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 stenoeccious.

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-Quatif 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. dinaqatensis 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 Sea 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* Pfl. if the latter species is an *Assiminea*. Precautionary 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 stenoeicous.

**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-micro-meter; 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.

**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. besset* 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 whors.


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 (Rayong Province), *A. zilchi* Brandt, 1974 (Rayong 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...
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 clearly 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*.

### References


