

On Some Ostracode Species of the Avanah Formation from Dohuk Area N. Iraq

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ABSTRACT

Six Ostracode species belonging to the Trachyleberididae and Xestoleberididae are recorded for first time from Avanah Formation (M.Eocene), Dohuk area, Northern Iraq. These species are: *Uroleberis globosa* Ducasse 1967, *Uroleberis* sp., *Acanthocythereis* (*Canthylocythereis*) *heijranensis* sp. nov. *Acanthocythereis* (*Canthylocythereis*) sp., *Acanthocythereis* (*Canthylocythereis*) *alacer* Al-Furaih 1992, and *Anommatocythereis beserensis* sp. nov.

Keywords : Avanah Formation Ostracoda Middle Eocene North Iraq

بعض أنواع الاوستراكودا من تكوين افانا، في منطقة دهوك، شمال العراق

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المخلص

تم وصف ستة أنواع من الاوستراكودا التي تعود إلى عائلتي Trachyleberididae and Xestoleberididae وسجلت لأول مرة من تكوين افانا (الايوسين الأوسط)، منطقة دهوك، شمال العراق وهي:

Uroleberis globosa Ducasse 1967, *Uroleberis* sp., *Acanthocythereis* (*Canthylocythereis*) *heijranensis* sp., Nov, *Acanthocythereis* (*Canthylocythereis*) sp., (*Canthylocythereis*) *alacer* Al-Furaih 1992, and *Anommatocythereis beserensis* sp., nov.

INTRODUCTION

Material for this study was recovered from surface samples of Avanah Formation (M.Eocene) at Geli-Bessri section, Dohuk area, N. Iraq (36 46 N, 43. 15 E) (Fig. 1), Lithologically, Avanah Formation at Geli – Bessri consists of alternation of Limestone, shale, marlyshale and shaly limestone (Fig. 2). the underlying formation is Gercus Formation; while the overling formation is the Pila spi Formation. All samples deposited at Geology Department, Mosul; under prefix Mo = Mosul University, T = Tertiary collection and Av = Avanah Formation.

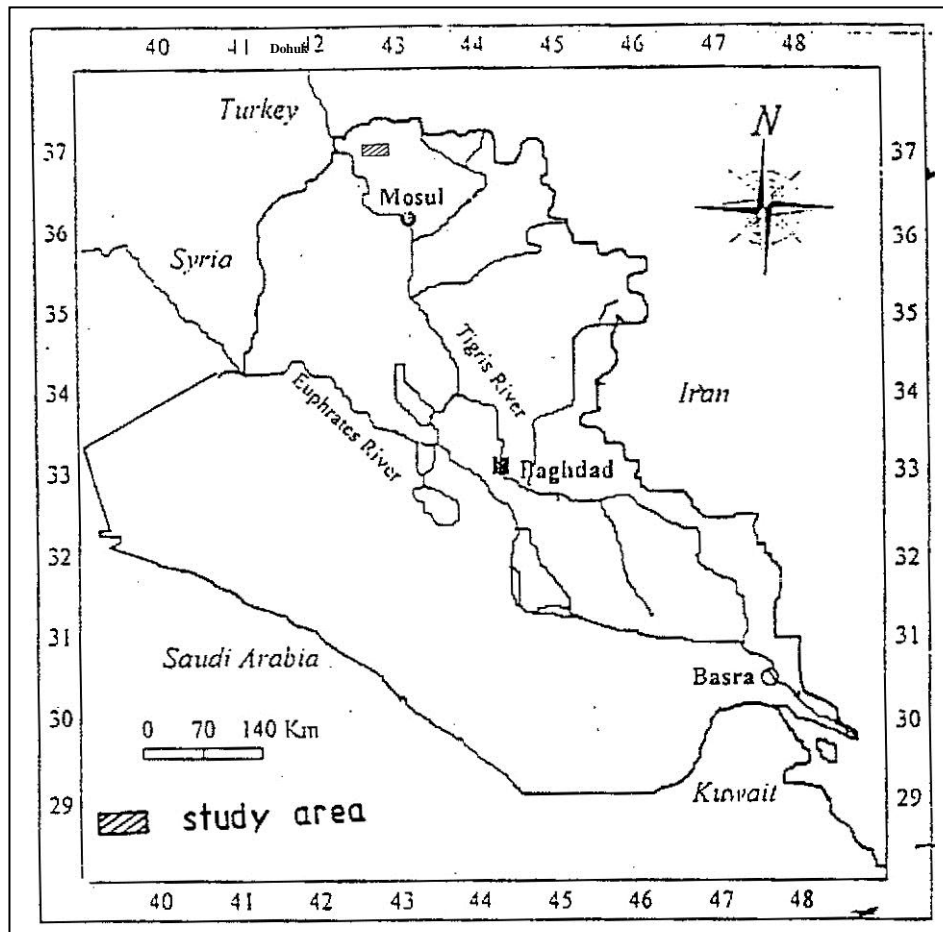


Fig. 1: Location Map

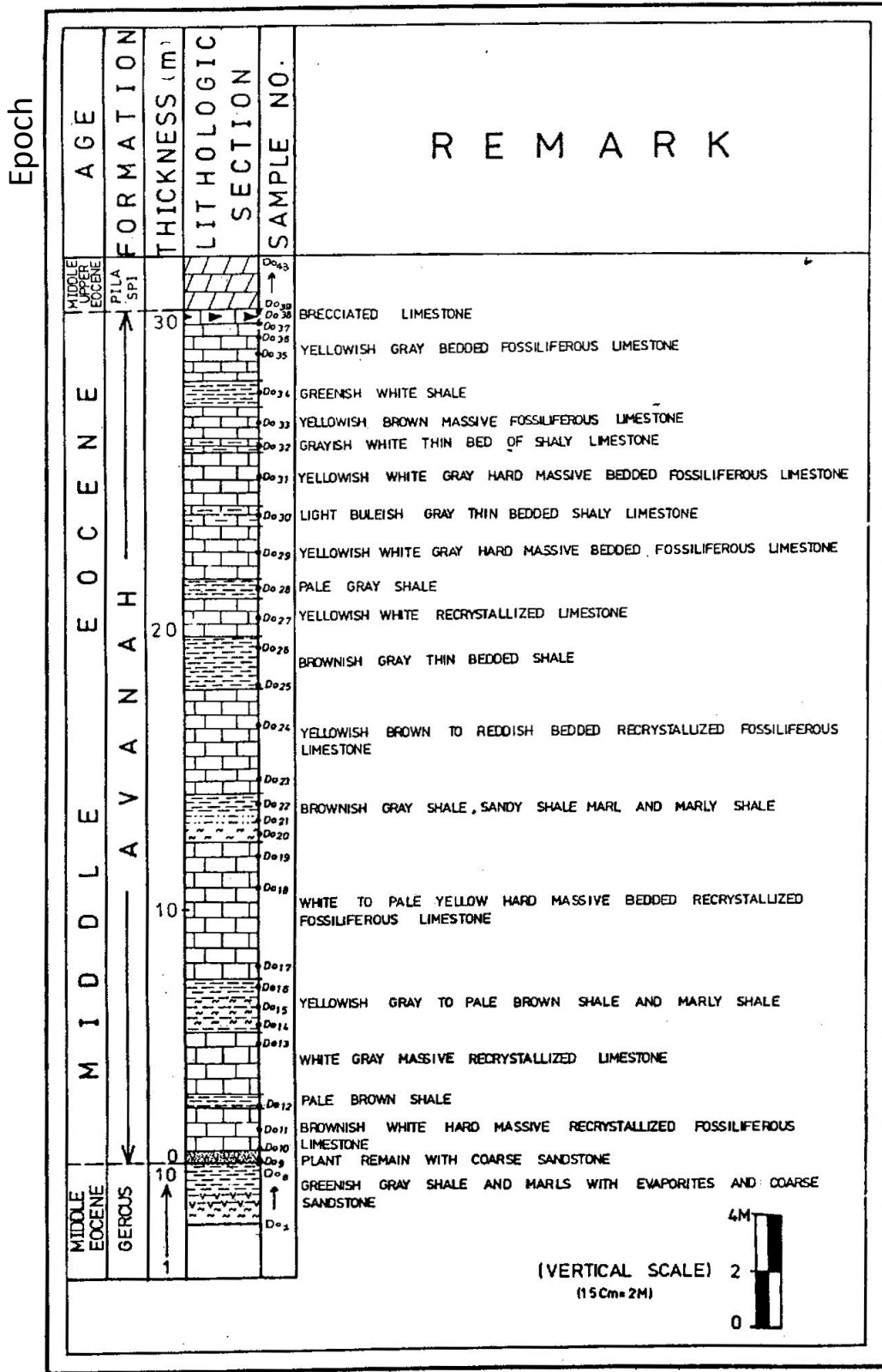


Fig. 2: Lithological Section of Avanah Formation (Middle Eocene) North of Iraq.

SYSTEMATIC PALEONTOLOGY

Class: Ostracoda Latreille, 1806.

Order: Podocopida Muller, 1896.

Superfamily: Cytheracea Baird, 1850.

Family: Xestoleberididae Sars, 1920.

Genus: *Uroleberis* Triebel, 1958.

Type species : *Eocytheropteron parnensis* Apostolescu, 1955.

Uroleberis globosa Ducasse, 1967.

Pl.1, Figs. 1, 2

1967 *Uroleberis globosa* Ducasse ; P. 37, Pl. 4, Figs. 4 - 6.

Material: Ten carapaces.

Horizon: Avanah Formation, sample No. Do. 37, Dohuk Area.

Dimensions (mm):	L .	H.	W.	L/H.
Carapace Mo.T.Av.1	.34	.18	.19	1.88
Carapace Mo.T.Av.2	.34	.18	.19	1.88

Remarks: The Iraqi specimens are identical in all characters with the Indian species described from Lower Eocene (Neale and Singh, 1985). which also recorded from Eocene in France (Ducasse *et. al.*, 1985).

Uroleberis sp.

Pl. 1, Figs. 3, 4

Material: Two carapaces

Horizon: Avanah Formation (M.Eocene) sample No. Do. 29.

Dimensions (mm):	L.	H.	W.	L/H.
Carapace Mo.T.Av.3	.57	.34	.35	1.67
Carapace Mo.T.Av.4	.57	.34	.34	1.67

Description: Carapace egg shaped in lateral view with greatest high at mid Length, dorsal margin is convex and gently slopes to the anterior and posterior ends. The posterior margin formed a short caudal process below mid-high.

Lateral surface coarsely pitted, in dorsal view the carapace is elliptical with greatest width at mid-length.

Remarks: The present species shows some similarity to *U. subtrapezida* (Neale and Singh, 1985) from Eocene (India) but differs in having less arched dorsal margin and straight ventral margin, the present species is very close in ornamentation to *U. stritopunctate* Ducasse in Elewa, 2004 from late Eocen in Egypt, but differs in having more convex dorsal margin due to lack of the material the present species left under open nomenclature.

Family: Trachyleberididae Sylvester - Bradly, 1948.

Genus: *Acanthocythereis* A.C.Howe, 1963.

Subgenus: *Canthylocythereis* AL-Sheikhly, 1992.

Type Species: *Acanthocythereis (Canthylocythereis) quinquespinosa*
AL-Sheikhly, 1992.

Acanthocythereis (Canthylocythereis) heijranensis sp. nov.

Pl. 1. Figs. 5 - 9

Derivation of name: From its type locality (Heijran village) Northern Iraq.

Diagnosis: *Acanthocythereis (Canthylocythereis)* species with raised anterior and posterior rims, ventrolateral ridge well developed, subcentral tubercle prominent, surface ornamentation reticulate with superimposed scattered small nodes.

Holotype: A female carapace Mo.T.Av.95.

Paratype: Three carapaces Mo.T.Av.96_98.

Type locality and Horizon: Avanah Formation, Dohuk Area, N. Iraq, sample No. Do. 34.

Material: (34) carapace and (18) valve.

Description: Medium-sized carapace, elongate subrectangular in lateral view, greatest height at the anterior cardinal angle, greatest length at mid height. Anterior margin obliquely rounded with well-developed marginal rim, decorated with small nodes, eye tubercle present and prominent. Posterior margin sub triangular shape, decorated with small nodes. Dorsal Margin slightly straight, jagged with small nodes and shallow furrows in between, ventral margin nearly straight. Anterior and posterior cardinal angle are present. Ornamentation consist of reticulate surface with small scattered nodes superimposed over the lateral surface. Ventral ridge well developed above the ventral margin, eye tubercle distinct at great height. Left valve larger than the right valve, overlapping along the posterior and ventral margins.

Dimensions of figured species (mm):	L.	H.	W.	L/H
Female carapace Mo.T.AV.5	.42	.29	.29	1.44
Male carapace Mo.T.AV.6	.43	.26	.21	1.65
Female dorsal view Mo.T.AV.7	.41	.28	.22	1.46
Male dorsal view Mo.T.AV. 8	.43	.26	.21	1.65
Female ventral view Mo.T.AV.9	.42	.29	.22	1.44

Remarks: The present species differs from *Acanthocythereis* (*Canthyloocythereis*) *quinquespinosa* AL-Sheikhly 1992, with its distinctive posterior shape and broad anterior margin rim in addition to the difference in ornamentation of which the former species characterize with spinosa lateral surface.

Acanthocythereis (*Canthyloocythereis.*) *bolispinosa* AL-Sheikhly 1992, differs in having wide anterior margin and strong reticulate lateral surface with spines.

Distribution: Avanah Formation (M.Eocene), Dohuk Area, N. Iraq. (Do.95 – Do.98)

Acanthocythereis (Canthylocythereis) sp.

Pl. 1, 2, Fig 10,1

Material: Two carapaces**Horizon:** Avanah Formation (M. Eocene), sample No. Do. 28.

Description: A species of *Acanthocythereis (Canthylocythereis)* with elongate carapace in lateral view. Anterior margin obliquely rounded toward the ventral margin. Posterior margin subtriangular to slightly pointed in the middle. Dorsal margin nearly straight obliquely toward the posterior margin of which the organs become narrower toward the posterior end. Ventral margin straight slightly concave at the junction with anterior margin. lateral surface reticulated with small nodes scattered over the surface, ventral ridge alate up to joint the postendorsal process. sub central tubercle is distinguish and prominent.

Dimensions (mm):

	L.	H.	W.	L/H
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Female carapace Mo. T. AV.10	.47	.28	.25	1.67
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Male carapace Mo. T. AV.11	.45	.29	.21	1.55
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Remarks: the present species left under open name due to the lack of material but it easily distinguish by having distinct anterior shape and details of ornamentation.

Acanthocythereis (Canthylocythereis) alacer AL- Furaih, 1992.

p1.2, Figs 6,7

1980 *Acanthocythereis alacer* Al-Furaih, p. 15, p 1.7, Figs. 1 - 4.

1992 *Acanthocythereis (Canthylocythereis) alacer* Al-Furaih; AL-Sheikhly,

p. 52, p1. 1, Figs. 5 - 7 and 14

Material: (20) carapaces.**Horizon:** Avanah Formation (M.Eocene) sample No.Do.34,Do.37.

Dimensions (mm):

	L.	H.	W.	L/H
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Female carapace Mo.T.Av.11	.52	.28	.22	1.8
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Female carapace Mo.T.Av.12	.57	.28	.20	1.2
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Remarks: The present species closely similar to species *Acanthocythereis* (*Canthylocythereis*) *alacer* AL- Furaih, 1992 with slight difference in details of ornamentation.

Genus: *Anommatocythere* Sohn, 1970.

Type species: *Anommatocythere microreticulata* Sohn, 1970.

Anommatocythere beserensis sp. nov

Pl. 2, Figs. 2 - 5

Derivation of name: From the type locality in Geli-Bessir village, Dohuk Area, northern Iraq.

Diagnosis: A species of the genus *Anommatocythere* characterized by well-developed ventral longitudinal ribs. Dorsal margin marked with well developed anterior and posterior canted angles particularly in the left valve.

Holotype: A male carapace Mo.T.Av.102.

Paratype: Three specimens Mo.T.Av.96-98.

Type locality and Horizon: Avanah Formation, Dohuk area, Northern Iraq, sample No. Do.28.

Material: (36) carapace

Description: Carapace thick, medium size, elongate to subrectangular in lateral view, ventrally inflated, greatest length below mid-height. Anterior margin broadly rounded, posterior with short caudal process, anterior & posterior cardinal angle well developed particularly in left valve. Subcentral tubercle present and distinct eye-tubercle lies below and slightly anterior to cardinal angle. Lateral surface covered with fossae reticulation in addition to distinctive longitudinal ribs, dorsal and ventral lateral ridge well developed.

Dimensions (mm) :	L.	H.	W.	L/H
Male carapace (Mo.T.Av.13)	.۵۴	.۲۸	.۱۷	۱.۹۲
Female carapace (Mo.T.Av.14)	.52	.34	.21	0.52
Female carapace (Mo.T.Av.15)	.51	.33	.19	0.54
Male carapace (Mo.T.Av.16)	.54	.2۹	.18	1.86

Remarks: The present species differs from *Anommatocythere laqueata* Siddiqui, 1971 in having less distinct posterior cardinal angle and the fossae are smaller, rounded and less inflated ventrally.

Anommatocythere porata Al-Furaih and Siddiqui, 1981 differs from the present species in having thick marginal rim and well developed caudal process.

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PLATE 1

Uroleberis globosa Ducasse, 1967

Fig.1: external carapace, right valve. (Mo. T. Av. 1) X. 188.

Fig.2: dorsal view. (Mo. T. Av. 2) X. 182.

Uroleberis sp.

Fig.3: external carapace, right valve. (Mo. T. Av. 3) X. 107.

Fig.4: dorsal view. (Mo. T. Av. 4) X. 107

Acanthocythereis (Canthylocythereis) heijranensis sp. nov.

Fig.5: external female carapace, left valve. (Mo. T. Av. 5) X. 145

Fig.6: external male carapace, right valve. (Mo. T. Av. 6) X. 155

Fig.7: Female dorsal view. (Mo. T. Av. 7) X. 148

Fig.8: Male dorsal view. (Mo. T. Av. 8) X. 144

Fig.9: ventral view. (Mo. T. Av. 9)X. 140

Acanthocythereis (Canthylocythereis) sp.

Fig. 10: external female carapace, right valve. (Mo. T. Av. 10) X. 127.

PLATE 1

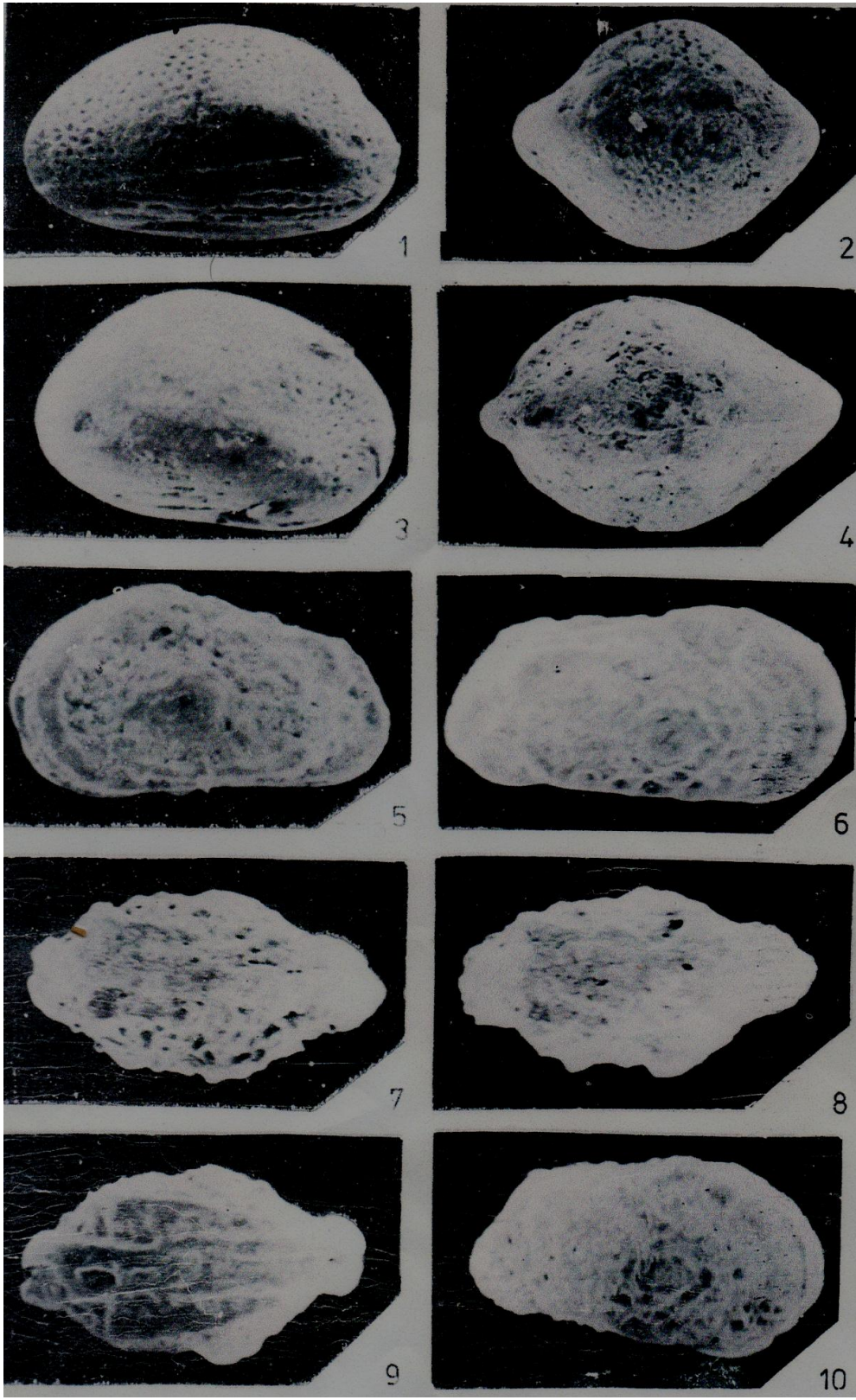


PLATE 2

Acanthocythereis (Canthylocythereis) sp.

Fig. 1: external male carapace, right valve. (Mo. T. Av. 11) X. 142.

Anommatocythereis beserensis sp. nov.

Fig. 2: external male carapace, right valve. (Mo. T. Av. 12) X. 116.

Fig. 3: external female carapace, left valve. (Mo. T. Av. 13) X. 125.

Fig. 4: female dorsal view. (Mo. T. Av. 14) X. 125.

Fig. 5: external male carapace, right valve. (Mo. T. Av. 15) X. 120.

Acanthocythereis (Canthocythereis) alacer Al-Furaih, 1992

Fig. 6: external carapace, left valve. (Mo. T. Av. 16) X. 130.

Fig. 7: external carapace, right valve. (Mo. T. Av. 17) X. 82.

PLATE 2

