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Palaeozoology

Pleurocystitidae indet. (Cystoidea, Rhombifera) in the Bohemian Devonian (Czech Republic)

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Abstract. The paper presents the first find and description of skeletal ossicles of rhombiferan cystoids family Pleurocystitidae NEUMAYR, 1889 from Lower and Middle Devonian limestones of the Barrandian area, Bohemian Massif, Czech Republic.

■ **Cystoidea, Rhombifera, Pleurocystitidae, Devonian. Barrandian area, Czech Republic**

INTRODUCTION

A typically Ordovician group of Rhombiferan cystoids of the family Pleurocystitidae NEUMAYR, 1889, showing homeomorphic convergences with carpoids, is relativelly well-known both from Europe and North America (see e.g., Bather 1913, Parsley 1970). Devonian pleurocystitids have been described only from the Lower Devonian (Emsian) Hunsrück Shale in Germany (Dehm 1932), and from the Meadfoot Beds (Siegenian-Emsian) near Torquay, Devon, Great Britain (Paul 1974). During systematic investigations of the Devonian echinoderms of the Barrandian area, Czech Republic, a lot of isolated columnals, stem fragments and thecal plates of pleurocystitid rhombiferans have been discovered. The first information about their presence in the Bohemian Devonian is mentioned in Hotchkiss, Prokop et Petr (1999) and also in Prokop et Petr (2002) but without any details.

No examples of the whole animals are known in Bohemia and our knowledge must be pieced together only from their isolated ossicles. All these skeletal elements come from washings of weathered parts of the Lower and Middle Devonian limestones. Bohemian pleurocystitids occur in all stratigraphic levels and in most of the carbonate facies of the Barrandian Devonian, i.e. in Kotýz Limestone (Lochkovian), Koněprusy, Slivenec, Loděnice and Dvorce-Prokop Limestone (Pragian), both facies of the Zlíchov Limestone, i.e. in the bioclastic limestone of the "Kaplička Coral Horizon" and in the "normal" Zlíchovian micritic limestone (Lower Emsian), Třebotov and Suchomasty Limestone (Dalejan = Upper Emsian), and in the Choteč Limestone of Eifelian age. They have not been found in the non-carbonate sediments, only in limestones, and especially in micritic, biosparitic and sparitic ones which had been deposited at the bottom of a weakly aerated portion of the sedimentary basin, with relatively low energy currents or waves.

SYSTEMATIC PART

Class Rhombifera ZITTEL, 1879
Superfamily Glyptocystitida BATHER, 1899
Family Pleurocystitidae NEUMAYR, 1889

Pleurocystitidae gen. et sp. indet. A
(Pl. I, figs 1–8)

Type stratum: Lower Devonian, Pragian, Loděnice Limestone
Type locality: Praha-Klukovice, "Červený lom" quarry
Material: More than 150 isolated thecal plates, columnals and pluricolumnals from washings of weathered parts of the typical facies of the Loděnice Limestone, i.e. rosy-yellow biosparitic and biomicritic limestones.
Remarks: Isolated skeletal ossicles of this species occur plentifully at all localities of the Loděnice Limestone. Some ossicles, most probably identical with this species, have also been discovered in the washings from white-yelowish micritic Dvorce-Prokop Limestone of the same age (Pragian). The thecal plates are typical: minute, with shallow notch for (most probably one) pectinirhomb. The surface of these plates shows both strong, rounded radial ribs and coarse granulation.

Pleurocystitidae gen. et sp. indet. B
(Pl. I, figs 9–13, Pl. II, fig. 1–10)

Type stratum: Lower Devonian, Upper Emsian (Dalejan), Třebotov Limestone.
Type locality: Praha-Hlubočepy, "Prastav" quarry.
Material: Roughly 100 isolated thecal plates, columnals and pluricolumnals from washings of weathered parts of the Třebotov Limestone.
Remarks: Species B differs from the stratigraphically older species A first of all in size, shape and detailed morphology of thecal plates. The ossicles are larger, with a deep and narrow notch for the pectinirhomb and thecal surface bears slender ribs and a relatively fine granulation. The skeletal ossicles of pleurocystitids B occur frequently at all localities of the Lower Devonian Třebotov Limestone and, rarely in the micritic limestones of the Middle Devonian (Eifelian) Choteč Limestone.

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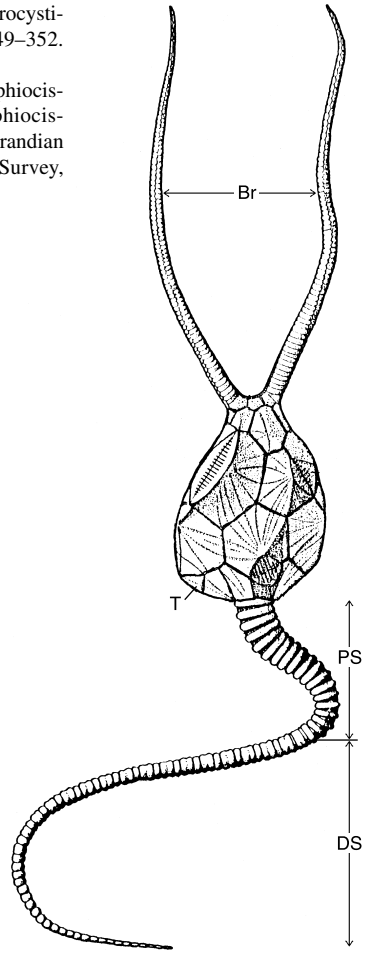
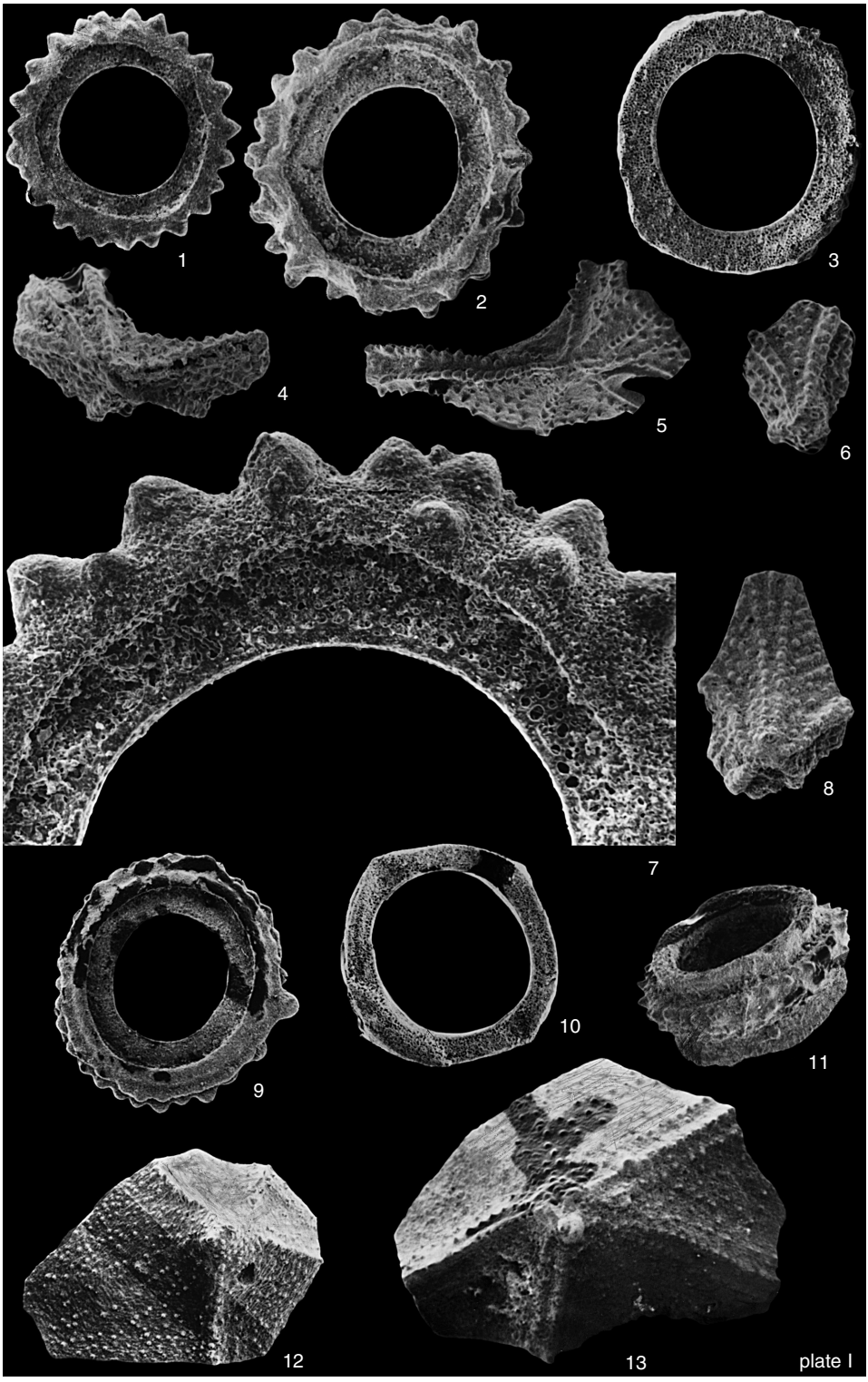


Fig. 1. Reconstruction of an entire specimen of *Pleurocystites* from the abanal face (After C. R. C. Paul , 1967). Br – brachioles, T – theca, Ps – proximal stem, Ds – distal stem.

Pl. I. Pleurocystitidae gen. et sp. indet. A: (1) L 37349, typical nodal or "outer"columnal from the flexible proximal portion of pleurocystitid stem, showing large lumen. × 24; (2) L 37350, ditto. × 20; (3) L 37351, internodal or "inner" proximal columnal. × 20; (4) L 37355, thecal plate. × 14; (5) L 37354, thecal plate with a notch for pectinirhomb. × 14; (6) L 37353, thecal plate. × 14; (7) L 37350, detail of the columnal from the fig. 2. × 50; (8) L 37352, thecal plate (lateral?). × 14; Lower Devonian, Pragian, Loděnice Limestone. Praha-Klukovice, "Červený lom"quarry. Pleurocystitidae gen. et sp. indet. B: (9) L 37357, outer proximal columnal. × 14; (10) L 37356, inner proximal columnal. × 14; (11) L 37358, fragment of a proximal portion of stem showing alternation of nodal and internodal (outer and inner) columnals. × 14; (12) L 37364, thecal plate (lateral?). × 15; (13) L 37361, ditto. × 14; Lower Devonian, Upper Emsian (Dalejan), Třebotov Limestone. Praha-Holyně, abandoned quarry "Prastav".

Pl. II. Pleurocystitidae gen. et sp. indet. B: (1) L 37359, fragment of the proximal part of stem showing alternation of inner and outer columnals. × 16; (2) L 37360, ditto. × 14; (3) L 37370, thecal plate with a notch for pectinirhomb. × 17; (4) L 37368, thecal plate. × 13; (5) L 37366, ditto. × 17; (6) L 37369, thecal plate with a notch of pectinirhomb. × 17; (7) L 37373, thecal plate with pectinirhomb, inner view. × 13; (8) L 37372, thecal plate with a narrow notch for pectinirhomb. × 13; (9) L 37371, thecal plate with pectinirhomb, inner view. × 23; (10) L 37362, thecal plate (lateral?), inner view. × 14; Lower Devonian, Upper Emsian (Dalejan), Třebotov Limestone. Praha-Holyně, abandoned quarry "Prastav". All specimens are housed in the collections of the Palaeontological Department of the National Museum (Museum of Natural History), Praha – Catalogue L. SEM photos by I. Čejková.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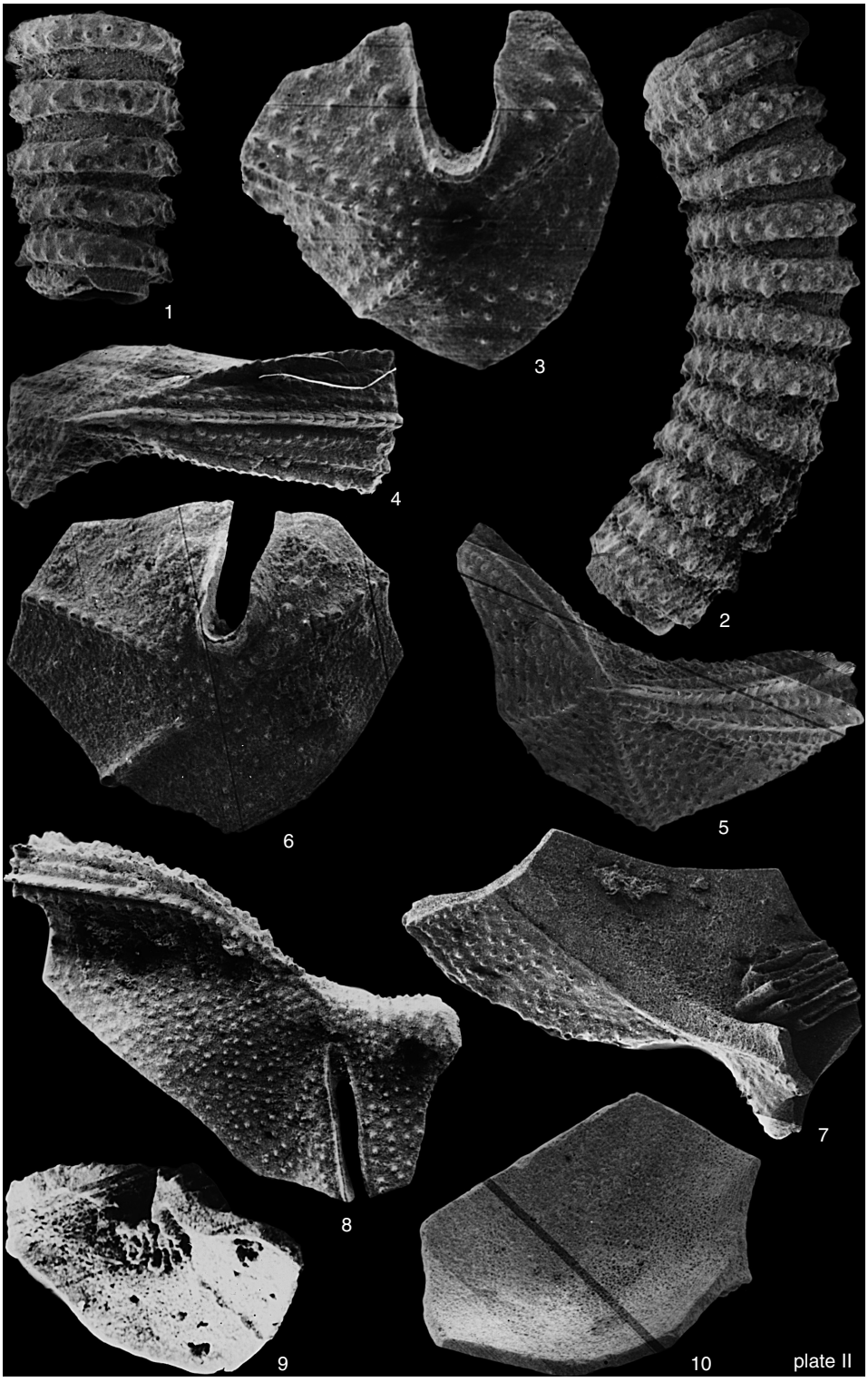
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