

ASSIMINEA ZUBAIRENSIS N. SP. – A NEW SPECIES FROM IRAQ (MOLLUSCA: GASTROPODA: ASSIMINEIDAE)

PETER GLÖER¹ & MURTADA D. NASER²

¹Biodiversity Research Laboratory, Schulstr. 3, D-25491 Hetlingen, Germany

²Department of Marine biology, Marine Science Center , University of Basra, Iraq

Abstract During ongoing malacological investigations of the fauna of the Iraq we found an *Assimineea* species new to science, which we describe here as *Assimineea zubairensis* n. sp. To find out if this is in fact a new species we studied the work of Abbott (1958) and Brandt (1974). Both of these authors mentioned the anatomy and depicted the species in photographs which allowed us to compare our *Assimineea* species with species already known. In addition we compared the species with *A. mesopotamica* Glöer, Naser & Yasser 2007.

Key words *Assimineea*, *Assimineea zubairensis* n. sp., Iraq

INTRODUCTION

Recent malacological investigations were undertaken in Iraq for the purpose of increasing the knowledge of the malacological fauna of this region. In the course of these studies we found a hitherto unknown species, *Assimineea zubairensis* n. sp., from the Arabian Gulf. At present only *Assimineea mesopotamica* Glöer, Naser & Yasser 2007 is known in this area, from Iraq, and *Assimineea nitida* (Pease 1864), is mentioned for Saudi Arabia by Neubert (1998). According to Brandt (1974), the latter is widely distributed from the coasts of the Indian and Pacific Oceans from Mauritius northwards to Hongkong and the Philippines.

The *Assimineea* species are, except for *A. nitida*, restricted in their distribution to small regions, though they live in coastal areas and might be expected to disperse passively with relative ease. Thus, most *Assimineea* species appear to be stenoeious.

The paper is intended to (i) improve knowledge of the diversity of this group and (ii) to describe the new species.

MATERIAL AND METHODS

The specimens of *Assimineea zubairensis* n. sp. were collected from soft sandy-muddy flats in the intertidal zone of Khor Al-Zubair port, in the north-west of the Arabian Gulf at 30°11'22.50"N 47°53'15.05"E (Fig. 1) during April 2010. Material was collected by hand during the lowest tide, then fixed in 70–80% ethanol. The dissections and measurements of the genital organs and the

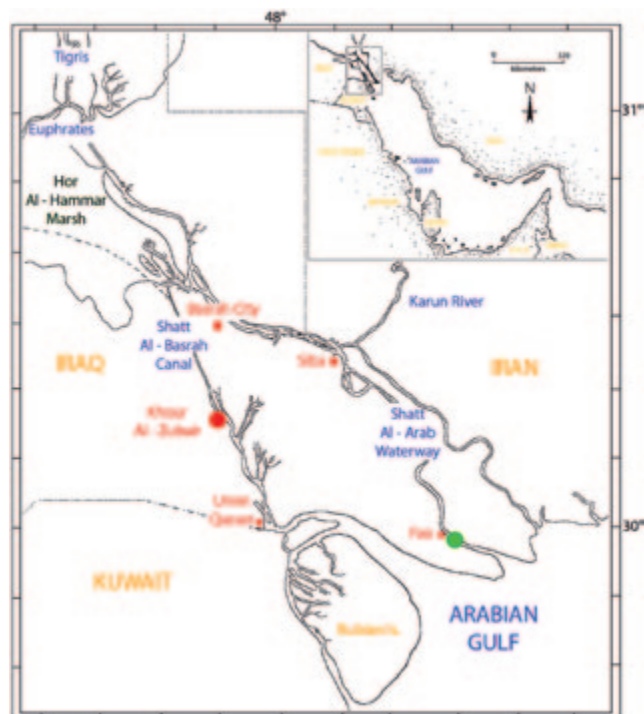


Figure 1 The sampling site of *Assimineea zubairensis* n. sp. (red dot) with the type locality of *Assimineea mesopotamica* (green dot).

shells were carried out using a stereo microscope (Carl Zeiss) with an eyepiece-micrometer; the photographs were made with a digital camera system (Leica R8). All type material is stored in the Zoological Museum of Hamburg (ZMH) and collections of the Marine Science Centre (MSC 17), University of Basrah.

Study area Khor Al-Zubair is an extension of the Gulf waters in the lower reaches of river systems in Iraq (Fig. 1). This has an approximate

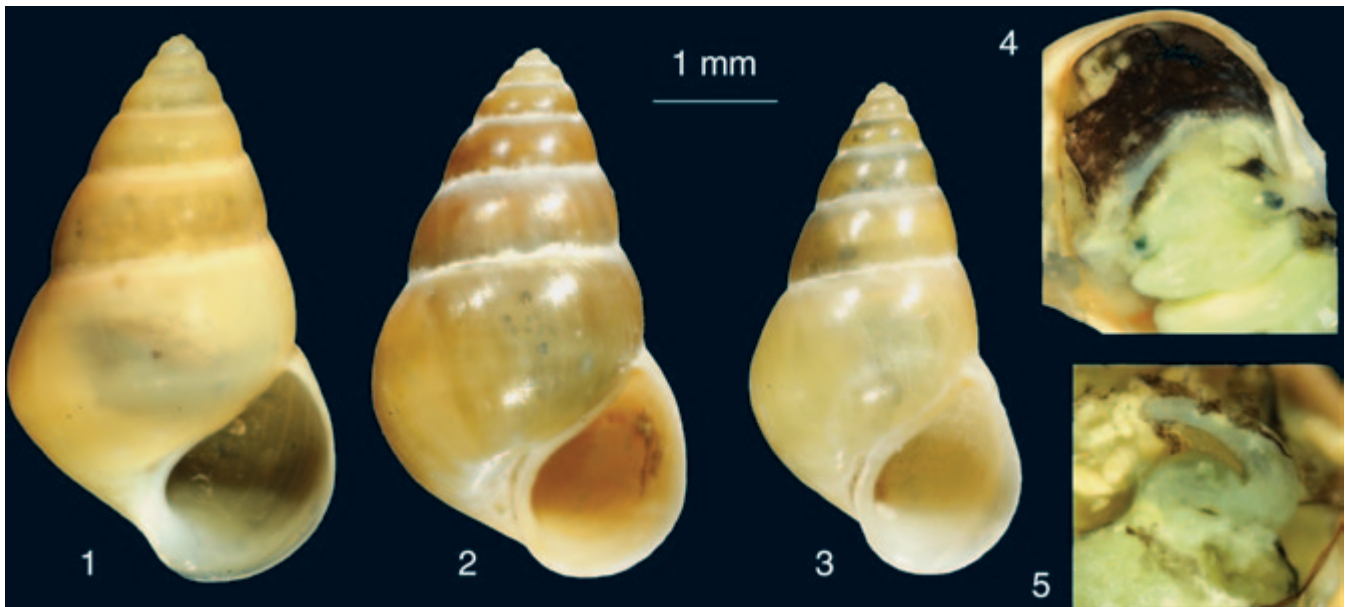


Figure 2 *Assimineea zubairensis* n. sp.: 1 holotype; 2–3 paratypes; 4 head; 5 penis.

length of 42 km, with a width of 1 km at low tide, and an average depth of 10–20 m. During 1983 this waterway was connected to an oligohaline marsh, Hor Al-Hammar, changing the environment of the Khor from a hypersaline lagoon to an estuary one (Hussain & Ahmed, 1999). The northern end of Khor Al-Zubair receives a fresh water influx of 700 m³/sec on average throughout the tidal cycle. The current in the Khor flows in only one direction during the tidal cycle, namely towards the southern end (Arabian Gulf) with velocity in excess of 2m/sec during ebb tide and 0.66 m/sec in flood tide. At the Southern end, the water discharge reaches 10000 m³/sec with a velocity range of 0.8–5.78 m/sec. having a large tidal range at Umm-Qasar of 4.3 m (Al-Badran *et al.*, 1996).

RESULTS

Genus *Assimineea* Fleming 1828

Type species *Assimineea grayana* Fleming 1828

Diagnosis Small shells (1.8–10 mm), subglobose, ovate or conical. Operculum thin, corneous, and paucispiral. Tentacles rudimentary, reduced to lobes with eyes placed at the tip of the tentacles (Fig. 2.5). The simple penis is situated in the neck.

Biology The *Assimineea* spp. prefer brackish waters, only a few species inhabit fresh waters. They live amphibiously.

Distribution World-wide, but predominantly tropical and subtropical.

Assimineea zubairensis n. sp.

Holotype 4.5 mm high, 2.7 mm broad, (ZMH 79048)

Paratypes 6 exx in ethanol (ZMH 79049), numerous exx (MSC 17), and 50 exx coll. Glöer.

Locus typicus Zones of Khor Al-Zubair port, north-west of the Arabian Gulf at 30°11'22.50"N 47°53'15.05"E (red bullet, Fig. 1).

Habitat Specimens were collected from an intertidal area. They were found on or under stones, with decayed aquatic plants, on the muddy flats, or near the borrows of the sesarmid crab *Parasesarma persicum*.

Etymology Named after the region in which the species was found.

Description A conical thick-walled shell, glossy and yellowish-brown with 7–7.5 whorls. Aperture pear-shaped with a thickened white edge to the columella. Operculum horny, thin, and translucent. Umbilicus closed, the suture clear but not deep, with a light subsutural line. There are two different forms of the shell: slim, 3.9 mm in height and 2.3 mm in width; broad, 4.2–4.5 mm high and 2.6–2.7 mm in width.



Figure 3 *Assimineea zubairensis* in its habitat.



Figure 4 *Assimineea* spp.: 1 *Assimineea mesopotamica*; 2 *A. zubairensis* n. sp.; 3 *A. nitida* (photo supplied ex Neubert (1998): 347, fig. 36).

Table 1 Differentiating features of the *Assimineea* spp. in the Arabian Gulf.

Taxon	max. shell height	shell colour	columella	Mantle
<i>A. nitida</i>	2.5 mm	greenish brown to deep brown	greenish-brown	unknown
<i>A. zubairensis</i>	4.5 mm	yellowish brown	whitish	dark brown, white border
<i>A. mesopotamica</i>	7.4 mm	reddish-brown	brown	dark brown spotted, black border

Animal Mantle is dark-brown with a whitish edge (Fig. 2.4). Penis is small, at the proximal end broad and narrowed at the distal end (Fig. 2.5). Snout bilobed, with eyes placed at tentacle tips. Tentacles reduced to stumpy, broad eye-stalks (Fig. 2.4).

Ecology Physico-chemical parameters recorded from the area of collection of the specimen on the Khor Al-Zubair port in April, 2010 were: air temperature 27.1°C, water 20.61°C, pH 7.82, salinity 37.72 psu, DO 5.77mg/l, TDS 36.78 g/l, and the texture of the substratum was silty clay (Fig. 3).

Differentiating features The new species is approximately 4.5 mm high, while *A. nitida* reaches 2.5 mm in height. The columella of *A. nitida* has the same colour as the shell, in *A. zubairensis* the columella is whitish (Fig. 4). The new species differs in the pigmentation of the mantle from *A. mesopotamica*, which provides, according to Abbott (1958), important diagnostic characters. *A. zubairensis* lives where salinity may exceed 37 psu while *A. mesopotamica* occurs in regions of lower salinity.

ACKNOWLEDGEMENTS

We would like to express our thanks to Eike Neubert for the photo of *Assimineea nitida* as well as to David Walker who checked our English.

REFERENCES

- AL-BADRAN B, AL-SADOON B & JASSIM T 1996 Flow characteristic measurement of Shatt Al-Basrah canal, south of Iraq. *Marina Mesopotamia* **11**(2): 299–310.
- HUSSAIN NA & AHMED SM 1999 Influence of hydrographic conditions on the interaction between ichthyoplankton and macrozooplankton at Khor Al-Zubair lagoon, Iraq, Arabian Gulf. *Qatar University Science Journal* **18**: 247–259.
- ABBOTT RT 1958 The gastropod genus *Assimineea* in the Philippines. *Proceedings of the Academy of Natural Science of Philadelphia* **110**: 213–278, pl: 15–25.
- BRANDT R 1974 The non-marine aquatic Mollusca of Thailand. *Archiv für Molluskenkunde* **105**: 1–423.
- GLÖER P, NASER MD & YASSER AG 2007 *Assimineea mesopotamica* n. sp. – a new species from Mesopotamia, Iraq (Mollusca: Gastropoda: Assimineidae). *Mollusca* **25**(1): 3–6.
- NEUBERT E 1998 Annotated checklist of the terrestrial and freshwater molluscs of the Arabian Peninsula with descriptions of new species. *Fauna of Arabia* **17**: 333–461.

