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Assiminea mesopotamica n. sp. – a new species from Mesopotamia, Iraq (Mollusca: Gastropoda: Assimineidae)

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> Abstract

During malacological investigations of the fauna of Mesopotamia we found an unknown *Assiminea* species which we describe here as *Assiminea mesopotamica* n. sp. To find out if this is a new species in fact, we studied especially the outstanding papers of ABBOTT (1958) and BRANDT (1974). Both authors mentioned the anatomy and depicted the species by photographs which allowed us to compare our *Assiminea* species with the already known species. Most of the *Assiminea* species are restricted in their distribution to small regions. Though they live in coastal regions they should have a chance of passive dispersal, so most *Assiminea* species seem to be stenoecious.

> Kurzfassung

Bei malakologischen Untersuchungen der Fauna Mesopotamiens fanden wir eine unbekannte *Assiminea*, die wir hier als *Assiminea mesopotamica* n. sp. beschreiben. Um herauszufinden, ob diese tatsächlich eine neue Art ist, studierten wir besonders die hervorragenden Arbeiten von ABBOTT (1958) und BRANDT (1974). Beide Autoren berücksichtigten die Anatomie und bildeten die Arten mit Photographien ab, die es und ermöglichten, unsere *Assiminea*-Art mit den bereits bekannten Arten zu vergleichen. Die meisten Arten sind in ihrer Verbreitung auf kleine Gebiete beschränkt. Da sie in Küstenregionen, leben sollte eine passive Ausbreitung kein Problem darstellen, so scheinen die meisten *Assiminea*-Arten stenök zu sein.

> Key words

Assiminea, *Assiminea mesopotamica* n. sp., Mesopotamia.

1. Introduction

Recent malacological investigations were undertaken in Mesopotamia for the purpose of increasing the knowledge on the malacological fauna of this region. In the course of these we found an *Assiminea* sp. which was hitherto unknown, *Assiminea mesopotamica* n. sp.

In former times the important studies of ANNANDALE (1918) and PRASHAD (1921) contained no records of *Assiminea* from this region, neither do their investigations on the neighbouring region Seistan (ANNANDALE & PRASHAD 1918). Only NEUBERT (1998) mentioned *Assiminea nitida nitida* (Pease, 1864) of Saudi Arabia ("Eastern Province, al-Qatif Oasis, freshwater course W of town"), a species the shell of which is only 2.70 mm high. According to BRANDT (1974) this species is widely distributed along the coasts of the Indian and Pacific Oceans from Mauritius northwards to Hongkong and the Philippines. In Thailand this species is common in mangrove and nipa palm swamps in the coastal areas, where it is found attached on stones and wood and feeds on decaying organic matter. ABBOTT (1958) mentioned numerous subspecies of *Assiminea nitida* which are up to 4.5 mm in height (*A. n. dinagatensis* Abbott, 1948, from the Philippines). The new species described here is 7.4 mm high and differs in the pigmentation of the mantle, which provides, according to ABBOTT (1958), an important feature to distinguish particular *Assiminea* species.

Another known *Assiminea* species which lives in the coastal region of the Arabic See is *Assiminea cornea* (Leith) the locus typicus of which is in the harbour of Bombay. But this species is perforated and only 4 mm high (BOETTGER 1887). FRAUENFELD (1865) pointed out that the name *A. cornea* is preoccupied by *Hydrocena cornea* Pf. if the latter species is an *Assiminea*. Precautionaryly he gave *A. cornea* (Leith) the new name *A. fairbankii*.

Most of the *Assiminea* species are restricted in their distribution to small regions, though they live in coastal regions and should have the chance of passive dispersal. So most *Assiminea* spp. seem to be stenoecious.

Material and methods

The snails were collected with a sieve, and 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 (Stemi SV 6, Carl Zeiss, Germany) with an eyepiece-micrometer; the photographs were made with a digital camera (Nikon D70). All type material is stored in the Zoological Museum of Hamburg (ZMH).

Study Area

See Fig. 1.

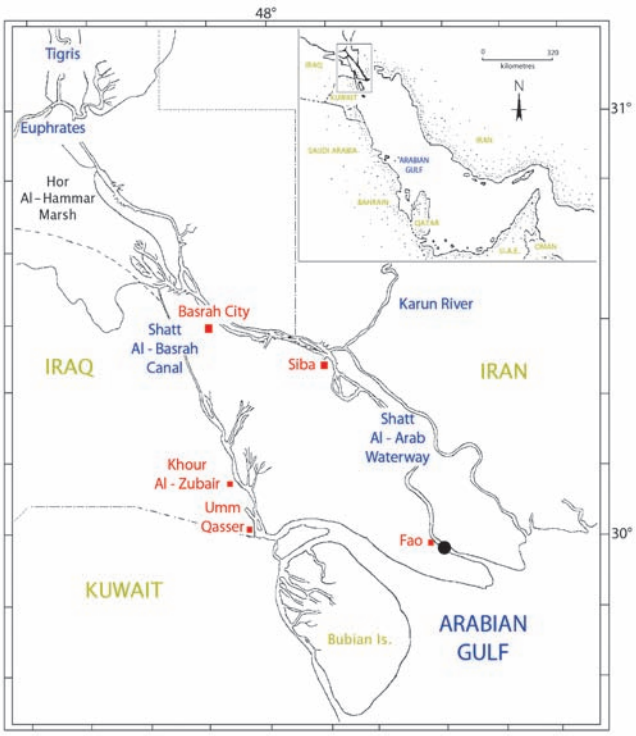

Fig. 1. The sampling site. ● = locus typicus of *Assiminea mesopotamica* n. sp.).

Results

Genus *Assiminea* Fleming, 1828

Type species: *Assiminaea grayana* Fleming, 1828

Description: 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 tentacle (Fig. 2.5). The simple penis is situated in the neck (after BROWN 1994, BRANDT 1974).

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

Distribution: World-wide but predominantly tropical and subtropical.

BROWN (1994) mentioned three *Assiminea* spp. from Africa, which are restricted to Mozambique and South African coast (*A. bifasciata* Nevill, 1880), Nigeria (*A. bessei* O. Boettger, 1887), and Kenya (*A. keniana* Brown, 1980). These species have in contrast to *A. mesopotamica* n. sp. a clear suture and the two latter have convex whorls.

ABBOTT (1958) studied the *Assiminea* spp. of the Philippines. Most of them are restricted to the Philippine Islands (*A. philippinica* O. Boettger, 1887, *A. thielei* Abbott, 1958, *A. crassitesta* O. Boettger, 1893, *A. semilirata* O. Boettger, 1893, *A. blanfordi* Abbott, 1958, *A. boettgeri* Abbott, 1958, *A. habei habei* Abbott, 1958, *A. habei luzonica* Abbott, 1958, *A. morrisoni* Abbott, 1958, and *A. hidalgoi* Gassies, 1869).

Assiminea brevicula (Pfeiffer, 1855) and *A. marginata* (Leith, 1853) are known from the west side of India (Bombay) but the shells are in contrast to *A. mesopotamica* n. sp. globose. Only *A. nitida nitida* (Pease, 1865) is a widespread species divided into many subspecies of local range (*A. nitida marshallensis* Abbott, 1958: Marshall Islands, *A. n. quadrasi* Moellendorff, 1895: Masbate Island, Philippines, *A. n. guamensis* (Abbott, 1949): Philippines and Hawaiian Islands, *A. n. pseudoquadrasi* (Abbott, 1948): Philippines, *A. n. dinagatensis* (Abbott, 1948): Philippines, and *A. n. nitidula* Thiele, 1927: Philippines).

The *Assiminea* species from Thailand mentioned by BRANDT (1974) are, however, locally restricted in their distribution, too, except *A. nitida* (Pease, 1865). These are *A. schlickumi* Brandt, 1974 (Rayong), *A. schuetti* Brandt, 1974 (Trad Province), *A. zilchi* Brandt, 1974 (Trad Province), *A. javana* (Thiele, 1927) (Java), and *A. beddomeana* Nevill, 1880 (Palian).

Thus we can say, that only *Assiminea nitida* is widely distributed along the coasts of the Indian Ocean. ABBOTT (1958) reported many measurements

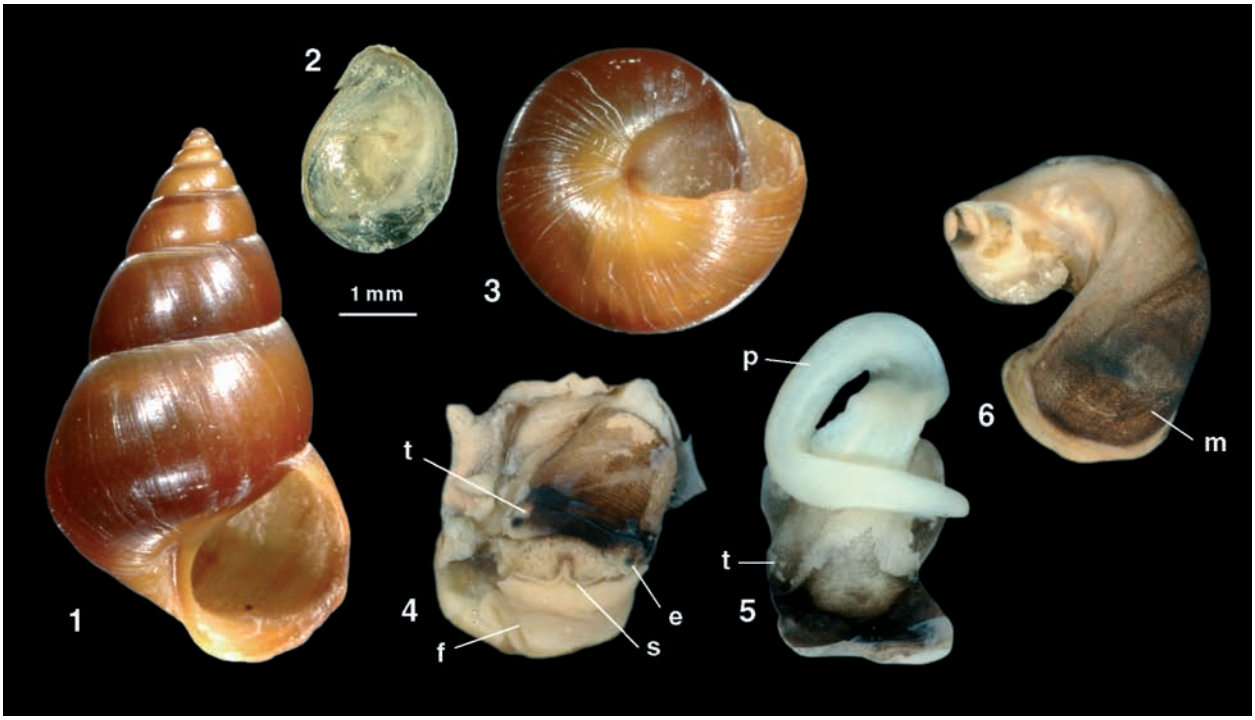

Fig. 2. *Assiminea mesopotamica* n. sp. **1–3**: Holotype; **2**: Operculum; **3**: umbilical view; **4**: Head; **5**: Penis; **6**: Mantle pigmentation. **e** = eye, **f** = foot, **m** = mantle, **p** = penis, **s** = snout, **t** = tentacle.

of *Assiminea nitida* ssp. which shows a plasticity in shell size between 12–36%. The smallest subspecies is 2.5–3.0 mm high and the largest one 3.5–4.0 mm. After BRANDT (1974) the size of the shell of *A. nitida* is 1.8–2.4 mm high and after NEUBERT (1998) the species has a shell height of 2.5 mm.

Assiminea mesopotamica n. sp.

Material examined: 15 ex. from loc. typ.
Holotype: 7.4 mm high, 4.3 mm broad, Fig. 2.1. (ZMH 51016).
Paratypes: 3 ex. in ethanol + penis (ZMH 51017)
Locus typicus: Shatt Al-Arab-Fao region (black bullet, Fig. 1).
Habitat: Lives in submerged vegetation; water temperature: 31.2°C; BOD: 3.7 mg/l; pH: 7.99; salinity: 4.3 psu.
Etymology: Named after the region where the species lives.
Description: The conical thick-walled shell is glossy and reddish-brown with 6.5 whorls. The aperture is ovate with a thickened edge at the columella. The Operculum is horny, thin, and translucent (Fig. 2.2). The umbilicus is closed (Fig. 2.3), the suture is clear but not deep. The shell is 6.8–7.4 mm high and 4.0–4.3 mm broad.
Animal: The mantle is light-brown and except the margin dark-brown spotted (Fig. 2.6). The penis is long, at the proximal end broad and lessened at the distal end (Fig. 2.5). The snout is bilobed, and the eyes are placed at the tip of the tentacles reduced to stumpy eye-stalks (Fig. 2.4).

Differential diagnosis

Assiminea mesopotamica is three times larger than *Assiminea nitida* (Pease, 1865) and twice as large as *A. cornea* (Leith, 1853). The umbilicus of *A. cornea* is clear opened in contrast to *A. mesopotamica*. From *A. nitida* it differs in the proportions of the shell height: width, which is 1.4–1.5 in *A. nitida*, and 1.7–1.72 in *A. mesopotamica*.

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