Arab Gulf J. scient. Res. **2** (2), pp. 495-503 (1984)

Maastrichtian Ostracodes from Wadi al-Atj, Saudi Arabia

Ali A.F. Al-Furaih

Department of Geology, College of Science,
King Saud University, Riyadh, Saudi Arabia

ABSTRACT Three new Maastrichtian ostracode species from the Aruma Formation outcrops that border Wadi al-Atj are described in this paper; namely, *Acanthocythereis salehi*, *Clinocythere debile*, and *Pterygocythereis claustrata*.

The material for this study was recovered from surface samples from the upper Aruma Formation outcrops (Maastrichtian) that border Wadi al-Atj (lat 25° 38′ N., long 46° 10′ E., Fig. 1).

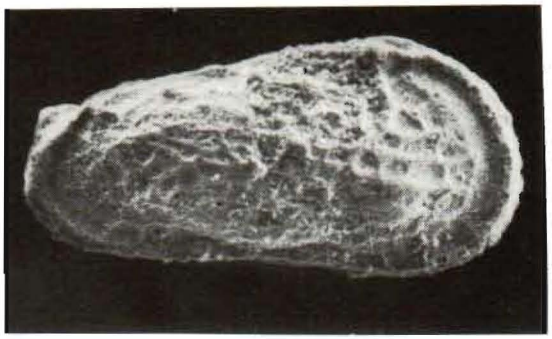
All figured specimens are deposited at the Department of Geology, King Saud University, Riyadh, Saudi Arabia.

Systematic Descriptions

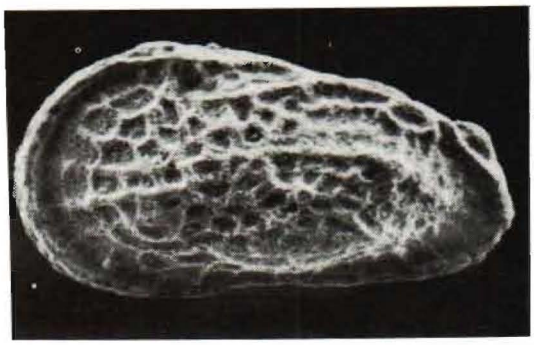
Suborder PODOCOPINA Sars, 1866
Superfamily CYTHERACEA Baird, 1850
Family TRACHYLEBERDIDAE Sylvester-Bradley, 1948
Subfamily TRACHYLEBERIDINAE Sylvester-Bradley, 1948
Genus ACANTHOCYTHEREIS Howe, 1963
Acanthocythereis salehi sp. nov.
Plate 1, Fig. 1, 2

Derivation of name

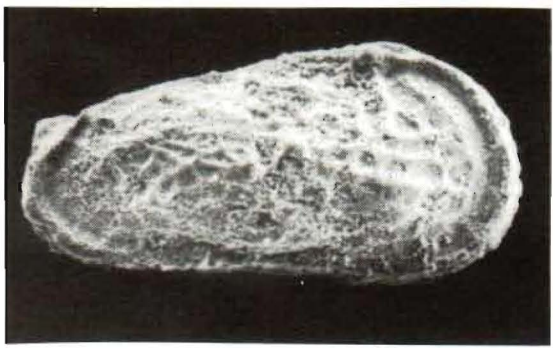
In honour of my dearest friend Saleh Othman Al-Saleh for his kindness and help in collecting the material of this study.



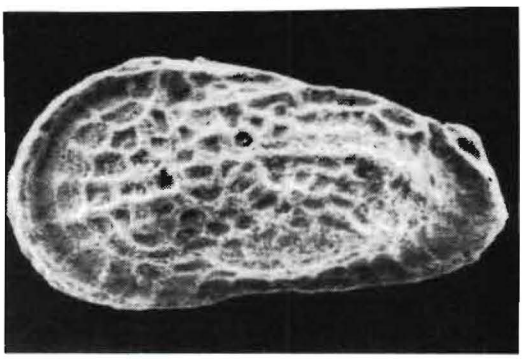
1



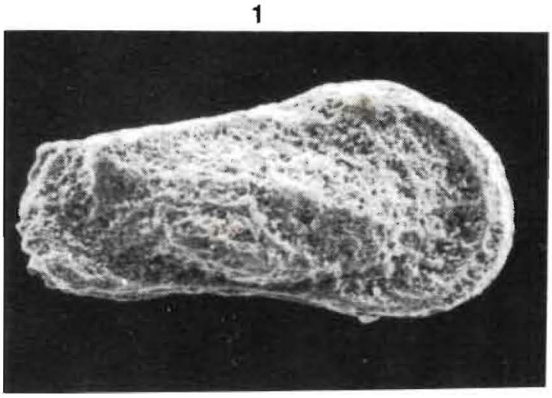
2



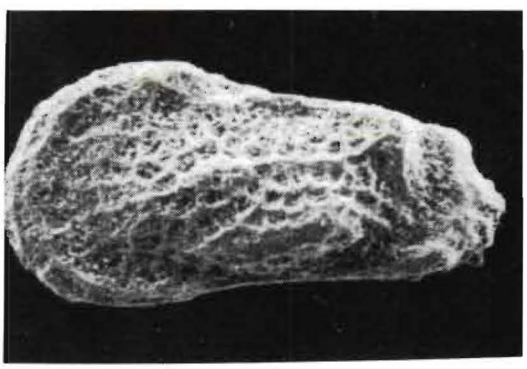
1



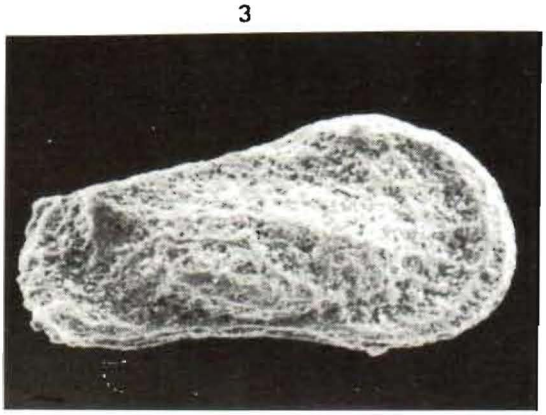
2



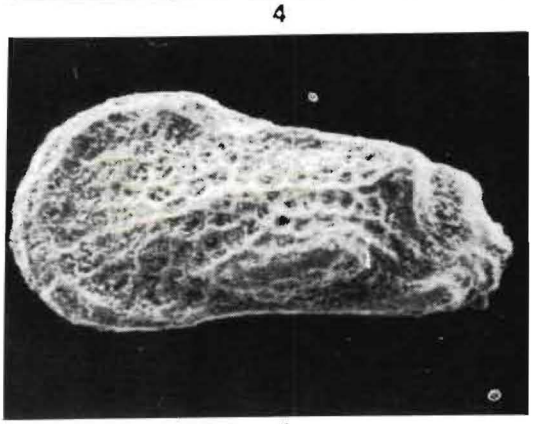
3



4



3



4

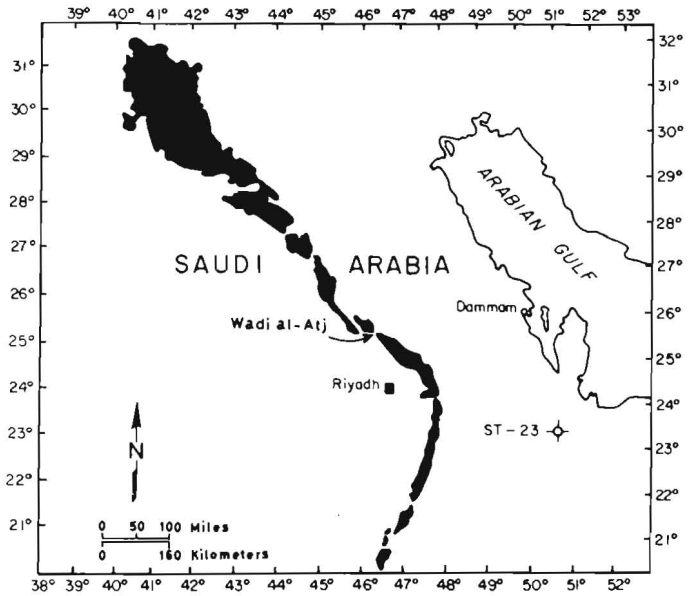


Fig. 1. Outcrop map of Aruma Formation (Upper Cretaceous) and location.

Diagnosis

A species of the genus *Acanthocythereis* in which surface is reticulate with three small elongate posterior tubercles. High anterior and posterior marginal rims.

Holotype

KSU.G.OS. 197, a female carapace (Pl. 1., Fig. 2).

Paratypes

KSU.G.OS. 198, 223-225.

Explanation of Plate 1

Fig. 1, 2. *Acanthocythereis salehi* sp. nov.
1. Paratype, male carapace, KSU.G.OS. 198. Lateral view from right, ×103.
2. Holotype, female carapace, KSU.G.OS. 197. Lateral view from left, ×108.

3, 4. *Clinocythere debile* sp. nov.
3. Paratype, male carapace, KSU.G.OS. 200 Lateral view from right, ×105.
4. Holotype, female carapace, KSU.G.OS. 199. Lateral view from left, ×107.

All specimens are from the Maastrichtian Aruma Formation of Wadi al-Atj, Saudi Arabia. All figures are stereo-pairs.

Material

Fifty three specimens from Wadi al-Atj.

Description

Shape typical of the genus. Sexual dimorphism rather strong; males more elongate, less high, and more compressed than the females. Greatest length passes below midpoint. Left valve slightly larger than right. Shell surface reticulate, fossae are bigger in the anterior third. Three elongate tubercles (bullae) below each other in the posterior third; dorsal tubercle extending anteriorly in a weak dorsal ridge, ventral tubercle smaller, median tubercle situated halfway between the dorsal and ventral tubercles. (In some specimens tubercles may be ill-defined, depending on state of preservation). Eye tubercle rounded and distinct. Subcentral tubercle present. Internal details not observed.

Dimensions (mm)

	Length	Height	Width
Holotype, female carapace, KSU.G.OS. 197	0.60	0.31	0.20
Paratype, male carapace, KSU.G.OS. 198	0.63	0.30	0.17
Paratype, male carapace, KSU.G.OS. 223	0.62	0.30	0.18
Paratype, fermale carapace, KSU.G.OS. 224	0.60	0.32	0.20
Paratype, female carapace, KSU.G.OS. 225	0.60	0.32	0.19

Remarks

Acanthocythereis prora Al-Furaih (1980) is very close to *A. salehi* sp. nov., but differs in having a more pronounced eye tubercle. Furthermore, the present species has three posterior tubercles and a less prominent subcentral tubercle. *Trachyleberis* (*Acanthocythereis*) *decoris* Siddiqui (1971) is easily differentiated from *A. salehi* by having reticulation with superimposed pustules.

Genus CLINOCYTHERE Al-Furaih, 1980

Clinocythere debile sp. nov.

Plate I, Fig. 3, 4

Derivation of name

Latin, *debilis*, weak, with reference to the weak median ridge.

Diagnosis

Clinocoythere with weak median ridge running obliquely from the posterodorsal complex passing through the subcentral tubercle to join the anterior margin.

(In badly preserved specimens, it disappears before reaching the anterior ridge). Ventro-lateral ridge short.

Holotype

KSU.G.OS. 199, a female carapace (Pl. 1, Fig. 4).

Paratypes

KSU.G.OS. 200, 226-229.

Material

Twenty one specimens from Wadi al-Atj.

Description

Sexual dimorphism apparent, the presumed males more elongate, less high, and less wide than the females. Carapace subrectangular in lateral view. Anterior cardinal angle rounded, posterior cardinal angle distinct. Left valve slightly larger than right. Shell surface reticulate with ridges; a dorsal ridge starts from posterodorsal complex and runs towards the anterior to die out behind the eye tubercle, a weak median ridge runs obliquely from the posterodorsal complex passing through the subcentral tubercle to join the anterior margin. (In some poorly preserved specimens it dies out before reaching the anterior ridge). Ventrolateral ridge short and parallel to the median ridge. Eye and subcentral tubercles prominent. Anterior and posterior margins with small denticles. Denticles may be absent, depending on state of preservation. Internal details not seen.

Dimensions (mm)

	Length	Height	Width
Holotype, female carapace, KSU.G.OS. 199	0.61	0.30	0.20
Paratype, male carapace, KSU.G.OS. 200	0.62	0.29	0.17
Paratype, female carapace, KSU.G.OS. 226	0.60	0.30	0.19
Paratype, female carapace, KSU.G.OS. 227	0.61	0.29	0.20
Paratype, female carapace, KSU.G.OS. 228	0.60	0.30	0.21
Paratype, female carapace, KSU.G.OS. 229	0.60	0.31	0.19

Remarks

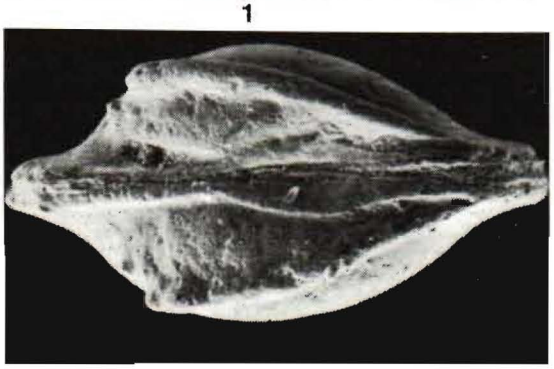
Clinocythere celata Al-Furaih (1984) is a very closely related species but differs in having very high anterior, posterior, and ventral marginal rims. Furthermore, *C. debile* is slim and has a concave ventral margin.

1

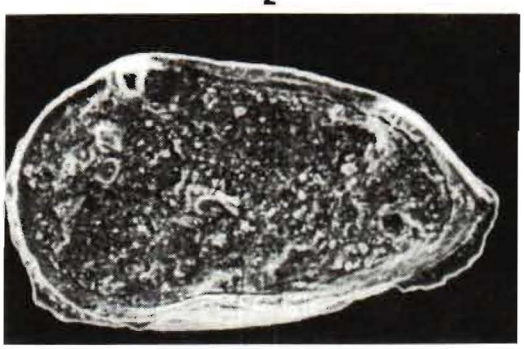
2

1

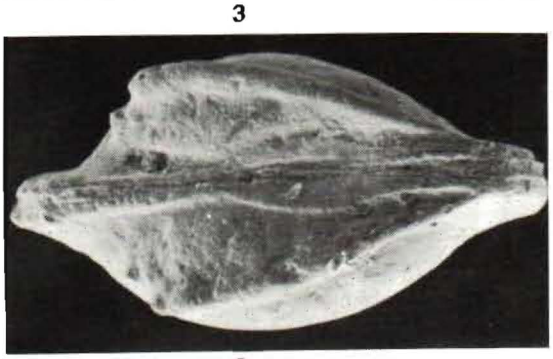
2



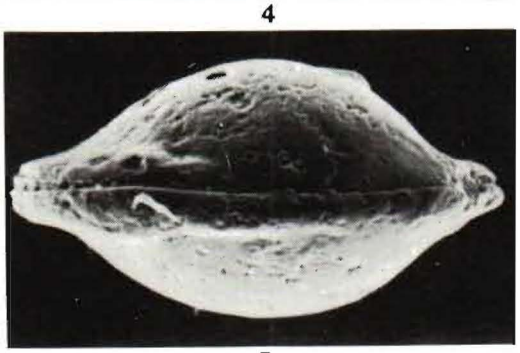
3



4



3



5

Subfamily PTERYGOCYTHEREIDINAE Puri, 1957
Genus PTERYGOCYTHEREIS Blake, 1933
Pterygocythereis claustrata sp. nov.
Plate 2, Fig. 1-5

Derivation of name

Latin, *claustrum*, dam; from fancied appearance of the ventrolateral ridge to a dam.

Diagnosis

A species of the genus *Pterygocythereis* with smooth surface and high ventrolateral ridge, which extends from the posterior third of the carapace to join the anteroventral margin.

Holotype

KSU.G.OS. 201, a male carapace (Pl. 2, Fig. 3, 5).

Paratypes

KSU.G.OS. 202, 203, 230-233.

Material

Fifteen specimens from Wadi al-Atj.

Description

Carapace subrectangular in lateral view. Arrow shaped in dorsal and ventral views. Anterior and posterior ends compressed. Greatest length passes below midpoint; greatest height runs at the anterior cardinal angle. Valves almost equal. Shell surface smooth with well-developed ventrolateral ridge that extends from the

Explanation of plate 2

Fig. 1-5. *Pterygocythereis claustrata* sp. nov.
1,4 Paratype, female right valve, KSU.G.OS. 203.
1 External lateral view, ×80. 4. Internal lateral view, ×80.
2. Paratype, female carapace, KSU.G.OS. 202. Lateral view from left, ×76.

3, 5. Holotype, male carapace, KSU.G.OS. 201.
3. Ventral view, ×74, 5. Dorsal view, ×73.

All specimens from the Maastrichtian Aruma Formation of Wadi al-Atj, Saudi Arabia. Figures 1-3 are stereo-pairs.

posteroventral region of the carapace to join the anteroventral margin. Eye tubercle low with well-marked postocular depression. Internal features not seen. Sexual dimorphism apparent, females being shorter and higher than the males.

Dimensions (mm)

	Length	Height	Width
Holotype, male carapace, KSU.G.OS. 201	0.88	0.51	0.45
Paratype, female carapace, KSU.G.OS. 202	0.86	0.52	0.46
Paratype, female right valve, KSU.G.OS. 203	0.81	0.47	
Paratype, male carapace, KSU.G.OS. 230	0.86	0.51	0.45
Paratype, female carapace, KSU.G.OS. 231	0.85	0.50	0.46
Paratype, male carapace, KSU.G.OS. 232	0.87	0.50	0.45
Paratype, female carapace, KSU.G.OS. 233	0.84	0.48	0.45

Remarks

Pterygocythereis allinensis (Grekoff and Deroo 1956; *see* Swain 1978) is a more elongate species in which the ventrolateral ridge curves anteriorly to form a high anterior marginal rim.

Acknowledgement

I am very grateful to Saleh Othman Al-Saleh for his kindness and help during collecting the samples of this study. I would like to thank Mr. Ibrahim A. Al-Zaid and Ibaas Said of King Saud University for their technical assistance. I am indebted to King Saud University for financial support.

References

Al-Furaih, A.A.F. (1980) *Upper Cretaceous and Lower Tertiary Ostracoda* (Superfamily CYTHERACEA) *from Saudi Arabia*, University Libraries, University of Riyadh (now King Saud University), Riyadh, 211 p.

—— (1984) Maastrichtian ostracoda from the Aruma Formation of Saudi Arabia, *Révue Micropaléont.* **27**: (in press).

Grekoff, N and **Deroo, G.** (1956) Algunos Ostracodos del Cretacico medio del Norte de Espāna, *Estudios geol., Inst. Invest. geol. Lucas Mallada*, pp. 215-235.

Siddiqui, Q.A. (1971) Early tertiary ostracoda of the family Trachyleberididae from West Pakistan, *Bull. Br. Mus. nat. Hist. (Geol.), Suppl.* **9**: 1-98, Pl. 1-42.

Swain, F.M. (1978) Some middle cretaceous ostracoda from northern Spain and their interregional relationship, *Revta esp. Micropaleont.* **10**: 245-265, Pl. 1-3.

(Received 06/09/1983;
in revised form 08/11/1983)

استراكودا من وادى العتك بالمملكة العربية السعودية

على عبدالله الفريح

قسم الجيولوجيا - كلية العلوم - جامعة الملك سعود - الرياض - المملكة العربية السعودية

فى هذا البحث درست ثلاثة أنواع استراكودا جديدة من الجزء الأعلى للعصر الطباشيرى من ظاهر متكون عرمة والذى يحيط بوادى العتك فى المملكة العربية السعودية وهذه الأنواع هى :

أكانثوسيثرى صالح وكلاينوسيثرى دبلي وبتريجوسيثيرس كلستراتا .