DESCRIPTION OF TWO NEW SPECIES OF THE GENUS DICTYOPTYCHUS FOUND IN TURKEY

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ABSTRACT. — The samples, collected from Upper Cretaceous beds of Hatay and Adıyaman, We studied and two new species of Dictyoptychus are established. In this paper, descriptions of these new species (*D. orontica* n. sp., and *D. euphratica* n. sp.) have been given.

INTRODUCTION

The studied material are collected from Upper Cretaceous beds of Yayladağı-Hatay (Southern Turkey) by Yusuf Tamer; and from Rudistid limestone between Kastel Formation and Terbüzek conglomerate of Kahta-Adıyaman (Southeast Turkey) by Engin Meriç.

After the examination of these collections, we established first occurence of die genus Dictyoptychus in Turkey. Our species differ from known species of Dictyoptychus. In this publication, descriptions of these two new species of Dictyoptychus, are given.

Associated Rudistid fauna and abundant microfossils show that two new species are Maestrichtian in age.

SYSTEMATIC STUDY

Order : **RUDISTIDA** LAMARCK 1819

Family : CAPRINIDAE FISCHER 1887

Genus : Dictyoptychus DOUVILLE 1905

Pictyoptychus orontica n. sp.
(Plate I, fig. 1-3; Plate IV, fig. 1)

Derivatio nominis : After the latin name of Asi River, Orontes.

Holotype : Is deposited at the Museum of Mineral Research and Exploration Institue of Turkey with no. 1039.

Material : One sample, with well preserved two valves.

Diagnosis: Upper valve conical in shape, apex eccentric. Lower valve conical; siphonal region with thin longitudinal ribs and tight festonne growth lamellae. Cross-section triangular. Internal layer contains few, but big polygonal canals, which make a regular row on the outer margin. Cardinal apparatus perpendicular to the anterior margin.B, B' teeth situate between the long arms of the X shaped N tooth. ,

Description: Upper and Lower valve are two cohes with opposite bases. Summits of both valves are situated on a line which cuts the commissure with an angle 60; therefore valves are in shape of cones with their summits slid to reverse sides.

Upper valve is depressed conical and cap-like, 1.5 cm height; apex is inclined strongly towards the antero-dorsal margin. Well preserved places of the valve show fine and tight growth lamellae.-At the eroded parts of the thin external layer, dense and radial canals of the internal layer can be observed (Plate I, fig. 1, 2). As.we have one specimen, we could not obtain a cross-section of Upper valve.

Lower valve is conical in shape with eccentric summit; the height is 5.5 cm. Surface is ornamented with dense and fine growth lamellae. Lamellae of the siphonal region are more marked and transversed by fine costules. At the intersection points, the growth lamellae extend upwardly and therefore they show an «festonne» appearance (Plate IV, fig. 1). This position resembles to the ornamentation of Lower valve of the species *striatus*, but our new species has numerous growth lamellae. Although siphonal region is well marked by this ornamentation, there is not a structure which marks siphonal bands.

Cross-section of the valve is a triangle with rounded corners (Plate I, fig. 3). Maximum thickness of the brown colored external layer is 3.5 cm. Below this layer at the periphery, except of siphonal region, canals of the canal layer (few in number and less complex than the other species) can be seen. These thin walled canals, somewhat rectangular in form, are sitauted along the anterior margin. From «O» accessory cavity, they became much smaller and continue to the ventral margin. Particularly, at the external side of the cardinal teeth, there are two canal groups with four and two canals. At the anterior, inner side of the canals and parallel to it, a band formed by smafly, elongate canals and dense texture, can be seen. There is no canals at the siphonal region.

There is not any trace of ligamental ridge.

Teeth are situated, at equal length to anterior and posterior margin, and on a line normal to the anterior margin. N tooth of the lower valve is well developed, and is in the form of X with two arms extend to anterior and the two other extend to posterior. Between two anterior arms, there is square anterior tooth (B'). The posterior (B) tooth is thin and elongated and is situated between two posterior arms of the N tooth. We cannot differentiate myophore apophyses. The test detritus seen at the end of canals of posterior margin may be mp.

Comparison and remarks: This new species resembles to *persicus* and *paronai*, but differs from it by low conical shape (Kühn, 1929, 1937; Tavani, 1949).

Ornamentation of siphonal region of lower valve resembles mostly to *striattts*. Although new species resembles to *striatus* with its few and big canals on the cross-section of lower valve, accessory cavity (O) extending to the margin, and triangular cross-section; but it is distinguished from *striatus* by following features: anterior and posterior margin of the *striattts* are equal length (at the new species posterior and ventral margin equal), cardinal apparatus somewhat dorso-ventral alignment, regular conical shape of lower valve (Douville, 1910).

It resembles to species *Itesi* with the perpendicular position to anterior margin of the teeth; but l*eesi* differs from our species by the disposition of polygonal canals, thickness of the test, upwardly position of the growth lamellae at the siphonal region and a regular conical shape of lower valve (Kühn, 1929).

Association: The inner part of the lower valve filled with grey sandstone. In thin section of this matrix, there are abundant microfossils:

Orbitoides media (d'Arch.)
Siderolites calcitrapoides Lamarck
Omphalocyclus macroporus Lamarck

At the continuation of this bed, near the village Yaylaçeşmesi, we found *Vautrinia syriaca* (Vautrin).

Type locality: Yeditepe, Yaylaçeşmesi, Hatay.

Stratigraphic level: Maestrichtian.

Dictyoptychus euphratica n. sp.

(Plate II; Plate III; Plate IV, fig. 2,3)

Derivatio nominis: After the old name of the Fırat River.

Holotype: is deposited at the Museum of the Mineral Research and Exploration Institute of Turkey with no. 1042.

Material: One specimen with two valves.

Diagnosis: Upper valve capuloid in shape, eccentric beak in the form of a hook, both sides of the hook deep grooves extend towards siphonal regions, lower valve regular cone, disposition of polygonal canals different compared other species, cardinal apparatus near to anterior margin.

Description: External features: The general appearance of the specimen is similar to a top. Height of the specimen, with two valves, is 11 cm. Dorso-ventral width, at the commissure, are equal to the height: Upper valve is depressed cap-like in shape. Its height, at the beak, is 2 cm. From this point the valve descends regularly to the ventral margin. Summit of the valve approaches 1.5 cm to the antero-dorsal margin.'Summit is in the form of a hook and inclined towards the margin (Plate III, fig. 2). At both sides of the beak, there are deep grooves extending towards siphonal region, and therefore the beak become more distinguishable. The grooves ends nearly 2.5 cm to the siphonal region. The place, between this point and the margin, is a shallow and wide depression (Plate III, fig. 1). This position gives an undulating appearance to the margin of the shell. Surface of the shell is covered with very fine and concentric growth lines. At the margin, there is another shallow depression, behind the posterior groove of the beak's depression, and this corresponds, may be, to S siphonal band.

Lower valve is regular, short and uncurved conical in shape. Its height is 9 cm and width, at commissure, is 10-11 cm. Surface is totally smooth and in some places shows growth lines. At siphonal region, there is not any distinct characteristic marking siphonal bands. The two shallow depressions of Lower valve, corresponding to Upper valve's two shallow depressions, may be mark siphonal bands E and S.

Internal features: At the eroded part of Upper valve, narrow canals can be seen (Plate III, fig. 1). External layer is very thin. Cross-section of lower valve, is rounded oval, at siphonal region (Plate IV, fig. 2,3). Thickness of the external layer is 2.5-4 mm. Internal layer, is thick at the dorsal side and very thin at the ventral side. Canals of this layer are very thinned wall and some places are broken or not preserved. Therefore these canals, at cross-section passing near commissure, cannot be seen. Internal layer composed of thin walled polygonal canals, and these canals have very

different greatness and form. These canals make rows parallel to outer periphery. External row is composed great and quadrangular or hexangular canals. Inntr part of this row, there is another row composed of subquadrangular and big canals. Between these two rows, smaller canals make an interrupted row. At the inner side of the second row, especially at the anterior side, very small canals can be seen on a line parallel to outer periphery. At cardinal region, one of the three big canals, seen at the external side of the teeth, constitutes «O» accessory cavity. At the cross-section passing below this section, cansl layer of the siphonal region is very thin and only one row of elongated oval canals can be seen. Body cavity is somewhat elongated in direction of the beak. There is no trace of L. Cardinal apparatus is near to the, anterior margin. N tooth of the lower valve is irregular and X shape. Anterior tooth situates between anterior arms of N tooth. Posterior tooth cannot be seen distinctly. Myophore apophyses are not preserved.

Comparison and remarks: New species is easily distinguishable, by general form of the upper valve, from the other species of Dictyoptychus.

Canal rows of lower valve are similar to *morgani,* but their disposition are different (Douville, 1904, 1904a).

The species now described, in external appearance and «O» cavity not extending to the periphery, resembles *leesi,* but it goes away by the absence of siphonal pillars.

Association: In the pinkish grey limestone matrix filled shell cavity, we found

Omphalocyclus macroporus Lamarck
Orbitoides media (d'Arch.)
Siderolites calcitrapoides Lamarck
Loftusia sp.
Miliolidae

At the same fossiliferous bed, we found

Pironaea praeslavonica Mil., Sladic, Grubic
Vautrinia syriaca (Vautrin)

Type locality: North of Alidam Köyü, Narince, Kahta-Adıyaman.

Stratigraphic level: Maestrichtian.

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PLATES

PLATE - I

Dictyoptychus orontica n. sp.

Fig. 1 - Lower and Upper valve, external view, X 1

Fig. 2 - Upper valve, from above, X 1

Fig. 3 - Lower valve, cross-section, X 1

N - Tooth of lower valve

O - Accessory cavity

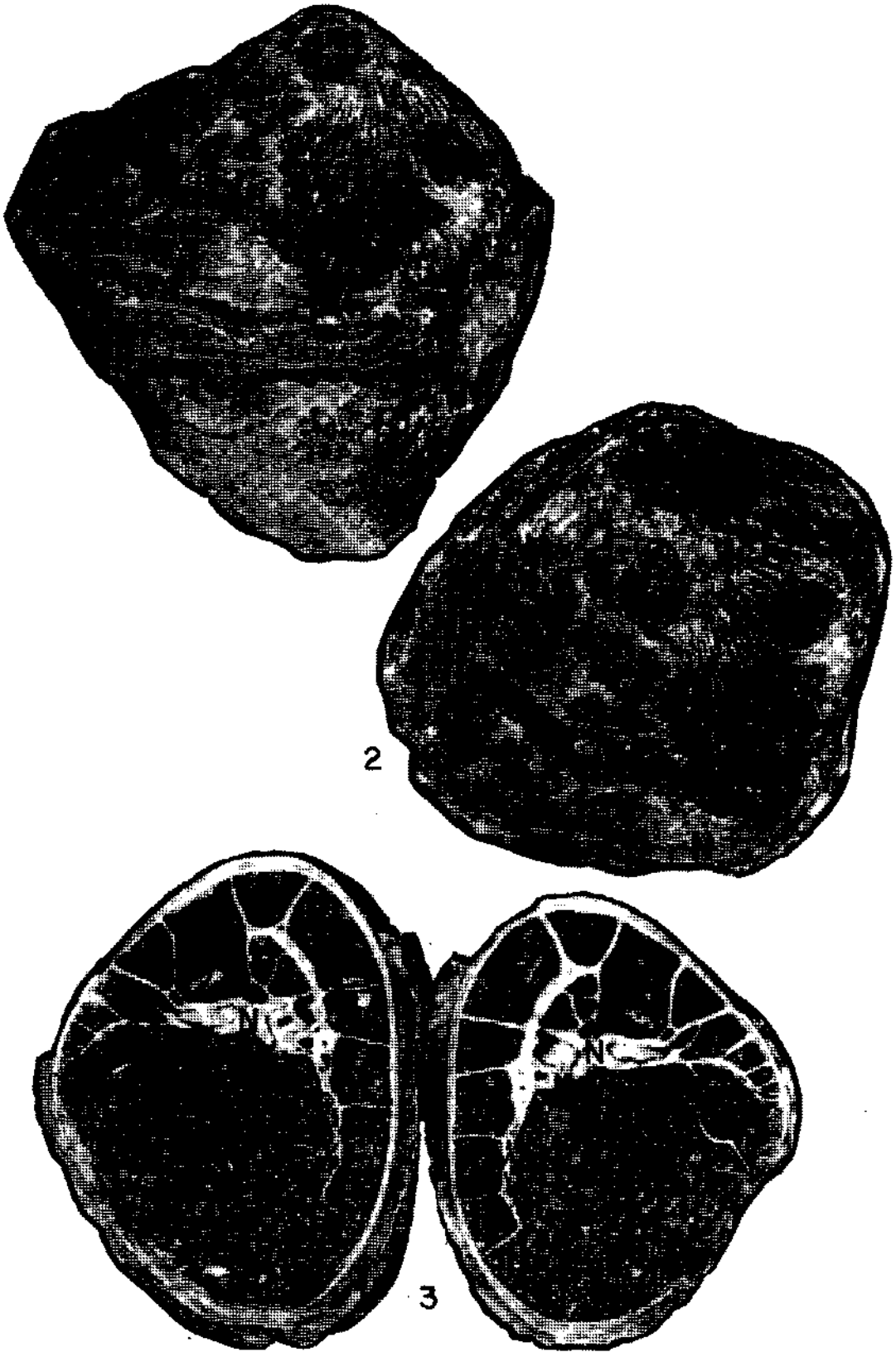
2
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PLATE - II

Dictyoptychus euphratica n. sp.

Fig. 1 - View of the cardinal region of both valves, X 1

Fig. 2 - View of the siphonal region of both valves, X 1

1

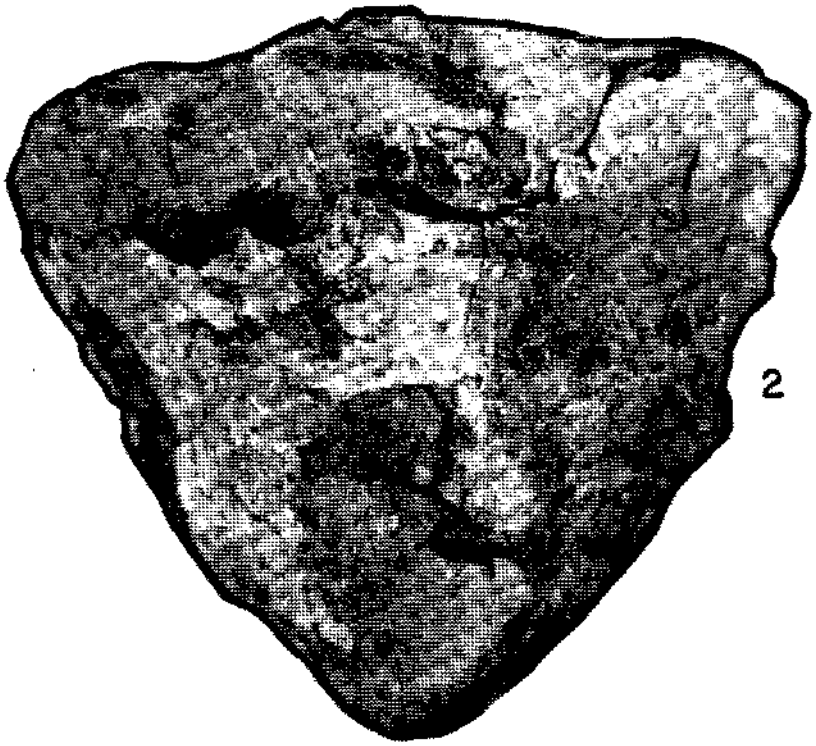

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PLATE - III

Dictyoptychus euphratica n. sp.

Fig. 1 - Upper valve, from above, x 1

Fig. 2 - Upper and lower valve, vieW of the posterior side, X 1

1

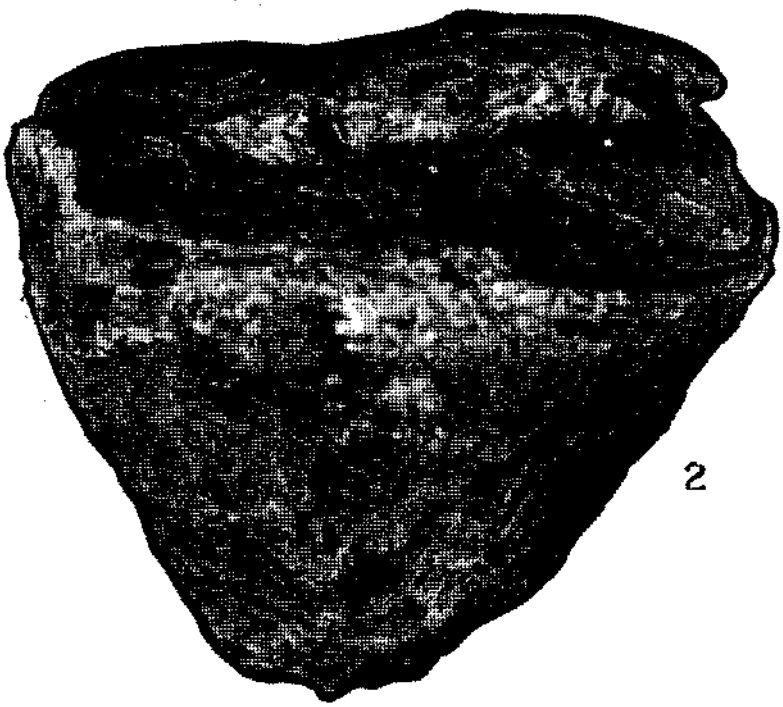

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PLATE - IV

Dictyoptychus orontica n. sp.

Fig. 1 - Upper and lower valve, view of the siphonal region, x 1

Dictyoptychus euphratica n.sp.

Fig. 2, 3 - Lower valve, cross-sections, X 1

N - Tooth of lower valve

O - Accessory cavity


1
2
3

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