD (1921: 223) mentioned this species though its type locality is situated in Sicilia (Italy) and so this species does not occur in Iraq. *B. rubens* is about 9 mm in height and 6 mm in width, with convex whorls, flattended at the top, and a deep suture. *B. hareerensis* n. sp. is smaller, the whorls are not flattended at the top, the whorls are less convex, and the suture is less deep.

## *Bithynia sistanica* (Annandale & Prashad, 1919)

*Amnicola* (*Alocinma*) *sistanica* Annandale & Prashad, 1919 (loc. typ.: "... dry Naizir, Northern Seistan ...").

ANNANDALE & PRASHAD (1919: 24, Fig. 2) mentioned this species as belonging to the genus *Amnicola* (nowadays: *Pseudamnicola*) but the depicted drawing of the penis morphology shows that this species is a *Bithynia* because it has a penial appendix, *Pseudamnicola* has not. The distal part of the penis is much longer and the penial appendix much shorter than in our new species.

The penis morphology in *Bithynia* is only slightly variable: in some specimens we find a dwarfism of the penis, in others parts of the penis (penis tip or penial appendix) are erected. In the latter case the proportions between distal part of the penis and penial appendix are aberrant. Thus, however, the penis morphology of three or more specimens has to be studied in doubtful case.

## *Bithynia ejecta* Mousson, 1874

*Bythinia ejecta* Mousson, 1874 – loc. typ.: La Basse-Mésopotamie. (p. 46).

PRASHAD (1921: 223) mentioned this species from the banks of the Euphrates at Nasiriyeh and at Feluja and believes that this species belongs to the genus *Amnicola*. Because at that time the distinctions between *Bithynia* and *Amnicola* (= *Pseudamnicola*) have not been clear (see also *B. sistanica*) genus determination seems to be doubtful. On the other hand he depicted the species he found (Fig. 2 in his work), a 4 mm high shell, which looks like a *Pseudamnicola*. In every case it is quite distinct from our species. In contrast Mousson mentioned *B. ejecta* as a species with a shell height of 3.2 mm and a shell width of 2.6 mm, much smaller than reported by PRASHAD (ibid). But both measurements describe a globular shell shape like a *Pseudamnicola*.

## *Bithynia iraqensis* Pallary, 1939

Loc. typ.: Gireza spring, Qalkand (Iraq) (p. 76).

PALLARY (1939: 76, pl. 4, fig. 12) depicted a photo of *B. iraqensis* which shows the distinctness from our species because the aperture is sharply angled at the top.

## *Bithynia palmyrae* (Dautzenberg, 1894)

*Bythinella palmyrae* Dautzenberg, 1894 – loc. typ.: "Rivière Epheca, à Palmyre".

ANNANDALE (1918: 162) listed this species from old lake-basin at Nasariyeh. The shell shape was similar to the species which was depicted by DAUTZENBERG

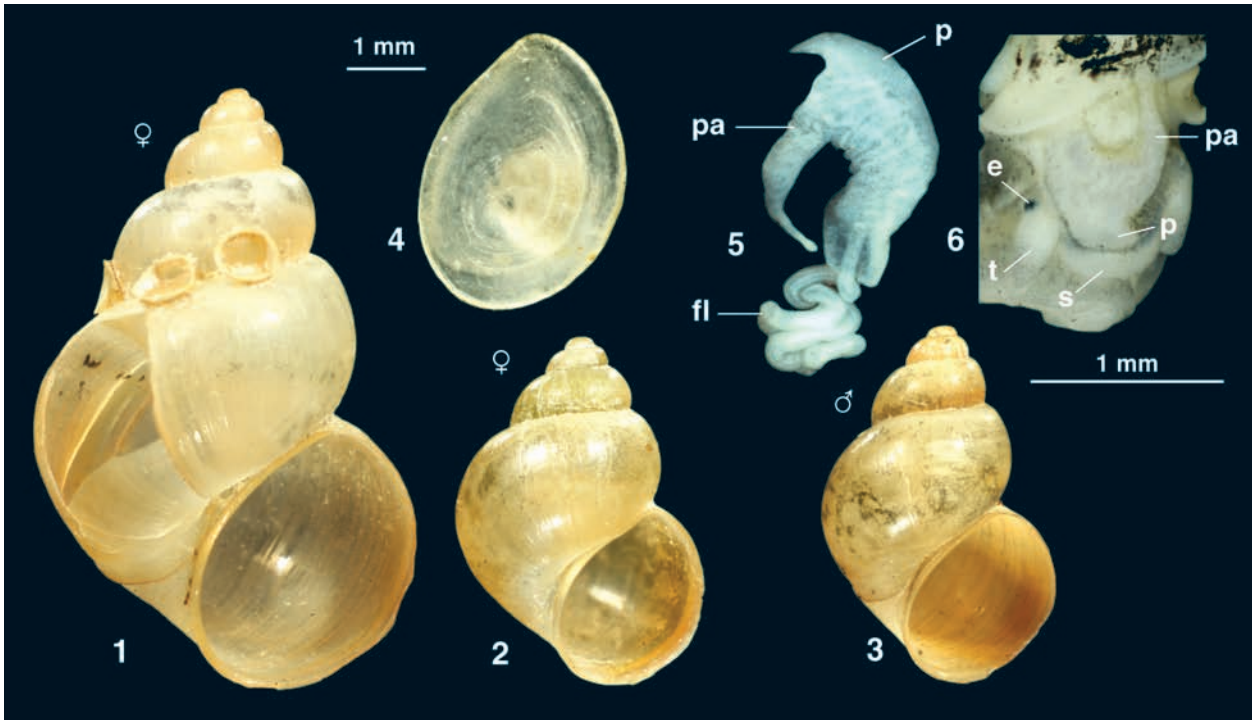


**Fig. 2**. *Bithynia hareerensis* n. sp. **1–3**: shells, **1:** full-grown, **2**: Holotype (ZMH 51261), **3**: Paratype (ZMH 51262), **4**: operculum, **5**: penis (paratype, ZMH 51262), **6**: head. **e** = eye, **fl** = flagellum, **p** = penis, **pa** = penial appendix, **s** = snout, **t** = tentacle.

(1894: 349, Fig. 4) but ANNANDALE (ibid.) critically remarked "The species is otherwise only mentioned from Palmyra in the Syrian desert". Regarding the original description it is a small species (height 3 mm) and the shell form is similar to *Bythinella*.

## *Bithynia tentaculata* (Linnaeus, 1758)

*Helix tentaculata* Linnaeus, 1758 – loc. typ.: "Habitat in Europae stagnis."

MANSOORIAN (1994, 2000) listed this European species which has never been found south of the Dinaric Alps, thus we believe that this species was misidentified. *B. tentaculata* is larger in shell height, the aperture and the operculum are sharply angled at the top, and the suture is flat.

Summarised we can state that *Bithynia hareerensis* n. sp. has not been previously recognised or discussed under another name.

## *Bithynia hareerensis* n. sp.

**Material examined:** 9 specimens from type locality.
**Holotype**: Shell height 4.7 mm, shell width 3.3 mm (ZMH 51261).
**Paratypes**: 2 specimens: height 4.5/5.3 mm, width 3.0/3.5 mm plus penis in ethanol (ZMH 51262), remainder in the collection Glöer.
**Locus typicus:** Garmat Ali river, Hareer region at 30° 35' 24'' N, 47° 43' 21'' E.
**Habitat:** The species lives on aquatic plants (*Ceratophyllum* sp.) and is associated with *Theodoxus jordani*, *Bellamya bengalensis, Radix* sp., and *Physella acuta*.
**Etymology:** Named after the river where the species lives.
**Description:** Shell glossy, reddish to yellowish horn-coloured, surface smooth, apex slim, 4.5–5.5 convex whorls with a deep suture, umbilicus closed, the aperture height takes about 0.5 of the shell height, edge of aperture sharp, outer margin of aperture straight, nucleus of the slightly angled operculum is central. A sexual dimorphism is not apparent. Shell height 4.5–5.6 mm, width 3.0–3.5 mm.
**Animal:** Mantle pigmentation black with large white spots, head light grey with many small dark spots.
**Penis:** Penial appendix long, distal part of the penis tapered and short.
**Remark:** On the shells were remnants of eggs of *Theodoxus* sp., possibly of *Th. jordani*, a common species in this region.

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