A C T A P A L A E O N T O L O G I C A P O L O N I C A

Vol. X 1965 No. 2

MARIA RÓŻKOWSKA

MARISASTRIDAE N.FAM. AND *MARISASTRUM* N.GEN. (DEVONIAN CORALS)

The Phillipsastraeacea, characterized by a tendency to a vertical growth of septa and dissepimentarium, fan-like disposition of trabeculae and presence or absence of horse-shoes, comprise the following families:

1) The Macgeeidae (Różkowska, 1951, subfam.) Schouppé, 1958, with a type genus *Macgeea* Webster, 1889, mostly singular, very seldom as massive colonies, similarly as in Marisastridae, have the epitheca and horse-shoes which are lacking in the new family;

2) The Phillipsastraeidae (Roemer, 1883) sensu Schouppé, 1958, includes forms with massive colonies and have the pseudotheca, which disappears in some places and, therefore, a tendency is here shown to integration of the colony. Two groups of species have been distinguished among them: a) genus *Phillipsastraea* d'Orbigny, 1849 with its type species *Astraea hennahi* Lonsdale, 1840, having the pseudotheca and horse-shoes, which are situated on the boundary between the tabularium and dissepimentarium, b) genus *"Phillipsastraea"* of most authors, including such species as *P. pentagona* (Goldfuss) and *P. goldfussi* (de Verneuil & Haime). This group has the pseudotheca, but has not the horse-shoes.

Accordingly, there is no family among the Phillipsastraeacea in which the new genus — *Marisastrum* — with massive colonies, as well as singular forms, assigned to *Ceratophyllum* Gürich, 1896, might be included.

Suborder **Phillipsastraeacea** Roemer, 1883

Family **Marisastridae** n.fam.

1896. Cyathophyllidae Gürich, partim; G. Gürich, Das Palaeozoicum..., p. 155.
1948. Disphyllidae Różkowska (subfam.), partim; M. Dembińska-Różkowska, Korale dewońskie..., p. 204.
1954. Disphyllidae Moenke, partim; M. Moenke, Rodzaj Hexagonaria..., p. 452.
1954. Neocampophyllidae Soshkina, partim; E. D. Soshkina, Devonskie..., p. 44.
1956. Phillipsastraeidae Hill, partim; D. Hill, Rugosa..., p. 279.
1958. Phillipsastraeidae Bulvanker, partim; E. Z. Bulvanker, Devonskie..., p. 114.

Type genus: *Marisastrum* n.gen.

Diagnosis. — Phillipsastraeacea either compound, with massive colonies, or, less frequently, simple. Epitheca distinct, septa fusiform, of two different lengths, tabulae compound. Horse-shoes lacking.

Discussion. — The new family is erected to include: *Marisastrum* n.gen. and *Ceratophyllum* Gürich, 1896, with its type-species *C. typus* Różkowska, 1954, non Gürich. In both genera the horse-shoes are lacking. *Ceratophyllum*, similarly as *Marisastrum*, has the epitheca, trabecular fans, fairly broad dissepimentarium, compound tabulae and septa with two different lengths, fusiform on the boundary between the tabularium and dissepimentarium. This is a simple form, forming only a few peripheral buds.

Genus *Marisastrum* n.gen.

Type species: *Cyathophyllum sedgwicki* Edwards & Haime, 1853.

1826. *Cyathophyllum* Goldfuss; G. A. Goldfuss, Petrefacta..., p. 54.
1849. *Phillipsastraea* d'Orbigny; A. d'Orbigny, Notes..., p. 12.
1896. *Hexagonaria* Gürich; G. Gürich, Das Palaeozoicum..., p. 171.
1900. *Prismatophyllum* Simpson; G. B. Simpson, Preliminary descriptions..., p. 17.
1921. *Spinophyllum* Wedekind; R. Wedekind, Zur Kenntnis..., p. 3.

Derivation of name: *Marisastrum* — Lat. *mare* = sea, *astrum* = star.

Diagnosis. — Colonies massive, individuals multilateral and surrounded by a distinct epitheca; septa smooth or carinate; dissepimentarium broad, convex; trabecular fans more or less symmetrical, tabularium compound, convex. Horse-shoes absent.

Distribution. — Species of this genus are known from the Frasnian. A single species from the Lower Famennian is mentioned by Bulvanker (1958).

Geographical range. — In Poland: Holy Cross Mountains (Góry Świętokrzyskie) and Sudeten Mountains. Besides: South England, France, Belgium, Western Germany, U.S.S.R. (Ural, Timan, Russian Plateau, Armenia) and North America.

Discussion. — In addition to the type species, the following ones are attributed to the new genus: *Acervularia davidsoni* Edwards & Haime, 1851, p. 428, *Hexagonaria mirabilis* Moenke, 1954, and *H. sanctacrucensis* Moenke, 1954. It is possible that also some American species of the genus *Prismatophyllum*, described by Smith (1945), should be assigned to *Marisastrum*.

Marisastrum sedgwicki (Edwards & Haime, 1853)
(Text-figs. 1, 2 *a*—*b*)

1853. *Cyathophyllum sedgwicki* Edwards & Haime; H. M. Edwards & J. Haime, British fossil corals, p. 231, Pl. 52, figs. 3, 3a.

1954. *Hexagonaria sedgwicki* (Edwards & Haime); M. Moenke, Hexagonaria..., p. 465, Figs. 3—5, 7; Pl. 1, figs. 3—6, (cum syn.).
1954. *Phillipsastraea sedgwicki* (Edwards & Haime); E. D. Soshkina, Devonskie..., p. 46, Pl. 10.
1958. *Phillipsastraea sedgwicki* (Edwards & Haime); E. Z. Bulvanker, Devonskie..., p. 119, Pl. 55, fig. 3; Pl. 56, figs. 1 a—b.

Type specimen: The specimen indentified by Edwards and Haime in 1853 as *Cyathophyllum sedgwicki* and figured by them (1853, Pl. 52, figs. 3 a—b) are refigured in the present paper in Text-fig. 1. British Museum (Natural History) No. 48451, labelled: Middle Devonian, Torquay. According to Mr Scrutton's opinion (personal communication), the Middle Devonian age of this specimen "is probably unreliable".

Type horizon and locality: probably Frasnian, Torquay.

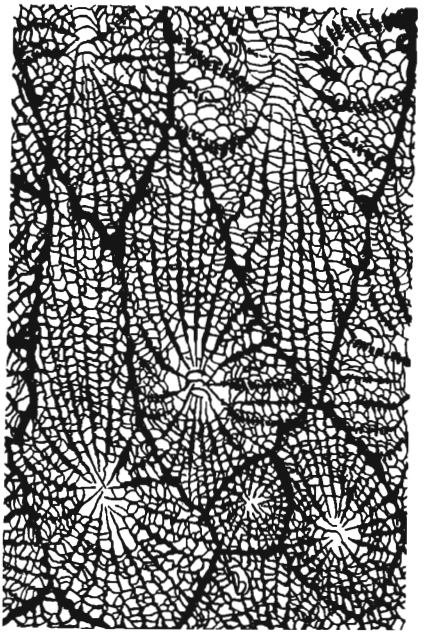

Fig. 1. — *Marisastrum sedgwicki* (Edwards & Haime), drawn from a photographed peel of British Museum (Nat. Hist.), specimen No. 15269, labelled: Middle Devonian, Torquay (topotype); × 5.

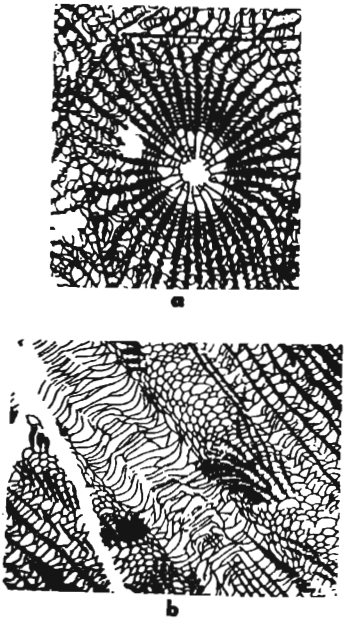

Fig. 2. — *Marisastrum sedgwicki* (Edwards & Haime), from figures 4 (*a*) and 5 (*b*) of Moenke (1954), No. 181a. Wietrznia quarry, Lower Frasnian

Diagnosis. — Cerioid tetracorals with peripheral buds. The epitheca is thin, straight or slightly zigzag. The septa are radially arranged and differentiated into two orders. In transverse section they are carinate. They are thin to moderately thick in outer and middle parts of the dis-

sepimentarium and become fusiform at the inner dissepimentarium. The major septa alone extend into the tabularium where they are attenuate, smooth and withdrawn from the axis. The dissepimentarium consists of upward convex dissepiments with a vertical growth tendency. There are no horse-shoe dissepiments. The trabeculae have a fan-shaped arrangement and occasionally a symmetric disposition. The longitudinal section shows compound tabulae with distinctly differentiated axial series split up and developing additional tabellae. A periaxial series consists of flat, concave or convex plates.

Distribution. — *Marisastrum sedgwicki* (Edwards & Haime), in addition to the above occurrences, has been identified in the Frasnian of Western Europe, U.S.S.R. and Asia.

Discussion. — The species *C. sedgwicki* was introduced by Edwards and Haime (1853) for specimens from the Torquay Devonian. Mr C. T. Scrutton has informed me by letter that "the original of Edwards and Haime, 1853, Pl. 52, figs. 3, 3a, is in the British Museum collection (No. 48451). There is no doubt of its identity as it can be matched exactly with their figures. Dr H. D. Thomas has kindly tried to make a peel of the back of the specimen but as it is very thin he could not risk breaking it. Moreover, the specimen is too thin to provide a longitudinal section".

Therefore Dr Thomas allowed Mr Scrutton to select a conspecific and topotypic (from Torquay) specimen from the British Museum collections (No. 15269) and to make a peel of it. Its inner structure is like that in the specimens from the Frasnian of the Holy Cross Mountains and is conspecific with them.

Cyathophyllum sedgwicki Edwards & Haime is frequent in bioherms and reefs of Frasnian deposits. It has been referred to various genera.

Simpson (1900, p. 218) introduced *Prismatophyllum* with the type species *Cyathophyllum rugosum* Edwards & Haime (1851, p. 387, Pl. 12, figs. 1, 1a), non *Astraea rugosa* Hall, 1843. Lang and Smith (1935, p. 558), therefore, renamed Edwards and Haime's species as *Prismatophyllum prisma*. The latter is, however, congeneric with *Cyathophyllum hexagonum* Goldfuss, 1826, the genolectotype of *Hexagonaria* Gürich, 1896, of which *Prismatophyllum* is thus a synonym. The species *sedgwicki*, however, has fan-shaped trabecular arrangement like the representatives of the suborder Phillipsastraeacea Roemer, 1883, *in* Schouppé (1958, p. 217), and not parallel trabeculae as in the disphylloid genera.

Soshkina (1954, p. 102, Pl. 41) referred the species *sedgwicki* to the genus *Phillipsastraea* d'Orbigny, 1849. But Schouppé (1958, p. 235) proved that its type species *Astraea hennahi* Lonsdale has a fan-shaped trabecular arrangement and a row of horse-shoe dissepiments, whilst *sedgwicki*, although having fan-shaped trabeculae, has no horse-shoes.

*

The author is most grateful to Dr H. D. Thomas, British Museum (Natural History), London, and to Mr C. T. Scrutton, Oxford, University Museum, for their kind endeavours.

Palaeozoological Institute
of the Polish Academy of Sciences
Poznań Branch
Poznań, October 1964

REFERENCES

BULVANKER, E. Z. 1958 Devonskie četyrechlučevye korally okrain Kuzneckogo bassejna. — *VSEGEI, Min, geol. ochr.*, 1—212, Leningrad.

DEMBIŃSKA-RÓŻKOWSKA, M. 1948. Korale dewońskie Gór Świętokrzyskich (Les Zoanthaires dévoniens du Massif de Ste-Croix). — *Wiad. Muz. Ziemi*, **4**, 187—220, Warszawa.

EDWARDS, H. M. & HAIME, J. 1853. A monograph of the British fossil corals. 4: Corals from the Devonian formation. — *Palaeontogr. Soc.*, 211—244, London.

GOLDFUSS, G. A. 1826. Petrefacta Germaniae. 1, 1—76, Düsseldorf.

GÜRICH, G. 1896. Das Palaeozoicum im Polnischen Mittelgebirge. — *Verh. russ. kais. min. Ges.*, **32**, 1—539, St. Petersburg.

HILL, D. 1956. Rugosa. *In:* Moore, C. M., Treatise on Invertebrate Paleontology, Part F. 234—327, New York.

LANG, W. D. & SMITH, S. 1935. Cyathophyllum caespitosum Goldfuss, and other Devonian corals considered in a revision of that species. — *Quart. J. Geol. Soc.*, **91**, 538—590, London.

—, SMITH, S. & THOMAS, H. D. 1940. Index of Palaeozoic coral genera. — British Museum, 1—231, London.

MOENKE, M. 1954. Rodzaj Hexagonaria w dewonie Gór Świętokrzyskich (Genus Hexagonaria in the Devonian of the Holy Cross Mts.). — *Acta Geol. Pol.*, **4**, 4, 445—479, Consp. 137—144, Warszawa.

ORBIGNY, A. d'. 1849. Notes sur les Polypiers fossiles. 1—12, Paris.

ROEMER, F. 1883. Lethaea geognostica. I: Lethaea palaeozoica. **1** (2), 113—544, Stuttgart.

RÓŻKOWSKA, M. 1954. Badania wstępne nad Tetracoralla z eiflu Grzegorzowic (Preliminary investigations of Couvinian tetracorals of Grzegorzowice). — *Acta Geol. Pol.*, **4**, 2, 207—248, Consp. 43—58, Warszawa.

— 1957. Considerations on Middle and Upper Devonian Thamnophyllidae Soshkina in Poland, II (Rozważania ogólne dotyczące rodziny Thamnophyllidae Soshkina w środkowym i górnym dewonie Polski, II). — *Acta Palaeont. Pol.*, **2**, 2/3, 81—153, Warszawa.

SCHOUPPÉ, A. v. 1958. Revision des Formenkreises um Phillipsastraea d'Orb., "Pachyphyllum" E. & H., Macgeea (Webst.), "Thamnophyllum" Pen., Peneckiella Soshkina und verwandter Formen. — *N. Jb. Geol. Paläont. Abh.*, **106**, 2, 139—224, Stuttgart.

SIMPSON, G. B. 1900. Preliminary descriptions of new genera of Paleozoic Rugose corals. — *Bull. N. Y. State Mus.*, **8**, 199—222, New York.

SMITH, S. 1945. Upper Devonian corals of the Mackenzie river region, Canada. — *Geol. Soc. Amer., Spec. Paper*, **59**, 1—26, New York.

SOSHKINA, E. D. 1954. Devonskie cetyrechlucevye korally Russkoj Platformy. — *Tr. Paleont. Inst. AN SSSR*, **52**, 1—74, Moskva.

WEDEKIND, R. 1921. Zur Kenntnis der Stringophyllen des oberen Mitteldevon. — *Sitz. ber. Ges. Bef. Naturwiss.*, 1—16, Marburg.

MARIA ROŻKOWSKA

MARISASTRIDAE N.FAM. I *MARISASTRUM* N.GEN. (KORALE DEWOŃSKIE)

Streszczenie

W obrębie podrzędu Phillipsastraeacea autorka ustanawia nową rodzinę Marisastridae, obejmującą formy kolonijne o masywnych koloniach, bądź formy osobnicze. Cechą charakterystyczną nowej rodziny jest obecność wyraźnej epiteki, wrzecionowatych septów dwojakiej długości, złożonych tabul oraz brak podkówek.

Do nowej rodziny zaliczono *Marisastrum* n.gen. i *Ceratophyllum* Gürich, 1896.

МАРИЯ РУЖКОВСКА

MARISASTRIDAE N. FAM. И *MARISASTRUM* N. GEN. (ДЕВОНСКИЕ КОРАЛЛЫ)

Резюме

В пределах подотряда Phillipsastraeacea автор устанавливает новое семейство Marisastridae, включающее колониальные формы с массивными колониями, либо формы единочные. Характерной чертой нового семейства является присутствие четкой эпитеки, веретенообразных септ двоякой длины, сложных днищ и отсутствие подковок.

К новому семейству причислено *Marisastrum* n. gen. и *Ceratophyllum* Gürich, 1896.