

New Species of Ostracoda Genus *Cytherella* Jones, 1849 from the Upper Cretaceous of Hamrin Area North Eastern Iraq

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ABSTRACT

Four new ostracod species belonging to the genus *Cytherella* Jones, 1849 described from the Upper Cretaceous succession of Hamrin area NE Iraq namely: *Cytherella shiranishensis* sp. nov.; ; *C. iraqiensis* sp. nov.: *C. mushoriensis* sp. nov.; and *C. kirkukiensis* sp. nov.

Keywords: Ostracoda; *Cytherella*; Cretaceous; Iraq.

أنواع جديدة من الاوستراكودا للجنس *Cytherella* Jones, 1849 من الطباشيري العلوي في منطقة حميرين شمال شرق العراق

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الملخص

تم وصف أربعة أنواع جديدة من قشريات الاوستراكودا تعود للجنس *Cytherella* Jones, 1849 والتي شملت الأنواع التالية :
Cytherella shiranishensis sp. nov; *C. iraqiensis* sp. nov: *C. mushoriensis* sp. nov.; and *C. kirkukiensis* sp. nov. .

وتم وصفها من الطباشيري العلوي لمناطق شمال العراق.

INTRODUCTION

The present paper is part of study investigated Upper Cretaceous succession (Santonian - Maastrichtian) from Khashab oil well No. 1, Hamrin Area (Fig, 1, 2) NE Iraq (Al-Ubide, 1989) at depth (2100-3600)m, where the study covered the following formations:

- 1- Shiranish Fm. (Upper Campanian –Maastrichtian)
- 2- Mushorah Fm. (Lower Campanian)
- 3- Kometan Fm. upper part of (Upper Santonian).



Fig.1 .Location map

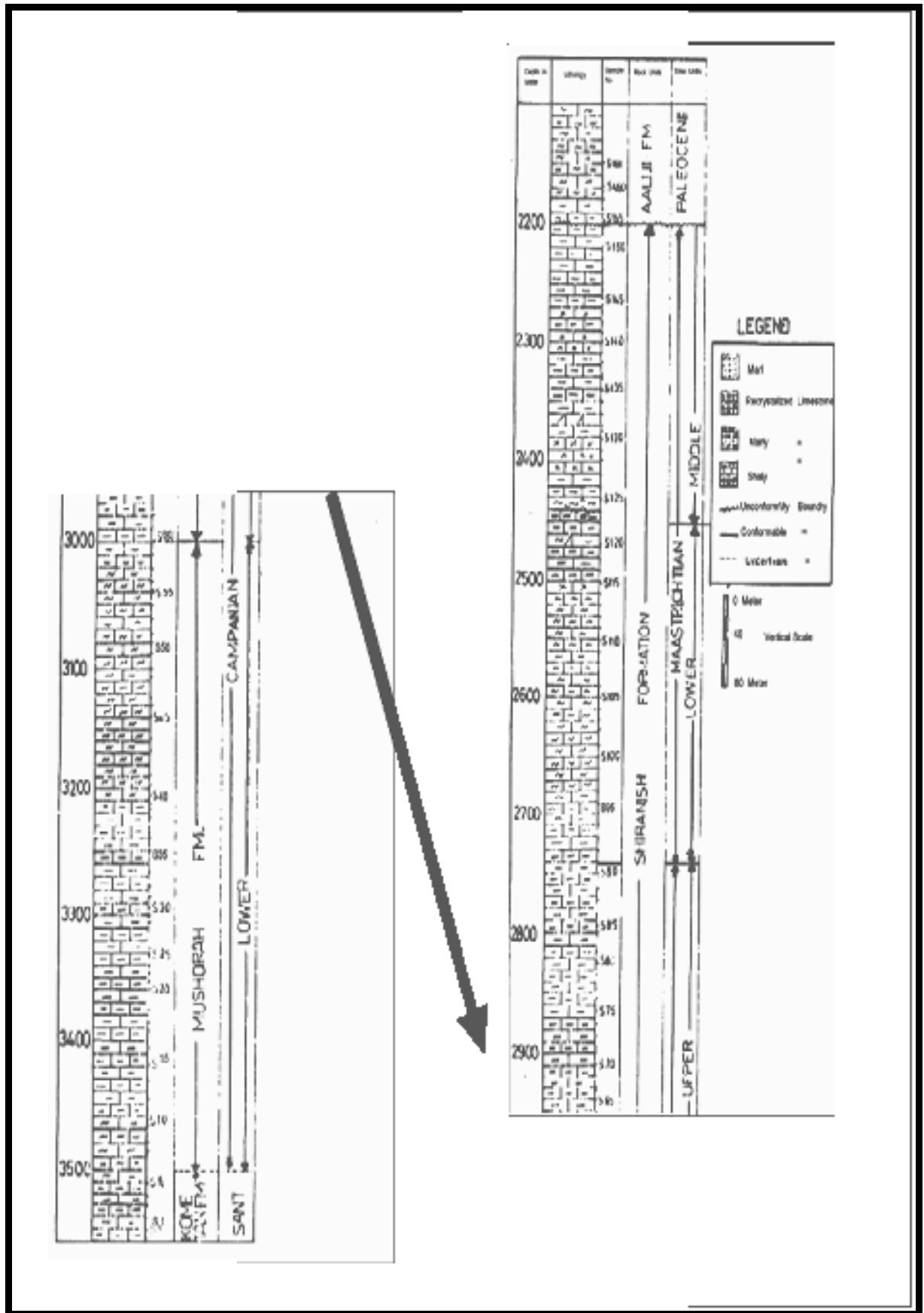


Fig. 2 : Stratigraphic sequences and location of samples, well Khashab No. 1

Repository:

All the figured specimens are deposited in the Mosul University, Geology Dept. Cretaceous collection with the prefix Mo. Cret.

SYSTEMATIC DESCRIPTIONS

Subclass	Ostracoda	Latrielle, 1806
Order	Podocopida	Muller, 1894
Suborder	Platycopa	Sars, 1866
Family	Cytherellidae	Sars, 1866
Genus	Cytherella	Jones, 1849

Type Species: *Cytherina ovata* Roemer 1840

Cytherella shiranishensis sp. nov.

pl. 1, Figs. 1, 2

Derivation of name: From its occurrence in the Shiranish Formation

Holotype: Carapace Mo. 1 Crt. 5

Paratypes: Carapace Mo. 1 Crt. 6

Type Horizon: Shiranish Formation (U. Campanian), Hamrin area

Material: Twenty six carapaces

Diagnosis: A species of the ostracode genus *Cytherella* with narrow posterior end pointed at the middle in the right valve. Dorsal margin strongly convex in the right valve with distinctive overlapping of left valve.

Description: Carapace sub-ovate in lateral view, maximum height at the middle of the carapace, greatest length at the middle of the carapace. Anterior end well rounded, Posterior end pointed at the middle in the right valve. Dorsal margin strongly convex in the right valve, slightly in the left. Right valve larger than the left; overlapping distinctive along all margins. Ventral margin convex in the right

valve nearly straight in the left. In dorsal view carapace sub-ovate with compressed anterior end, thickest part at the last third of the carapace. Lateral surface smooth

Dimensions of figured specimens (mm):

Carapace Mo. Crt. 5 Pl. 1 Fig. 1 0.83 0.50 0.4

Carapace Mo. Crt. 6.1 pl.1 Fig. 2 0.80 0.49 0.4

Remarks: The present species is fairly similar to *Cytherella ovata* Roemer (in Grekoff 1951) from the U. Cretaceous of France, but differs in having narrower posterior end, and strongly convex dorsal margin in the right valve, *Cytherella* aff. *poserodorsodirecta* Andreu, 1991 (in Damotte, 1995) from Upper Cretaceous of Pacific ocean shows similarities to the present species but it differs in having strongly convex dorsal margin and in the degree of overlapping around all margins. *Cytherella* IRC 6 Grosdidier 1973 from the Santonian of Iran differs from Iraqi species in having nearly straight dorsal and ventral margins.

***Cytherella iraqiensis* sp. nov.**

pl. 1, Figs. 3 , 5

Derivation of name: from it is first description in Iraq.

Holotype: Mo. 1 Crt. 7

Paratype: Mo. 1 Crt. 8

Type Horizon: Upper Campanian, Shiranish Formation, Hamrin area.

Material: Seventy five carapaces.

Diagnosis: Carapace Sub-ovate in lateral view, posterior end strongly narrower than the broadly rounded anterior end.

Description: Ovate Carapace in lateral view broadly rounded, anterior end tapering towards strongly narrower posterior end. Dorsal margin broadly convex than the ventral margin. Maximum height at the middle of the dorsal margin, greatest length passes through mid height. Right valve larger than the left, overlapping more prominent along the dorsal and ventral margins. Lateral surface

smooth. In dorsal view carapace compressed anteriorly, rounded posteriorly, maximum width at the posterior end.

Dimensions of figured specimens (mm):	<u>L</u>	<u>H</u>	<u>W</u>
Carapace Mo. 1. Crt. 7, pl. 1, Fig. 3	0.63	0.42	0.33
Carapace Mo. 1. Crt. 8.1, pl. 1, Fig. 4	0.63	0.40	0.33
Carapace Mo. 1. Crt. 8.2, pl. 1, Fig. 5	0.53	0.40	0.28

Remarks: The present species shows similarities to *Cytherella* OUM 1110 Grekoff, 1969 from the Maastrichtian of Algeria, but differs in having distinctive narrower posterior end, while the Algerian species characterized with broad rounded posterior end. Grosdidier(1973) recorded Algerian species from the Santonian – Maastrichtian of Iran.

The Iraqi species shows affinities to *Cytherella* Sp. 1 Babinot *et al.*, 1988 from the Santonian- Campanian of Senegal but differs in having broadly rounded anterior end with more conspicuous overlapping.

The present species shows similarities to *Cytherella shiranishensis* sp. nov. from the present study but it differs in having broadly rounded anterior and posterior ends.

***Cytherella mushoraiensis* sp. nov.**

pl. 1, Figs. 6 , 7

Derivation of name: From it is occurrence in the Mushorah Formation, Hamrin, NE Iraq.

Holotype: Mo. 1 Crt. 9

Paratypes: Mo. 1 Crt. 10

Type Horizon: Lower Campanian, Mushorah Formation, Hamrin area.

Material: Nine carapaces.

Diagnosis: A species of the genus *cytherella* characterized with narrower, obliquely rounded posterior end, shallow sulcus present at the maximum height, concave ventral margin in the middle.

Description: Carapace elongate sub-ovate in lateral view, carapace tapering toward posterior end. Anterior margin broadly rounded posterior narrowly rounded. Dorsal margin convex at maximum height, gently sloping toward the posterior end. Ventral margin strongly concave at the middle maximum length passes through mid point. Lateral surface smooth with shallow sulcus at maximum height extending towards the posterior end. Right valve larger than left overreaching along the dorsal margin. In dorsal view carapace with compressed anteriorly and posteriorly ends .maximum thickness at the middle of the carapace.

Dimensions of figured specimens (mm):	<u>L</u>	<u>H</u>	<u>W</u>
Carapace Mo. 1. Crt. 9, pl. 1, Fig. 6	0.63	0.36	0.26
Carapace Mo. 1. Crt.10, pl.1, Fig. 7	0.72	0.50	0.40

Remarks: The present species shows similarities to *Cytherella* sp. *Aff. C. unabashi* Alexander, 1932 recorded by Van Den Bold, (1964) from the U. Turonian of Egypt, but the latter differs in having convex dorsal margin in the anterior part with narrow anterior end.

Cytherella Sp.2 Colin *et al.*, 1982 from the Turonian of Spain differs in having narrower anterior end in addition to nearly straight ventral margin.

***Cytherella kirkukiensis* sp. nov.**

pl. 1, Figs. 8 , 9

Derivation of name: From it is occurrence in the Kirkuk area, North Iraq,

Holotype: Carapace Mo. 1 Crt. 11

Paratypes: Carapace Mo. 1 Crt. 12

Type Horizon: Lower Campanian, Mushorah Formation, Hamrin area NE
Iraq.

Material: Nine carapaces.

Diagnosis: Carapace elongate, ovate in lateral view with well rounded anterior and posterior ends.

Description: Ovate, elongate Carapace in lateral view, regularly and well rounded anterior and posterior ends. Maximum height just behind the middle of the Carapace, greatest length at the middle of the maximum height, Dorsal margin slightly convex ventral margin nearly straight, Right valve large than the left, overlapping seen along the dorsal and ventral margins.

Dimensions of figured specimens:	<u>L</u>	<u>H</u>	<u>W</u>
Carapace Mo. 1. Crt. 11, pl.1, fig. 8	0.75	0.40	0.28
Carapace Mo. 1. Crt. 12, pl. 1, fig. 9	0.64	0.38	0.22

Remarks: The present species shows similarities to the *Cytherella barbatharensis* Neale and Singh, 1985 from the Paleocene of India, but differs in having different shape of posterior and anterior ends.

Cytherella IRC 22 Grosdidier, 1973 from the Santonian deposits in Iran differs in having wider anterior end and narrower posterior end.

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Plate-1

Figs. (1, 2) *Cytherella shiranishensis* sp. Nov

- (1) Lateral view of left valve (Mo.1 Cr.5) Shiranish Fm.(2918-2919)m.X.63
(2) Dorsal view of the carapace (Mo.1 Cr.6) Shiranish Fm. (2833-2834)
m.X.70.

Figs. (3-5) *Cytherella iraqiensis* sp.nov.

- (3) Lateral view of left valve (Mo.1 Cr.7) Shiranish Fm. (2918-2919) m.X.75.
(4) Lateral view of right valve (Mo.1 Cr.8.1) Shiranish Fm. (2818-2819) m. X.70.
(5) Dorsal view of the carapace (Mo.1 Cr.8.2) Shiranish Fm. (2960-2961) m.X.83

Figs. (6, 7) *Cytherella mushoraiensis* sp.nov.

- (6) Lateral view of left valve (Mo.1 Cr.9) Mushorah Fm.(3418-3419)m. X.70.
(7) Dorsal view of the carapace (Mo.1 Cr.10) Shiranish Fm. (2860- 2861)
m.x.65.

Figs. (8, 9) *Cytherella kirkukiensis* sp. nov.

- (8) Lateral view of left valve (Mo.1 Cr.11) Mushorah Fm.(3403-3404)m.X.69.
(9) Dorsal view of the carapace (Mo.1 Cr.12) Shiranish Fm.(2874-2875)m.X.75

PLATE -1

