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MARHOUMACRINUS LEGRANDI, GEN. ET SP. N., (CRINOIDEA, CAMERATA) FROM UPPER SILURIAN – LOWERMOST DEVONIAN OF ALGERIA

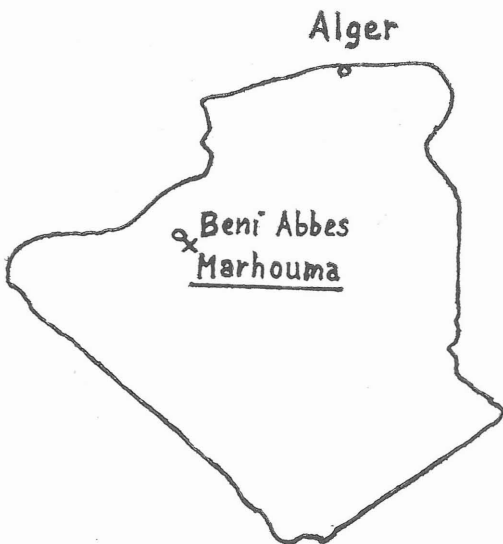
INTRODUCTION

In 1974, a paleontological expedition to the Algerian Democratic and People's Republic was organized by National Museum, Praha, in which action also the first of the authors took part. There was one of the head points of the program of the expedition, an extensive collecting of comparative paleontological material from West Algerian Lower Paleozoic outcrops. Lithological characters and faunal contents of their rocks, very similar to those of Central Bohemia, were also studied. Therefore, the expedition visited the principal sections in the region of vadi Saoura (Saoura River) and djebel Ougarta (Ougarta Mts). in the vicinity of oases of Beni Abbés, Ougarta, El Kseib, and Marhouma. There was derived a very abundant material of scyphocrinitid crinoids from the lower portion of the section Marhouma (about 25 km SSE from Beni Abbés). At the present time the crinoids are deposited in National Museum, Praha, and are described in this paper.

The lower part of the above mentioned section is built up of several tens of metres thick layers of fine-grained sandy dolomites with lenses or thin (0.5–3.0 cm thick) intercalations of selective weathered, bioclastic to biosparitic limestones, the bedding planes of which are covered with excellently preserved, naturally prepared skeletal remains of scyphocrinitid crinoids. Findings of whole crowns and isolated loboliths

are common in this place. From the lithological and faunistic point of view it is the same horizon with monotypic crinoid association which was presented by many previous authors (e.g., HOLLARD, 1960; LEGRAND, 1962; MENCHIKOFF, 1933; POUYETO, 1952, etc.), and which is described by MASSA—COMBAZ—MANDERSCHIED (1965, p. 31, and Pl. 8) from the section near Ben-Zireg, NE from Bechar, and from the region Tafilalet-Maider in SE Morocco in great detail. By the latter authors, this horizon is considered within uppermost Silurian, Pridolian (in orig. Post-Ludlow, Budnany supérieur), and in the local stratigraphy of Ougarta within the top of Oued-Ali Formation (see their table of section of Ougarta-Marhouma on p. 23).

The scyphocrinitid crinoids of the above cited horizon were commonly interpreted as *Scyphocrinites elegans* Zenker, 1833 (see e.g., POUYETO, 1952; LIERL, 1982) or as *Scyphocrinites* cf. *elegans* (ALBERTI, 1969), or as *Scyphocrinites* sp. (HORNÝ, 1977; UBAGHS, 1978a, 1978b). On the basis of the present study of the material from Algeria and partly from Morocco, the crinoids are assigned to a new genus and a new species of the family *Scyphocrinitidae* Jaekel, 1918, *Marhoumacrinus legrandi*, gen. et sp. nov., which differs from the genus *Scyphocrinites* Zenker, 1833 in several important features (see diagnosis below), and which is more closely related to the genus *Carolicrinus* Waagen et Jahn, 1899.



Text-fig. 1: Map of Algeria showing the section Marhouma (Upper Silurian-Lower Devonian [from which the type-material of *Marhoumacrinus legrandi*, gen. et sp. nov. was derived.

The authors express their deepest gratitude to prof. Philippe Legrand (Lab. Exploration Group Total, Pessac Cédex, France) for his professional leading of the excursion in the region of Ougarta-Marhouma, and for all his kind help to the expedition of National Museum, Praha in Algeria. We also express our acknowledgement to Mr. Hans-Jürgen Lierl (Linau b. Tritttau, FRG) for valuable comparative material from the region of Tafilalet, Morocco, and to Dr. Jiří Kříž (Geological Survey, Praha) for beneficial comments.

DESCRIPTIVE PART

Subclass *Camerata* WACHSMUTH et SPRINGER, 1885

Order *Monobathrida* MOORE et LAUDON, 1943

Suborder *Glyptocrinina* MOORE, 1952

Superfamily *Melocrinititacea* d'ORBIGNY, 1852

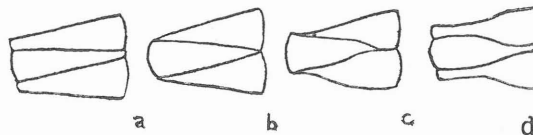
Family *Scyphocrinitidae* JAEKEL, 1918

Marhoumacrinus, gen. nov.

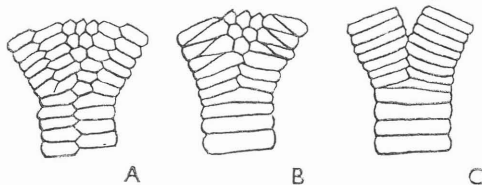
Type species: *Marhoumacrinus legrandi*, sp. nov.; Upper Silurian (Upper Pridolian), Lower Devonian (Lower Lochkovian) of Algeria and Morocco.

Diagnosis: scyphocrinitid showing development of phylogenetically immature biserial distal fixed brachials and brachials of free arms. Tertibrachs sometimes biserial. Proximal tertibrachs incorporated in calyx; intertertibrachs present. Intersecundibrachs in the first two ranges arranged invariably 1—1. First fixed pinnule borne by SBr 2 (outer), second by SBr 3 (inner), and third by SBr 4 (inner), in adults. Tegmen convex, with numerous polygonal ball-like tegminal plates. Very long stem differentiated into proxistele (cylindrical, with quinquelobate axial canal), mesistele (elliptical in cross-section, with quinquelobate axial canal), and dististele (cylindrical, with quinquestellate axial canal). A plate-lolith at the distal extremity of the stem.

Discussion: For detail analyse of differences between the three good known genera of the family *Scyphocrinitidae* Jaekel, 1918 see PROKOP et PETR (1986, Tab. 1). The differences between the distal fixed brachials of the three genera *Scyphocrinites* Zenker, 1833, *Marhoumacrinus*, gen. nov., and *Carolicrinus* Waagen et Jahn, 1899 are given in the present text-fig. 3. The text-fig. 2 shows the shape of brachials of free arms of the genus *Marhoumacrinus*, gen. nov. The discussed genus is represented in Algeria and Morocco (North Africa) by its type-species *Marhoumacrinus legrandi*, gen. et sp. nov.



Text-fig. 2: *Marhoumacrinus legrandi*, gen. et sp. nov. Schematic sketch of brachials of free arms based on distal tertibrachs (d) and quartibrachs (a—c) of the young specimen NM S 2215 [see also Pl. III., fig. 1] showing various examples of resorption of proximal and distal faces of brachials at their inner sides [opposite the pinnule facet].



Text-fig. 3: a) *Carolicrinus* Waagen et Jahn, 1899; b) *Marhoumacrinus*, gen. et sp. nov.; c) *Scyphocrinites* Zenker, 1833. Schematic sketch of fixed brachials within, and slightly above and below the SBr ax in three scyphocrinitid genera showing the presence or absence of distinct SBr ax, and presence or absence of intertertibrachs (formed exclusively of fixed pinnulars) in adults. It is an idealized drawing of "average" specimens because of extremely great variability not only of different scyphocrinitid individuals but even of different ray trunks in one specimen.

However, we believe the genus *Marhoumacrinus* is present also in the Lower Devonian (Helderbergian) of U.S.A., where it is represented by the species *Marhoumacrinus pyburnensis* (Springer, 1917) (in orig. *Scyphocrinus pyburnensis*), which comes from Hardin County, Tennessee (see Springer, 1917, p. 52—54, Pl. VII, figs. 2a, b, 3, Pl. VIII, figs. 6a, b, 7). Unfortunately, in the figured specimens there is an absence of higher fixed tertibrachs, and so we can not ascertain an important feature — presence of intertertibrachs. Nevertheless, the Springer's specimen Pl. VII, fig. 2a, b shows clearly three characters of the genus *Marhoumacrinus*: in intersecundibrachs only one plate in the second row, a pinnule borne by SBr 3 (inner), and phylogenetically immature biserial proximal tertibrachs.

Nothing is known about the origin of the genus *Marhoumacrinus*, gen. nov., but it is evident that the evolutionary trend in scyphocrinitids was from uniserial to biserial arrangement of brachials, and so the discussed genus have descended from a *Scyphocrinites*-like crinoid (or directly from a species of *Scyphocrinites*?). We believe, that the species *Carolicrinus barrandei* Waagen et Jahn, 1899 is a derivative of an isolated population of *Marhoumacrinus legrandi*, gen. et sp. nov., where the selection pressure was from immature biserial to mature biserial distal fixed brachials and brachials of free arms. *Marhoumacrinus legrandi*, gen. et sp. nov. is a very variable species; some Algerian specimens develop more mature biserial distal fixed brachials than the others. And likewise, in one Bohemian specimen of *Carolicrinus barrandei* Waagen et Jahn, 1899 there is almost uniserial arrangement of one trunk of secundibrachs and one trunk of tertibrachs (see PROKOP et PETR, 1986 text. fig. 5b). The unusual developed specimens of both the species support the opinion about their phylogenetic relation. However, there seems to be a possibility that *Marhoumacrinus legrandi*, gen. et sp. nov., which is described below, has a wider stratigraphical range than Upper Silurian, and survives into Lower Devonian (Lower Lochkovian). The supposed American populations of *Marhoumacrinus*, gen. nov. also survive into lower Lower Devonian.

Stratigraphic and geographic distribution: Upper Silurian (Upper Pridolian) -- Lower Devonian (Lower Lochkovian) of Algeria and Morocco, North Africa; ? Lower Devonian (Helderbergian) of Tennessee, North America.

Marhoumacrinus legrandi, gen. et sp. nov.

(Pl. I--VIII)

1977 r. *Scyphocrinites*; HORNÝ, p. 120, fig. 9.

1978a *Scyphocrinites* sp.; UBAGHS, p. T149, fig. 120/3--4.

1978b *Scyphocrinites* sp.; UBAGHS, p. T490, fig. 292/1e.

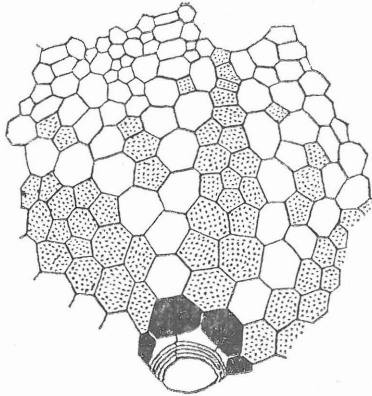
1982 *Scyphocrinites elegans* Zenker, 1833; LIERL, p. 285--290, figs. 1--4.

Holotype: Specimen NM S 2214 (Pl. I, fig. 1).

Locus typicus: Lower part of the section Marhouma, Algeria, North Africa.

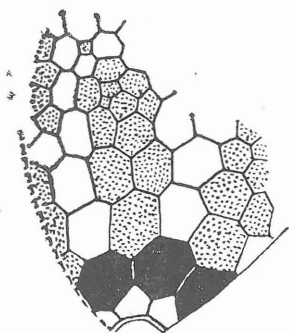
Stratum typicum: Upper Silurian (Upper Pridolian).

Material: Several crowns, several tens of calyces, and other rich material from the lower part of the section Marhouma, Algeria. One good calyx from Tafilalet (Hamar Laghdad), Morocco (NM S 2222), and two good plate-loboliths from Tafilalet (Hamar Laghdad), Morocco (NM S 2223 and NM S 2224). The specimens are deposited in the collections of the National Museum in Prague (below abbreviated as NM, catalogue No. S...).

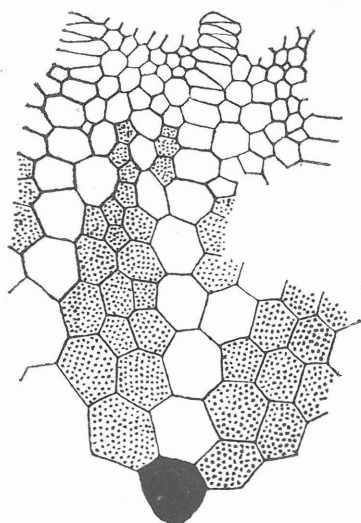


Text-fig. 4: *Marhoumacrinus legrandi*, gen. et sp. nov. from Upper Silurian of Algeria [scheme of part of calyx, CD interradius in the middle, based on holotype NM S 2214, Pl. I., fig. 1]. Radials black, interbrachials (except supposed fixed pinnulars) stippled. xl.

Description: Calyx large in adults, expanding from the stem facet (sometimes from the top of basals, but it is due of dorsoventral compression of that individuals) to different levels below the arm bases.



Text-fig. 5: *Marhoumacrinus legrandi*, gen. et sp. nov. Scheme of proximal part of calyx, CD interradius in the middle, based on the specimen NM S 2211 (see also Pl. VII., fig. 2). x1.

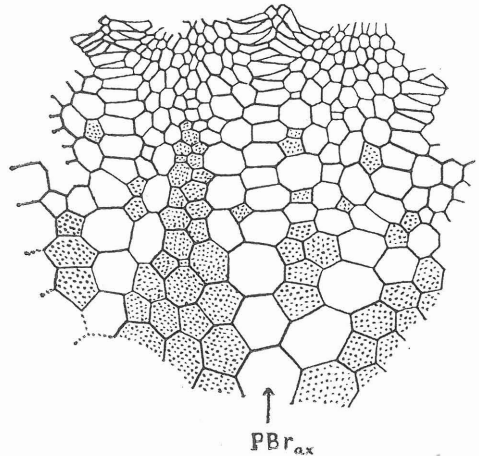


Text-fig. 6: *Marhoumacrinus legrandi*, gen. et sp. nov. Scheme of calyx showing the phylogenetically immature biserial distal secundibrachs. Based on specimen NM S 2210 (see also Pl. IV., fig. 1). x1,5.

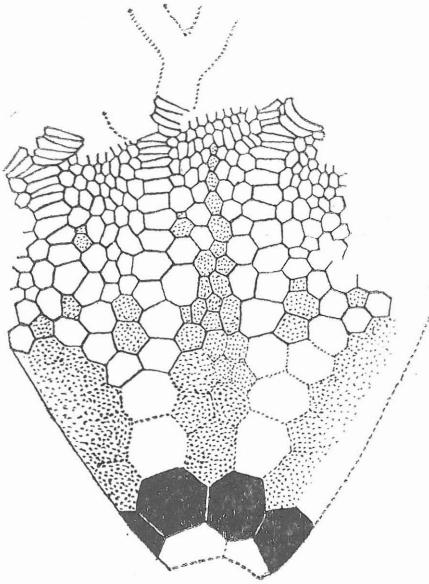
In young specimens the calyx expands to about the level of SBr 4. Anterior basal and anterior radial hexagonal, other basals and other radials septagonal. Primibrachs and first interbrachials about as large as radials (not only in adults, but even in young specimens). The most proximal calyx plates of adults typically sculptured by irregular dense granulation. The two primibrachs generally hexagonal, sometimes PBr ax septagonal. Secundibrachs typically 14 in the right half-ray and 13 (but sometimes 14) in the left half-ray. Intersecundibrachs numerous, but in the first two orders invariably 1-1 in arrangement, in many cases even 1-1-1. The five interradial areas variable, but do not differ from one another. In every case the succession of interbrachials in the first two ranges is 1-2 (never 1-3 in the posterior interradius). The sculpture of calyx plates (except the most proximal and most distal) formed of broad, low, rounded ridges radiating from about the centre of the plates (in distal portion of the calyx) or from a distance from the centre of the plates (in more proximal portion of the calyx), crossing the sutures

and connecting from plate to plate. The disappearing of the ridges from centres of the more proximal plates is due of the greater convexity of the plates. In all adults the proximal calyx plates distinctly convex.

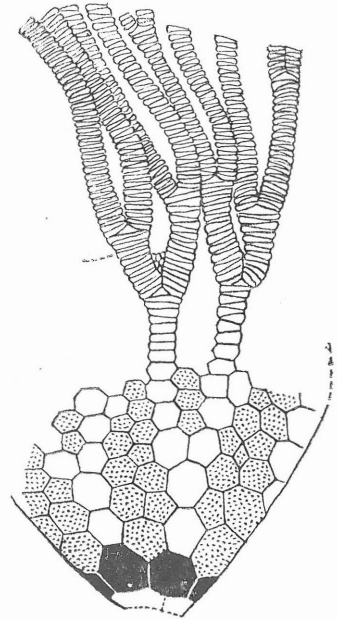
Text-fig. 7: *Marhoumacrinus legrandi*, gen. et sp. nov. Scheme of distal portion of calyx preserved from PBr ax up to the arm bases showing the almost mature biserial fixed tertibrachs and fixed pinnulars in great detail. Interbrachials and supposed interpinnulars stippled. Based on the specimen NM S 2216 (see also Pl. I., fig. 2). x1,5.



In good preserved specimens the above mentioned radiating low ridges are ornamented by transverse irregular corrugations. The most distal calyx plates (the most distal fixed brachials and fixed pinnulars) are generally smooth. In adult specimens first pinnule borne by SBr 2 (outer), second pinnule by SBr 3 (inner), third by SBr 4 (inner), fourth by SBr 5 (inner? or outer?), fifth by SBr 6 (outer), sixth by SBr 7 (inner), seventh by SBr 8 (outer), eighth by SBr 9 (inner), ninth by SBr 10 (outer), and so on. The succession is presented on the text-fig. 11b, c. A different sequence is seen in the young specimen NM S 2207 (see also Pl. VII, fig. 1; Pl. VIII; text-fig. 9, and text-fig. 11 a) in which the first pinnule in the left half-ray is borne by SBr 3 (outer), and consequently, in the left half-ray of that specimen SBr 5 and SBr 6 are joined by symplexy (all brachials above by symplexy, and all brachials below by sutures). This is possibly an abnormal development. In many cases the most distal secundibrachs show a poor development of phylogenetically biserial arrangement, which fact allows good determination of the pinnule-bearing sides of that brachials (see e.g., text-figs. 6, 7, 8). On the other hand, in some specimens (e.g., Pl. II, fig. 1) there is a very good development of uniserial secundibrachs without any trace of resorption in the inner (opposite the pinnule facet) side of brachials. Moreover, the two latter characters typically combined in the different trunks of one specimen. SBr ax generally distinct. Proximal tertibrachs incorporated in calyx; intertertibrachs present. In very young specimens, however, with complete development of secundibrachs (see e.g., text-fig. 9, Pl. VII, fig. 1), the intertertibrachs in some trunks absent or not yet fully developed. The tertibrachs (except the most proximal which are

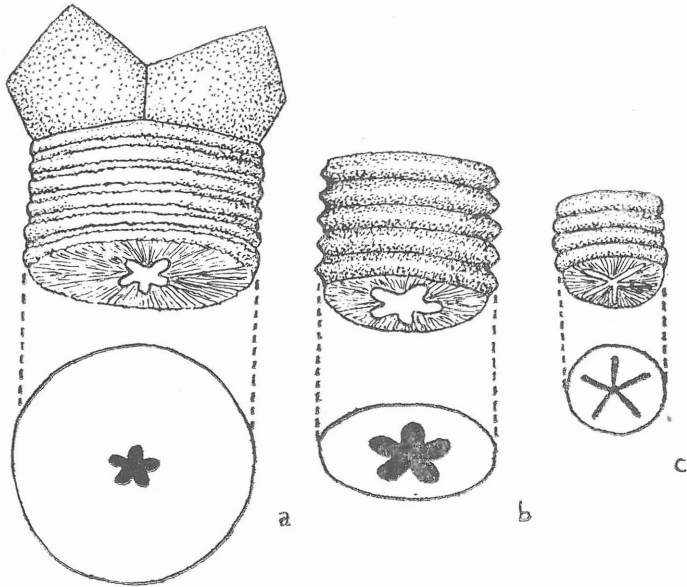


Text-fig. 8: *Marhoumacrinus legrandi*, gen. et sp. nov. Scheme of whole calyx [proximal part of the specimen weathered]. AB interradius in the middle. Based on the specimen NM S 2206 [see also Pl. IV., fig. 2]. x1,5.

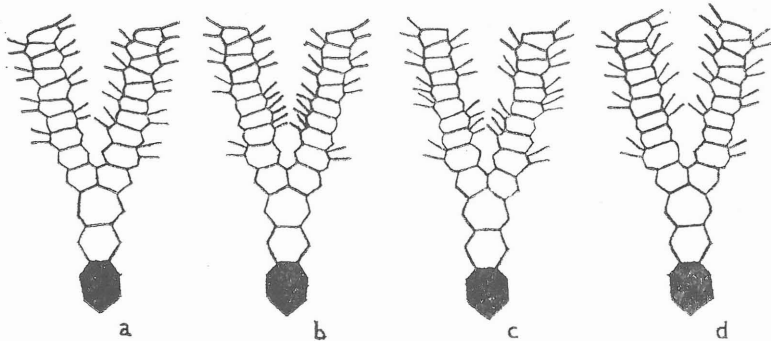


Text-fig. 9: *Marhoumacrinus legrandi*, gen et sp. nov. Scheme of part of crown in a young specimen showing complete development of secundibrachs, poor development of intertertibrachs, and a supposed abnormal sequence of fixed pinnules. Drawing from the specimen NM S 2207 [see also Pl. VII., fig. 1, and Pl. VIII.; text-fig. 11a]. AB interradius in the middle. x1,5.

united laterally) show the greatest tendency to biserial arrangement seen in the described species (in some cases almost uniserial, in many cases immature biserial, and in many cases almost mature biserial). The median ray ridges of the distal secundibrachs and fixed tertibrachs distinct. In some specimens the first pinnulars borne by distal fixed secundibrachs provided with a rounded ridge connecting from pinnular to pinnular, forming long ridge parallel with the median ray ridge (see e.g., specimen on Pl. II, fig. 1). Tegmen generally distinctly convex, with numerous polygonal ball-like plates. Anal tube possibly subcentral on tegmen, but in our material in every case broken away. The anal tube was figured by UBAGHS (1978b, fig. 292/1e, in orig. *Scyphocrinites* sp.), but the present authors did not see that specimen. In the outer part of the tegmen the tegminal plates are generally smaller, arranged in pinnule-like chains sloping downward to the interambulacral depressions. Free arms composed of short symplectially united brachials, showing development of phylogenetically immature biserial



Text-fig. 10: *Marhoumacrinus legrandi*, gen. et sp. nov. Drawings of pluricolumnals from the three principal portions of a stem. a) A pluricolumnal from proxistele with basals *in situ*. Based on several specimens, especially on NM S 2213 (see also Pl. V.) and NM S 2219. b) A pluricolumnal from mesistele. Based on very rich material, c) A pluricolumnal from dististele. Based on several specimens (e. g. NM S 2207, S 2210). [This type of pluricolumnals is commonly known from Bohemian uppermost Silurian attached to the proximal portions of plate-loboliths). All figures x 2,5.



Text-fig. 11: a) schematic interpretation of the sequence of fixed pinules in the young specimen NM S 2207 of *Marhoumacrinus legrandi*, gen. et sp. nov., possibly abnormal [see description of the species]; b) and c) *Marhoumacrinus legrandi*, gen. et sp. nov. A schematic sketch of the two types or two interpretations of succession of fixed pinules in adult specimens; d) *Scyphocrinites* Zenker, 1833. An idealized reconstruction of the sequence of fixed pinnules based on the view of Springer [1917]. The succession in the higher orders is more variable than figured, at least in the type-species *Scyphocrinites elegans* Zenker, 1833.

arrangement. Rami two in each ray, isotomously braching from about three to about five times. Each brachial bears a free pinnule which is composed of the most proximal segment (the segment is about as wide as long) and of a sequence of pinnulars (they are 2 to 3 times as long as wide). The utmost number of pinnulars in one pinnule of an adult may be almost 20. Stem attains possibly a length of several metres. The cylindrical proxistele is composed of very low columnals with pentalobate lumen. Sometimes in the proxistele young very low columnals are regularly intercalated between the moderately low older ones, which were initiated just below the calyx [see text-fig. 10 a]. The supposed mesistele is composed of elliptical columnals with very wide pentalobate lumen, and with latera provided by sharp ridges. The supposed cylindrical dististele is composed of moderately low columnals with distinctly pentastellate lumen [see text-fig. 10 b, c]. Because of the widely distributed monotypic association of the described crinoids with plate-loboliths, we ascribe a plate-lobolith to this species.

Dimensions: (in mm.):

Specimen	height of calyx from base up to SBr 3	height of calyx from PBr ax to arm bases	whole height of calyx
NM S 2207	19	20	29
NM S 2206	26	26	41
NM S 2210	29	33	48
NM S 2216	—	35	—
NM S 2214	32	—	—
NM S 2211	35	—	—
NM S 2208	—	60	—

Discussion: We believe, *Marhoumacrinus legrandi*, gen. et sp. nov. is not the only species of the genus, which in North America is possibly represented by the species *Marhoumacrinus pyburnensis* (Springer, 1917) [See the discussion on the genus].

Occurrence: In Algeria species comes from Upper Silurian (Upper Pridolian) and Lowermost Devonian (Lower Lochkovian) of the regions of Ben-Zireg (NE from Bechar), and of Ougarta-Marhouma (SE from Beni Abbés). In Morocco the species is known from the region of Tafilalet-Maider (East Anti-Atlas) from Upper Silurian and Lowermost Devonian too. The precise stratigraphic range of *Marhoumacrinus legrandi* gen. et sp. n., must be verified by detailed field investigations, of course.

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MARHOUMACRINUS LEGRANDI, GEN. ET SP. N., (CRINOIDEA, CAMERATA)
ZE SVRCHNÍHO SILURU — SPODNÍHO DEVONU ALŽÍRSKA

V roce 1974 uspořádalo Národní muzeum v Praze paleontologickou expedici do Alžírské demokratické a lidové republiky, které se zúčastnil i první z obou autorů tohoto příspěvku. Jedním z hlavních bodů programu expedice byly sběry srovnávacího paleontologického materiálu a studium staršího paleozoika západní části Alžírsko, které je litologicky i faunisticky velmi podobné staršímu paleozoiku středních Čech. Byly proto navštíveny základní profily v oblasti vádí Saoura a džebel Ougarta v okolí oáz Beni Abbés, Ougarta, El Kseib a Marhouma. Ze spodní části profilu Marhouma (asi 25 km jvv od Beni Abbés) byl pak získán velmi bohatý materiál scyphocrinitidních krinoidů, kteří jsou popsáni v systematické části této práce.

Zmíněná část profilu je budována několik desítek metrů mocným souvrstvím jemnozrnných písčitých dolomitů s čočkami nebo tenkými (0,5—3 cm mocnými) polohami selektivně vyvětrávacích bioklastických až biosparitických vápenců. Vrstevní plochy těchto vápenců jsou pokryty skvěle zachovanými a přirozeně vypreparovanými kosterními zbytky krinoidů. Časté jsou i nálezy celých korun a izolovaných lobolitů.

Jde o faunisticky i litologicky stejný horizont s monotypickou asociací scyphocrinitidních krinoidů, který uvádí již řada autorů (např. HOLLARD, 1960; LEGRAND, 1962; MENCHIKOFF, 1933; POUYETO, 1952 aj.) a který velmi podrobně popsali MASSA-COMBAZ-MANDERSCHIED (1965, str. 31, tab. 8) v profilu u Ben Zireg sv. od Becharu a z oblasti Tafilalet-Maider v jv. Maroku. Stratigraficky ho řadí k nejvyššímu siluru, předolu (v orig. Post-Ludlow, Budnany supérieur) a v lokální stratigrafii Ougarty k nejvyšší části souvrství Oued-Ali (viz profil Ougarta-Marhouma těchto autorů na str. 23).

Krinoidi byli dosud uváděni vesměs jako *Scyphocrinites elegans* Zenker, 1833 (viz např. POUYETO, 1952; LIERL, 1982) či *Scyphocrinites* cf. *elegans* (ALBERTI, 1969) a nebo jako *Scyphocrinites* sp. (HORNÝ, 1977; UBAGHS, 1978a; UBAGHS, 1978b aj.). Revizní studium alžírského a zčásti i marockého materiálu ukázalo, že jde ve skutečnosti o nový rod a druh čeledi *Scyphocrinitidae* Jaekel, 1918, *Marhoumacrinus legrandi*, gen. et sp. nov., který se výrazně odlišuje od rodu *Scyphocrinites* Zenker, 1833 a je fylogeneticky spřízněn s českým endemitem *Carolicrinus barrandei* Waagen et Jahn, 1899.

EXPLANATIONS OF PLATES

Pl. I.

Marhoumacrinus legrandi, gen. et sp. nov.

fig. 1: Holotype (NM S 2214). Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x1.

fig. 2: Specimen NM S 2216. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x2.

Pl. II.

Marhoumacrinus legrandi, gen. et sp. nov.

fig. 1: Old adult specimen showing numerous intertertibachs. NM S 2208. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x1,5.

fig. 2: Base of an adult specimen. NM S 2212. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x4.

Pl. III.

Marhoumacrinus legrandi, gen. et sp. nov.

fig. 1: Young specimen NM S 2215. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x1,2.

fig. 2: Detail of free arms from the slab with specimen NM S 2207. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x4.

Pl. IV.

Marhoumacrinus legrandi, gen. et sp. nov.

fig. 1: Specimen NM S 2210. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x2.

fig. 2: Specimen NM S 2206. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x2.

Pl. V.

Marhoumacrinus legrandi, gen. et sp. nov.

fig. 1: Specimen NM S 2213. Inner thecal surface of proximal part of calyx. Proximal part of stem *in situ*. Radials, primibrachs, and secundibrachs show traces of the aboral nervous system representing here by wide, shallow furrow. x2.

fig. 2: ditto in detail. The arrow indicates a small (2×3 mm.) shallow parabolic pit within the point of meeting of first secundibrach and three interbranchials. The pit is surrounded by a raised rim. That structure is related to ichnogenus *Tremichnus* Brett, 1985, especially to *Tremichnus minutus* Brett, 1985, from which it differs by a greater diameter and development on the inner, not the outer surface of calyx. x3.

Pl. VI.

Marhoumacrinus legrandi, gen. et sp. nov.

Whole crown of the specimen NM S 2209. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x1.

Pl. VII.

Marhoumacrinus legrandi, gen. et sp. nov.

fig. 1: Young specimen NM S 2207. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x1,5.

fig. 2: Specimen NM S 2211. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x2.

Pl. VIII.

Marhoumacrinus legrandi, gen. et sp. nov.

Whole slab with crown NM S 2207. Upper Silurian (Upper Pridolian) — Lowermost Devonian of Marhouma, Algeria. x1,2.

Photos by V. Petr and R. J. Prokop except Pl. II, IV, VI. (V. Turek). Whitened by ammonium chloride. Drawings by V. Petr.

