



OSCILLOPHA OSTREIFORMIS SP. N. (BIVALVIA, OSTREINA) FROM THE SANTONIAN OF THE HAMDADAH AL HAMRA AREA (LIBYA)

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Abstract. A new species of Cretaceous oyster, *Oscillopha ostreiformis* sp. n. is described from the Santonian of the Hammadah al Hamra area (Libya). The new species differs from the type species of *Oscillopha dichotoma* (BAYLE, 1849) in its shape, size, sculptation, different structure of the umbonal region, position of the muscle imprint, stratigraphic range and distribution.

■ Mollusca, Bivalvia, Ostreacea, *Oscillopha ostreiformis* sp. n., Taxonomy, Cretaceous, Santonian, Libya.

INTRODUCTION

The revision of the collection of Upper Cretaceous molluscs of northern Africa revealed the existence of hitherto undescribed species of *Oscillopha* in the Santonian of the Hammadah al Hamra area (Libya). The presented paper brings its description.

The specimens studied are deposited in the Department of Palaeontology, National Museum, Prague (abbr. NM T 3003 – T 3021, T 2156, T 2172, T 2218).

SYSTEMATIC PART

Suborder Ostreina FÉRUSAC, 1882

Superfamily Ostreacea RAFINESQUE, 1815

Family Palaeolophidae MALCHUS, 1990

Subfamily Palaeolophinae MALCHUS, 1990

Genus *Oscillopha* MALCHUS, 1990

Type species *Oscillopha dichotoma* (BAYLE, 1849)

***Oscillopha ostreiformis* sp. n.**

Holotype: Specimen NM T 3003, figured here (Pl. I, fig. 1), isolated left valve.

Paratypes: NM T 3004 – T 3021.

Stratum typicum: Upper Cretaceous, Santonian.

Locus typicus: *Libya, sheet of the geological map of Ghadames, point 1285-II-A-11*

Material: 10 left valves, 9 right valves, 10 fragments.

Diagnosis: Holotype NM T 3003; H: 46.6 mm; L: 39.0 mm; W: 11.7 mm; Pl. I, fig. 1. Complete, isolated, markedly inequivalve, weakly concave left valve of elongated teardrop shape; posterior margin flat, straight; anterior margin raised, arched; umbonal region narrow, bent towards the posterior valve margin; posterior adductor muscle un-

Table 1. Measurements of the left valves of species *Oscillopha ostreiformis* sp. n. from Upper Cretaceous (Santonian) of Libya.

Inv. No.	T 3003	T 3004	T 3014	T 3015	T 3016	T 3017	T 3018	T 3019	T 3020	T 3021
Height	45.6	50.1	32.2	41.3	47.6	50.7	46.2	55.2	55.9	59.8
Length	39.0	38.9	21.4	32.8	34.5	44.3	46.3	40.7	48.9	45.2
Width	11.7	13.9	9.2	15.2	14.8	9.9	9.6	15.0	9.9	17.2

usually close to the ventral and posterior valve margins; external valve sculpture consists of many long unequal rounded radial ribs interrupted by frilled delicate, slightly raised growth squamae, often extending into prominent spinal protuberances and spines; marginal commissural shelf serrated; attachment area relatively large; no chomata.

Description: Shell size small to medium, commonly higher than long (largest dimensions of right valve are 65 mm in height and 53 mm in length). Shell almost equivalve, outline mostly elongate, oval and slightly crescentically curved. Both valves have about 14 to 17 broad, rounded, squamose or spinose radial ribs separated by interspaces of the same size. Adductor muscle imprint reniform or crescentic in cross section, positioned close to posterior valve margin and closer to ventral margin than to hinge. Attachment area at umbonal tip of left valve rather small. No chomata.

Discussion: The newly described species *Oscillopha ostreiformis* sp. n. from the Santonian of western Libya is usually confused with species *Oscillopha dichotoma* (BAYLE) (Text-fig. 1, Pl. I, fig. 7), widely distributed in the region of northern African. A detailed characteristic of the valves of this species and their morphological variability are discussed in a separate paper (Záruba 2003). Stratigraphic range of the species *O. dichotoma* is markedly wider than that of the newly described taxon. Besides the Santonian, it also occurs in the Campanian and extends up to the Maastrichtian (Abbas 1962; Coquand 1862, 1869; Pervinquier 1912). Santonian occurrences should be subjected to a revision because they highly probably represent the newly described species *O. ostreiformis* sp. n., and not *O. dichotoma*. The two species differ from each other in the size of the shells, their thickness, the character of the commissure and in the muscle imprint position. Both species are associated with marly beds in the Upper Senonian sediments, exposed at numerous sites of northern Africa (Čeppek 1979, Röhlich 1979, Salaj 1979). Thick-walled valves of the species *Oscillopha dichotoma* and high, sharp teeth on the marginal part of the shell, preventing transverse displacement of the valves, suggest that this species lived in high-energy environment of a highly exposed coast. In contrast, thinner valves of *O. ostreiformis* sp. n. and their only slightly undulating commissure indicate that the living conditions of *O. ostreiformis* sp. n. can be described as lower-energy nearshore waters. The two species also differ in the muscle imprint position. While the muscle imprint lies in the central part of the valve in *O. dichotoma*, it is shifted towards the lower valve margin in *O. ostreiformis* sp. n. With its radial ribs, the outer surface of the valve of *O. ostreiformis* sp. n. is reminiscent of the Cenomanian species *Oscillopha syphax* (COQUAND) (Pl. I, fig. 8). The latter species is also common in the Cenomanian sediments of the whole northern African region. In the past, the above mentioned species were ranked with-

Table 2. Measurements of the right valves of species *Oscillopha ostreiformis* sp. n. from Upper Cretaceous (Santonian) of Libya.

Inv. No.	T 3005	T 3006	T 3007	T 3008	T 3009	T 3010	T 3011	T 3012	T 3013
Height	43.6	50.0	65.0	31.3	42.5	53.2	51.9	50.7	59.7
Length	32.4	36.1	53.1	26.0	33.5	39.6	45.3	49.9	53.6
Width	11.4	13.7	16.5	7.1	6.9	11.0	9.8	14.5	13.9



Fig. 1. *Oscillopha dichotoma* (BAYLE), Inv No. T 2172, left valve, int., x 0.8, Upp. Campanian, Al Qaryat al Gharbíyah (Libya).

in the genus *Ostrea*, later *Lopha*. The problem of their generic appurtenance has been discussed in separate papers (Stenzel 1971, Malchus 1990, Záruba 1996).

Occurrence: Upper Cretaceous, Santonian.

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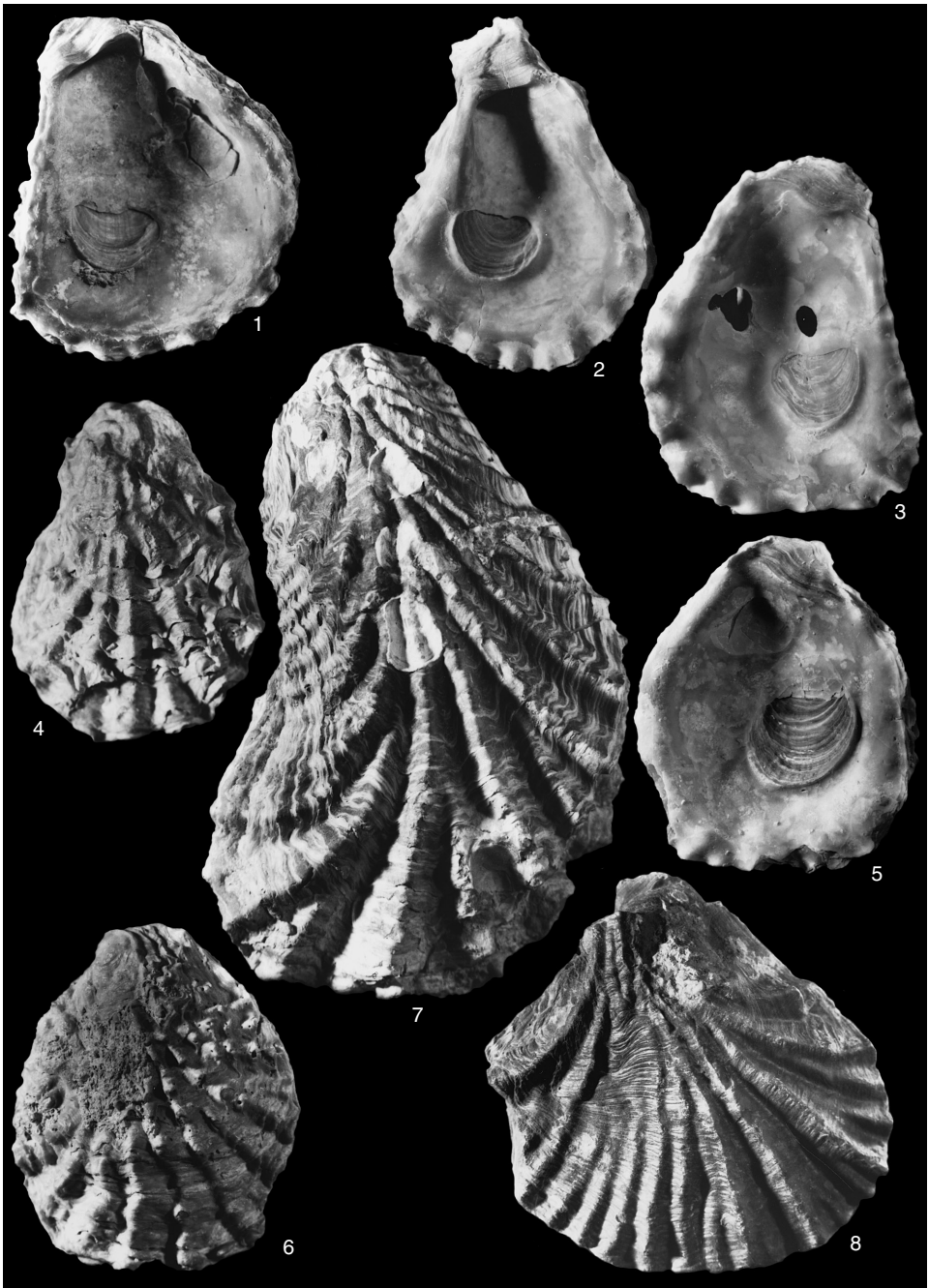


Plate I. – *Oscillopha ostreiformis* n.sp., Santonian, Ghadâmes, West Libya. (1) Specimen Inv. No. T 3003, left valve, int., $\times 1$ (holotype); (2) Specimen Inv. No. T 3004, left valve, int., $\times 1$; (3) Specimen Inv. No. T 3005, right valve, int., $\times 1$; (4) Specimen Inv. No. T 3006, right valve, ext., $\times 1$; (5, 6) Specimen Inv. No. T 3007, right valve, int., ext., $\times 1$; (7) *Oscillopha dichotoma* (BAYLE), Inv No. T 2218, right valve, ext., $\times 0,9$, Upp. Campanian, Al Qaryat al Gharbîyah (Libya); (8) *Lopha syphax* (COQUAND), Inv No. T 2156, right valve, ext., $\times 0,9$, Cenomanian, Tébessa (Algeria).