

SOME NOTES ON MELANOPSIDAE (GASTROPODA) OF MESOPOTAMIA

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ABSTRACT

An investigation to clarify some obscurity about Melanopsidae was performed on specimens collected from different sites of the South of Iraq. Three different morphs were recognized, two are widespread: *Melanopsis costata* and *Melanopsis nodosa*, the other *Melanopsis subtingitana* has a narrow distributions. Key words: Melanopsidae; *Melanopsis costata*; *Melanopsis nodosa*; *Melanopsis subtingitana*; South of Iraq

INTRODUCTION

Tchernov (1975) suggested that in *Melanopsis* Ferussac all shell variation reflects ecotypes belonging to a single circum-Mediterranean species (*M. praemorsum*), but Bilgin (1983) concluded that (smooth) *M. praemorsa* and (ribbed) *M. costata* are different species.

The first reference to *Melanopsis* Ferussac in the Mesopotamia is in Prashad (1921), who illustrated three species, *M. costata*, *M. nodosa* and *M. subtingitana*. But there are some confusions that still exist in the identification of Melanopsidae as all who worked on this family dealt

with it as a single species *M. nodosa*. So the aim of the present study is to uncover a vague about Melanopsidae in Mesopotamia.

MATERIALS AND METHODS

Specimens of *Melanopsis* Ferussac were collected from Euphrates river, Al-Hammar marshes, Al-Huwaizah marshes, and Shatt Al-Arab river (Fig.1). They were collected with sieve or picked up from stones. General conchometrics (Fig.2) include shell-height, shell-diameter, mouth-height, and mouth diameter, all were measured with a varniar caliper.



Fig. 1. The sampling sites

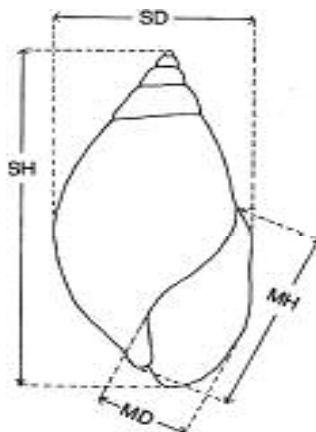


Fig (2): Shell conchometrics . Abbreviations: MH, Mouth-Height; MD, Mouth-Diameter; SH, Shell-Height; SD, Shell-Diameter.

RESULTS AND DISCUSSION

The present study reveals the presence of three *Melanopsis* species in the lower Mesopotamia: two are widespread (*M. costata* & *M. nodosa*), and one has narrow distribution (*M. subtingitana*).

Systematic Description

Family Melanopsidae

Genus *Melanopsis* Ferussac, 1807

Diagnosis

The shell is thick, imperforate, and may be smooth or heavily ribbed. A notch is present at the base of the mouth, where the outer and inner lips meet. The upper part usually contains a callus in the lower half. The columella is truncate (Heller *et al.*, 1999).

The three *Melanopsis* species of the Mesopotamia are described below.

Melanopsis nodosa (Ferussac, 1874)

(Fig. 3, Table.1)

Melanopsis nodosa, Mousson, 1874: Journ. Conchylol. XXII, P.48

Melanopsis nodosa, Brot, 1874: Die Melaniaceen in Chemnitz, Conch. Cab(ed. Kuster), p.432, pl. Xvi, Figs. 17-24(in part)

Melanopsis nodosa, Annandale, 1918: Rec. Ind. Mus., XV, P.163

Material examined

55 specimens, Al-Hammar marshes, 27.6.2006

4 specimens, Al-Huwaizah marshes, 4.7.2006

60 specimens, Euphrates river, 22.11.2006

35 specimens, Garmat Ali- river, 23.6.2006

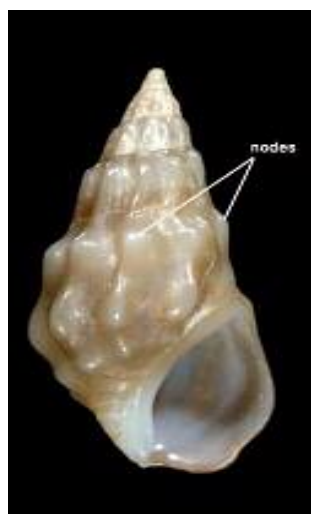


Fig. (3): *Melanopsis nodosa* (seenodes on shell)

Diagnosis

The shell is spindle-shaped, oval. The sculpture of the radial nodes, separated by depressed interstices, and faint depression

running around body whorl. The Aperture is oval, angulated above with short deep anterior canal. The columellar lip is broad, strongly folded with callus.

Table(1). Conchometrics of *M. nodosa* from Mesopotamia (n=45)

Characteristic	Average (mm)
Shell-height	20.4
Shell-diameter	9.8
Mouth-height	8.6
Mouth-diameter	4.9

Remarks

M. nodosa differs from *M. costata* in that it has nodes on the shell.

Habitat and Distribution:

M. nodosa is widespread in occurrence . It lives in a wide variety of aquatic habitats, on stones, on aquatic plants *Ceratophyllum demersum* , and sometimes also on silty mud. *M. nodosa* is widespread in Al-Hammar marshes (30.4130 °N- 47.3529 °E) , Garmat-Ali river (30.3501 °N- 47.4501 °E), and lower Euphrates river (near the power station of Nasariyeh city), but it has a narrow distribution in Al-Huwaizah marshes (31.3412 °N- 47.3011 °E).

It was also recorded in Iran , restricted to Khuzestan , South West of Iran (Annandale & Prashad, 1919; Mansoorian, 1994).

***Melanopsis costata* (Oliver, 1804)**

(Fig. 4 , Table. 2)

Melanopsis costata, Mousson, 1874, op. cit., pp.48-49

Melanopsis costata, Brot, 1879, op.cit.,pp. 426-429, pl.xlvi, figs. 4-7

Melanopsis costata, Preston, 1913, Journ. As. Soc. Bengal, IX, P.467

Material examined

96 specimens, Al-Hammar marshes, 27.6.2006

25 specimens, Al-Huwaizah marshes, 4.7.2006

98 specimens, Euphrates river, 22.11.2006

56 specimens, Garmat Ali- river, 23.6.2006



Fig. 4. *Melanopsis costata* (see ribs on shell)

Diagnosis

The shell is ribbed, except for its uppermost whorls. The ribs almost always extend the entire height of each whorl and most of them descend vertically; sometimes however, the ribs above the mouth may be bend leftwards, towards the

columella. The ribs are almost uniform rather than bumpy and the upper section of each rib (near the suture) is almost always rounded. Shell colour, which varies from grayish yellow to reddish brown or black, may be uniform or banded.

Table 2. Conchometrics of *M. costata* from Mesopotamia (n=76)

Characteristic	Range (mm)
Shell-height	22.2
Shell-diameter	10.4
Mouth-height	10.1
Mouth-diameter	5.2

Remarks

M. costata differs from *M. nodosa*, in its ribbed shell.

Habitat and Distribution:

M. costata is widespread in occurrence. It lives in a wide variety of aquatic habitats, on stones, on aquatic plants *Ceratophyllum demersum*, and sometimes also on silty mud. *M. costata* is widespread in Al-Hammar marshes (30.4130 °N- 47.3529 °E), Garmat-Ali river (30.3501 °N- 47.4501 °E), and lower Euphrates river (near the power station of Nasariyeh city), and in Al-Huwaizah marshes (31.3412 °N- 47.3011 °E).

M. costata is widely distributed throughout Syria, Palestine, Jordan vally and in Europe (Heller & Sivan, 2001, 2002). It

was also recorded from Iran, restricted to Khuzestan, South West of Iran (Annandale & Prashad, 1919; Mansoorian, 1994).

Melanopsis subtingitana

(Fig. 5,6, Table. 3)

Melanopsis subtingitana, Annandale, 1918, op.cit., pp. 163, pl.xx, figs.1,2.

Material examined

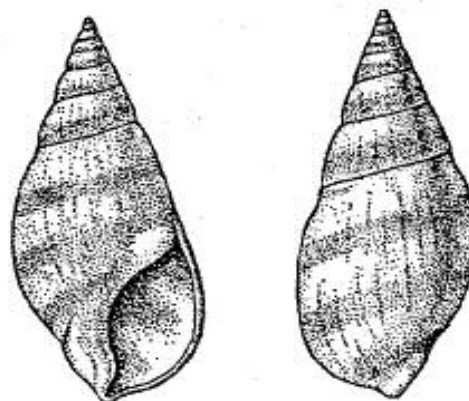
13 specimens, Al-Hammar marshes, 27.6.2006

38 specimens, Euphrates river, 22.11.2006

15 specimens, Garmat Ali- river, 23.6.2006



Fig. 5. *M. subtingitana*



**Fig. 6. Type specimen of *M. subtingitana*
From the creek connected with Diala
river, Mesopotamia (Prashad, 1921)**

Diagnosis

The shell is thick, smooth, with a very regular ovate-conical shape, narrow, sharply pointed at the apex, from which it increases gradually and evenly. The spire is conical, unbroken, with suture little impressed and the whorls not at all swollen. Seven or seven and a half whorls persist in the adult shell. The mouth of the shell is narrowly ellipsoidal and is

produced backwards in the form of a narrow slit which is at first straight and then curves inwards and is not protected by an overhanging lip. The columella is almost straight and pointed at its extremity, which does not project beyond the lip. The callus is poorly developed.

Table 3. Conchometrics of *M. subtingitana* from Mesopotamia (n=22)

Characteristic	Average (mm)
Shell-height	16.9
Shell-diameter	7.5
Mouth-height	8.1
Mouth-diameter	4.1

Remarks

M. subtingitana differs from *M. nodosa* and *M. costata* in its smooth shell.

Habitat and Distribution:

M. subtingitana has a narrow distribution in Mesopotamia. It lives in wide varieties of aquatic habitat, on stones and on aquatic plants *Ceratophyllum demersum*. *M. subtingitana* is spread in Al-Hammar marshes (30.4130 °N-47.3529 °E), Garmat-Ali river (30.3501 °N-47.4501 °E), and lower Euphrates river (near the power station of Nasariyeh city), it is absent in Al-Huwaizah marshes.

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Key to the species of *Melanopsis* Ferussac shells of Mesopotamia

- 1- Macrosculpture present2
 - No macrosculpture3
- 2- Nodules on shell surface*M. nodosa*
 - Rib present.....*M. costata*
- 3- Smooth and regular ovate- conical shape, narrow sharply pointed to the apex.....*M. subtingitana*

بعض الملاحظات عن عائلة Melanopsidae (بطنية القدم) في وادي الرافدين

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الخلاصة

تم فحص عدد من بطنية القدم تعود الى عائلة Melanopsidae من اماكن مختلفة من جنوب العراق لتوضيح بعض الغموض عن هذه العائلة. ثلاثة اشكال مختلفة تم تمييزها وهي: *Melanopsis nodosa* و *Melanopsis costata* ذات الانتشار الواسع و *Melanopsis subtingitana* ذو الانتشار الضيق في مياه جنوب العراق.