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Veeniacythereis Ibnalhaithami and Veenia (Veenia) ibnalhazmi

Two New Ostracode Species from the Upper Cretaceous of Iraq

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Veeniacythereis بن الهيثمي و *Veenia* بن الحازمي نوعان جديدان من طائفة الاستراكود ضمن طبقات الكريتاسي العلوي بالعراق

جنان محمد طه البشير

تم في هذه الدراسة التعرف على نوع جديد من طائفة الاستراكود أطلق عليه *Veeniacythereis* بن الهيثمي وأعتبر من الأنواع الدالة على الكريتاسي العلوي (التوروني العلوي والسنتوني) بالعراق.

كما تم توثيق مستحاثة أخرى من نفس الطائفة من جنس *Veenia* بن الحازمي (Butler and Jones) ضمن التوروني العلوي والكونياكيان. وقد تضمن هذا البحث وصف تفصيلي لهاتين المستحاثتين، كما تمت مناقشة مجالهما الاستراتيغرافي وتصنيفهما وأماكن تواجدهما.

Abstract: *Veeniacythereis ibnalhaithami sp. nov., a new ostracode species of Veeniacythereis Gruendel, 1968, was regarded as characteristic species for the Upper Cretaceous rocks (Upper Turonian –Santonian) in Iraq.*

Veenia (Veenia) ibnalhazmi a new ostracode species of Veenia (Veenia) Butler and Jones, 1957; was recorded from Upper Turonian – Coniacian age of Iraq.

The two species are described in detail and their stratigraphic range, taxonomy and occurrence are discussed.

INTRODUCTION

Subsurface samples were obtained from five drilling wells located in the Middle and South of Iraq as follows: East Baghdad Well-3, South Rumaila Well-104, Safawi Well-1, Ghalaisan Well-1, and Kifl Well-2 (Fig. 1).

These samples were collected from the Upper Cretaceous strata of the Khasib Shaley and detrital limestones, the Tanuma Fissile Shales and the Sadi marly limestones. The Khasib Formation is underlain unconformably by the Mishrif or Kifl Formations (Fig. 2).

Repository

The holotype specimens are deposited in the Department of Palaeontoloty, British Museum (Natural History); and the paratype specimens are deposited with the author's collections, and an internal catalogue numbering system has been used.

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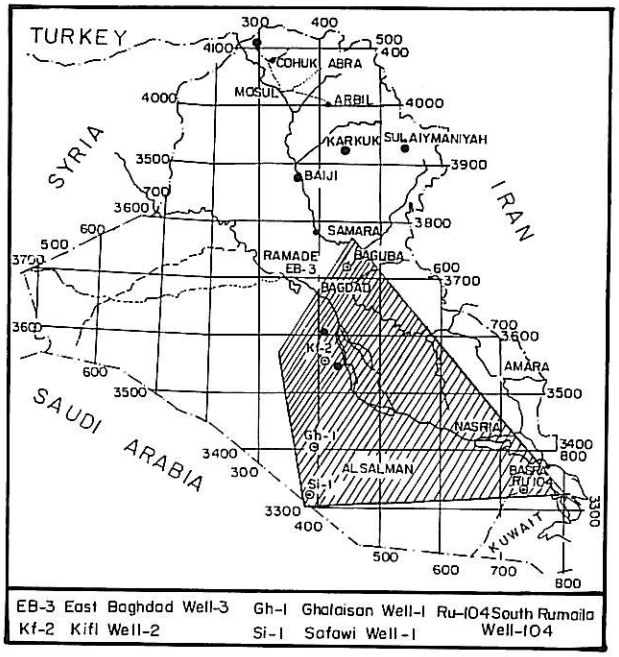


Fig. 1. Location map.

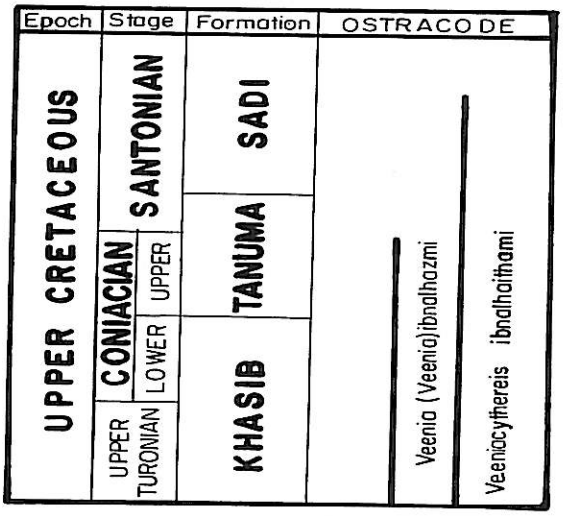


Fig. 2. Stratigraphic range chart of the two new ostracode species.

DESCRIPTION

Systematic description of the two new ostracode species is as follows:

A . Veeniacythereis ibnalhaithami

Systematic Description

Subclass	OSTRACODA	Latreille, 1806
Order	PODOCOPIDA	Muller, 1894
Suborder	PODOCOPINA	Sars, 1866
Superfamily	CYTHERACEA	Baird, 1850
Family	TRACHYLEBERIDIDAE	Sylvester-Bradley, 1948
Subfamily	TRACHYLEBERIDIDAE	Sylvester-Bradley, 1948

Genus *Veeniacythereis* Gruendel, 1973.
Veeniacythereis ibnalhaithami sp. nov. pl.1, figs,1-8.

Name: After Ali Al-Hasan Ibn Al-Haitham who was one of the most important mathematicians and physicists of the Arabs, in the tenth-eleventh century.

Diagnosis: A species of *Veeniacythereis* characterized by three longitudinal ridges, which show a tendency to divide into nodes. Surface of carapace varies from mainly smooth to partly reticulate; a prominent rounded tubercle lies in front of the subcentral tubercle at the antero-ventral corner, and consists of some small tubercles.

Holotype: Femal carapace, BM(NH)No.OS 12965, pl. 1 fig.1.

Paratype: J.T. (433-440), and J.T. (442-450).

Material: Total number of specimens found is 50. In South Rumaila Well-104, 22 specimens were found. In Ghalaisan Well-1, 7 specimens were found. In Safawi Well-1, 1 specimen only. In Kifl Well-2, 12 specimens were found and in East Baghdad Well-3, 8 specimens have been found.

Type Locality: South Rumaila Well-104.

Type Horizon: Khasib Formation, Upper Turonian-Lower Coniacian, depth of 2416m.

Stratigraphic range: UpperTuronian – Santonian.

Description: Carapace small, subquadrate to subrectangular in lateral view. Dorsal margin and ventral margins converging posteriorly into central pointed posterior end; dorsal margin straight; ventral margin weakly convex to slightly concave into selvage area. Anterior margin broadly and evenly rounded; posterior margin subtriangular. A well developed postero-cardinal angle in the left valve. Left valve with a pronounced hinge-ear on the antero-dorsal angle; left valve larger than the right. Eye tubercle rounded, large and prominent. Subcentral tubercle prominent, rounded and smooth; another prominent and smooth rounded tubercle lies at the antero-ventral corner of the carapace and clearly consists of some small

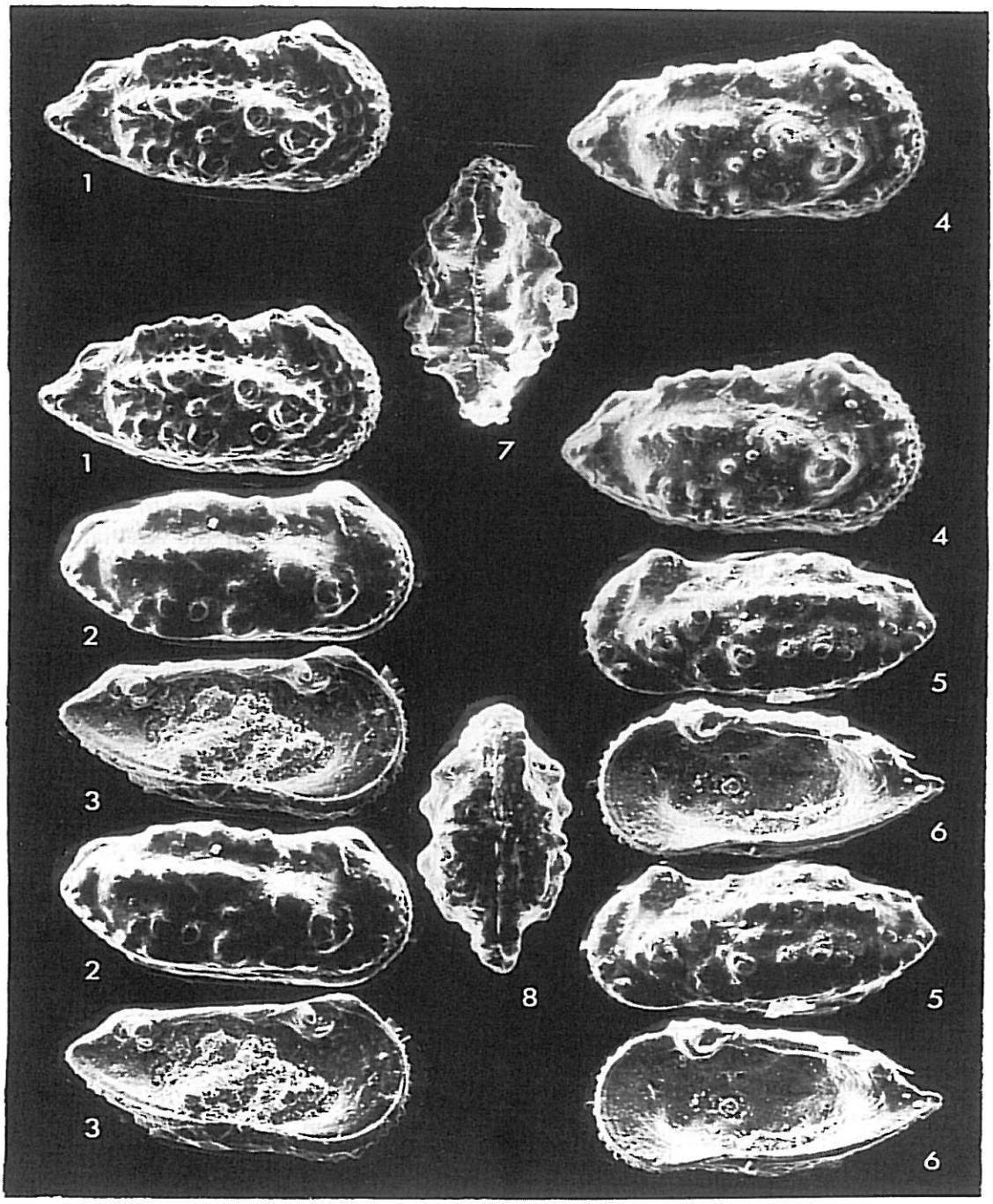


Plate - I

Veeniacythereis iIbnlhaithami sp. nov.

Plate I - 1 Female carapace, right valve, external, lateral view, (holotype OS 12965); stereoscopic paired photographs; South Rumaila Well-104, 2416m, Khasib Formation; X79.

Plate I - 2 Male carapace. right valve, external, lateral view, (paratype J.T. 434); stereoscopic paired photographs; Kifl well-2, 4365 ft, Tanuma Formation X75.

Plate I - 3 Female left valve, internal view, (paratype J.T. 443); South Rumaila Well-104, 2334m, Tanuma Formation; X78.

Plate I - 4 Female carapace, right valve, external, lateral view, (paratype J.T. 440); stereoscopic paired photographs; South Rumaila Well-104, 2352m, Tanuma Formation: X80.

Plate I - 5 Male carapace, left valve, external, lateral view, (paratype J.T. 433); stereoscopic paired photographs: Ghalaisan Well-1, 3725 ft, Tanuma Formation: X71.

Plate I - 6 Female right valve, internal, laterall view. (paratype J.T. 437); South Rumaila Well-104, 2416m, 2342m. Khasib Formation, X83.

Plate I - 7 Female carapace, external, external, view, (paratype J.T. 439); South Rumaila Well-104, 2380m, Khasib Formation; X73.

Plate I - 8 Female carapace, external, ventral view, (paratype J.T. 445); East Baghdad Well-3, 2290m, Tanuma Formation; X82.

tubercles. There are three longitudinal ridges which show a tendency to break into nodes. The dorsal ridge breaks into 3 or 4 nodes lying along the dorsal margin, these nodes usually coalesce giving the ridge a thickened and slightly sinuous appearance in lateral view. The median ridge is distinct and tuberculate, consisting, of 4 almost equal sized nodes which coalesce to form the ridge; the nodes are variably developed between specimens. The ventral ridge is broken into a series of 5-6 nodes parallel to the ventral margin. The surface of the carapace is variable from mainly smooth in most specimens to partly reticulate. The anterior marginal rim is present and has some 3-5 small pore cones or pustules; the anterior margin has some 10-14 small spines or rounded dentriculations; at the posterior margin there ar 4-5 pustules or rounded denticles and one pore cone or pustule lying at the dorsal part of the posterior margin. There are a few additional secondary nodes or very small pore cones between the major ones.

The Hinge is amphidont/heterodont, the anterior terminal hinge element of the right valve consisting of an anterior tooth with higher conical, smooth dorsal part and a lower ventral part which extends below the post-adjacent socket, giving a curved tooth in lateral view; the antero-median post-adjacent socket is deep, smooth and sub rounded, opened posteriorly and connected to a smooth postero-median groove. Elements of the left valve hinge complement those of the right. Muscle scars are not seen.

Dimensions: (in mm)

		L.	H.	L/H.
OS 12965	Holotype, Female, carapace	0.630	0.360	1.750
J.T. 442	Paratype, Female, carapace	0.610	1.350	1.742
J.T. 445	Paratype, Female, carapace	0.560	1.330	1.696
J.T. 439	Paratype, Female, carapace	0.630	0.380	1.657
J.T. 440	Paratype, Female, carapace	0.652	0.400	1.630
J.T. 443	Paratype, Female, LV	0.640	0.380	1.684
J.T. 437	Paratype, Female, RV	0.610	0.350	1.742
J.T. 433	Paratype, Male, carapace	0.720	0.350	2.057
J.T. 434	Paratype, Male, carapace	0.680	0.350	1.942

Discussion:

The specimens is assigned to *Veeniacythereis* Gruendel (1973) on the basis of the external appearance, the presence of a distinct hinge ear in the left valve, and well developed three longitudinal ridges; internally it has the same type of hinge structure.

Cythereis cf. OUM 1658-2 Grekoff (1968) illustrated by Grosdidier (1973, pl.12, Figs.89 a-d) from the Laffan Formation of the Coniacian ? of the coastal Fars Province of Iran, was considered by Grosdidier to be characteristic of that Formation and was reported from other areas. It seems to be similar to *Veeniacythereis ibnalhaithami* sp. nov. and Grosdidier,s figures indicate a somewhat similar variation to that seen in some specimens of *Veeniacythereis ibnalhaithami* sp. nov., *i.e.* the median ridge may be more or less ndose; figs. 89 a&d have an almost straight and non-nodose ridge, so if these forms are conspecific they extend the range of variation seen in the species. Sayyab (1956, unpublished Ph.D. dissertation) found specimens almost identical to this species in the Upper Cretaceous of the Arabian Gulf coast; which he named *Cythereis dukhanesis* sp.nov., describing its common occurrence in many wells along the Arabian Gulf. He placed his species in *Cythereis* stating that "the presence of a median tubercle, ventral and dorsal flanges and median ridge associated this species with *Cythereis*" however, he also remarks that "some doubt remains because of the poor preservation of the hinge". The ornamentation of the ventral surface in the ventral view is more clearly developed in Sayyab's species than in *Veeniacythereis ibnalhaithami* sp. nov. A more important difference was in the hinge which Sayyab described as having faintly crenulate anterior tooth and median groove; it is not clear how much importance should be attended to this observation. The figured specimens of *Cythereis* OUM 1658-2 illustrated by Grekoff (1968) from passage beds between the Coniacian and Santonian of Algeria, in pl.2, figs.24 a-d are not clearly illustrated, so giving a doubt as to whether they are identical to *Veeniacythereis ibnalhaithami* sp. nov. or not.

Occurrence:

This species known from the Upper Turonian-Santonian of South Ghalaisan Well-1, Safawi Well-1, Kifl Well-2, east Baghdad Well-3, and south Rumaila Well-104; in the latter well, it was found as contaminants in the highest lower Turonian. After Sayyab it is also recorded from the Upper Cretaceous strata of the western coast of the Arabian Gulf.

B. Veeniacythereis Ibnalhaithami

Systematic Description

Subclass	OSTRACODA	Latreille, 1806
Order	PODOCOPIDA	Muller, 1894
Suborder	PODOCOPIDA	Sars, 1866
Superfamily	CYTHERACEA	Baird, 1850
Family	TRACHYLEBERIDIDAE	Sylvester-Bradley, 1948
Subfamily	TRACHYLEBERIDIDAE	Sylvester-Bradley, 1948

Genus *Veenia* Butler and Jones, 1957
Subgenus *Veenia (Veenia)* Butler
And Jones, 1957
Veenia (Veenia) ibnaihazmi sp. nov.
pl. 2, figs. 1-8.

Name: After Abu Muhammad Ali Ibn Hazm, a versatile Spanish-Arab scholar, in the tenth and eleventh centuries.

Diagnosis: A species of *Veenia (Veenia)* with three longitudinal ridges (dorsal, median and ventral ridges), and smooth surface amongst the longitudinal ridges and rims with several pore cones. The median ridge joins the ventral ridge anteriorly; the area between the median and ventral ridge is raised. The anterior and antrto-ventral areas of the carapace are laterally depressed. Eye tubercle is pronounced. The posterior margin is triangular and elongate.

Holotype: Female carapace, BM(NH) OS 12963, pl. 2 fig. 1.

Paratype: J.T.9414 – 410).

Material: Total specimens are 7. In south Rumaila Well-104 section, 5 specimens have been reported.

Type Locality: South Rumaila Well-104 section.

Type Horizon: Tanuma Formation, Upper Coniacian, depth of 2342m.

Stratigraphic range: Upper Turonian- Coniacian.

Description: Medium sized, subtriangular carapace, with pronounced sexual dimorphism, males being more elongate than the females. Anterior margin evenly and broadly rounded, posterior margin elongate and triangular; dorsal and ventral margins sub-parallel in males, strongly converging towards posterior in the females; ventral margin concave in males, almost straight in females. A distinct eye tubercle is present; hinge ear only present in left valve, more prominent in females.

There are three distinct longitudinal ridges; the dorsal ridge is curved, the median ridge is straight, longer than the dorsal ridge; the ventral ridge is curved, seeming to join the median ridge at the anterior end.

There is no subcentral tubercle in the female, a slight subcentral tubercle is present in the male. An anterior marginal rim is present and bears 4-7 small pore cones. There are some 12 denticles along the anterior margin and some 4-6 denticles along the posterior margin.

The surface between these ridges and rims is smooth. Several pore cones can be observed. On the posterior area three prominent small pore cones are present; a small distinct node or pore cone lies in the median area of the valve, 2 prominent small spines lie near each other at the posterior end of the ventral ridge; dorsally there are six small pore cones that lie along the dorsal ridge and two small distinct pore cones are present at the anterior end. Internal features could not be observed.

Dimensions: (in mm)

		L.	H.	L/H.
OS 12963	Female (Holotype)	0.540	0.320	1.6875
J.T. 414	Male (paratype)	0.630	0.305	2.065
J.T. 415	Male =	0.640	0.325	1.969
J.T. 416,417	Male =	0.630	0.305	2.065
J.T. 418	Male =	0.635	0.330	1.924
J.T. 419	Female =	0.540	0.320	1.6875

Discussion: This species is tentatively placed in *Veenia (Veenia)* Butler and Jones (1957) because of its general external features, however no internal details are known.

ACKNOWLDGEMENTS

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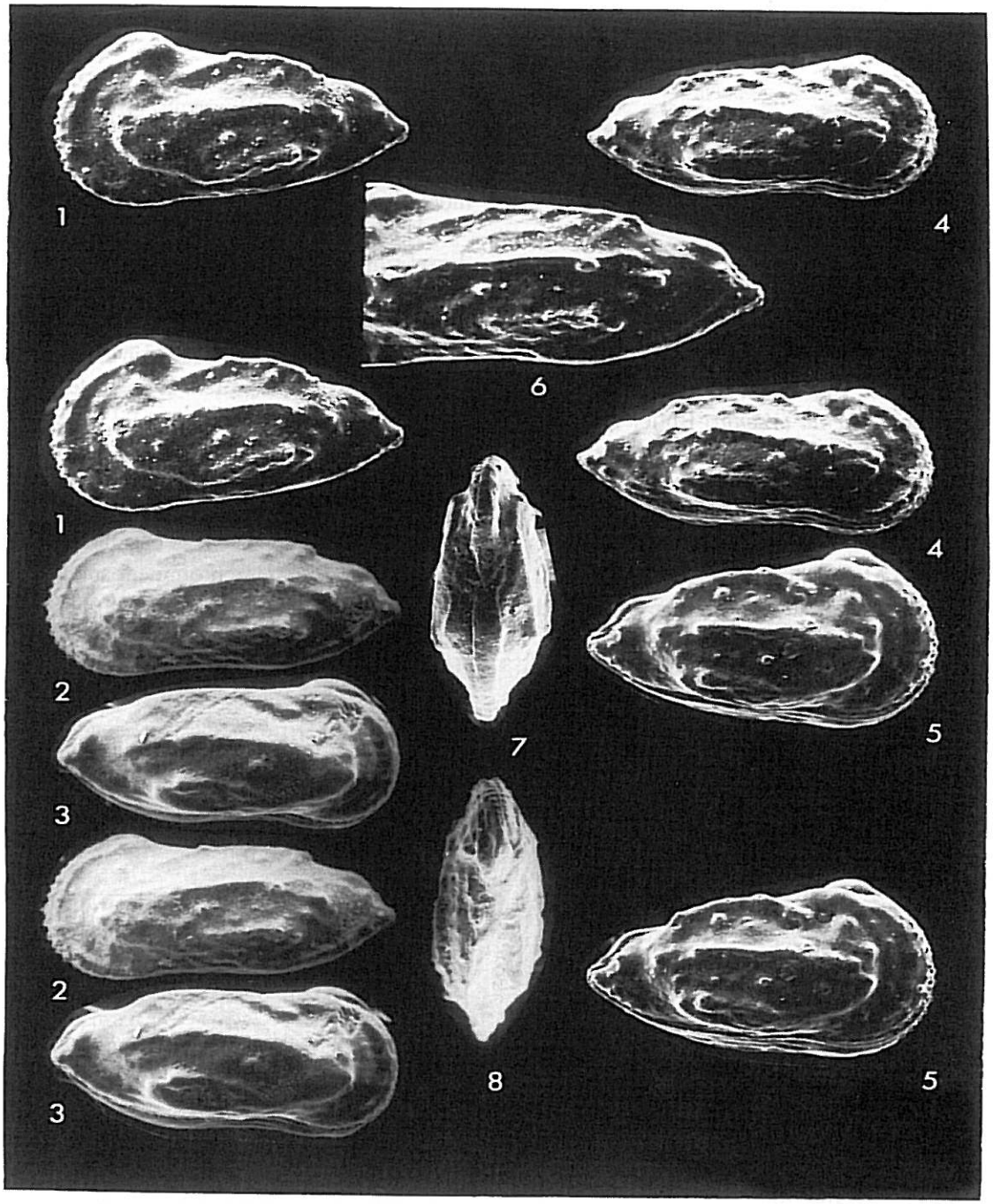


Plate - II

Veenia (*Veenia*) *ibnrhamzi* sp. nov.
All speciments from South Rumaila Well-104.

Plate II - 1 Female carapace, left valve, external, lateral view, (holotype OS 12963); stereoscopic paired photographs; 2342 m; Tanuma Formation; X94.

Plate II - 2 Male carapace, left valve, external, lateral, view, (paratype J.T. 416); stereoscopic paired photographs; 2342m; Tanuma Formation; X82

Plate II - 3 Male carapace, right valve, external, lateral view, (paratype J.T. 417); stereoscopic paired photographs; 2404 m. Khasib Formation; X79.

Plate II - 4 Male carapace, right valve, external, lateral view, ((paratype J.T. 415); stereoscopic paired photographs; 2340 m; Tanuma Formation; X79.

Plate II - 5 Female carapace, right valve, external lateral view, (paratype J.T. 419); stereoscopic paired photographs; 2374m, Tanuma Formation; X94.

Plate II - 6 Male carapace, left valve, external, postero-lateral view. (paratype J.T. 416); 2342m; Tanuma Formation; X91.

Plate II - 7 Male carapace, external, ventral view, (paratype J.T. 414); 2422m, Khasib Formation; X71.

Plate II - 8 Male carapace, external, dorsal view, (paratype J.T. 418); 2344m, Tanuma Formation; X70.

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