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BY

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PACHYPHYLLUM VAGABUNDUM, A NEW CORAL FROM THE UPPER DEVONIAN STRATA OF NEW YORK

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THE coral described in this paper was collected by Professor George H. Chadwick, who reported[1] its geological occurrence at the Rochester, New York, meeting of the Paleontological Society of America in 1934. Professor Chadwick exhibited the specimen at the meeting and at that time suggested the name *Phillipsastraea vagabunda* for it.

I am indebted to Professor Chadwick for permission to study and describe this interesting coral and to Doctor J. Frank Pepper, of the United States Geological Survey, for information in regard to its stratigraphic position and for photographs illustrating the character of its burial (Pl. I).

Pachyphyllum vagabundum Ehlers, sp. nov.

(Pl. I, Figs. 1–2; Pl. II, Figs. 1–3)

Description.—Species known only from one incomplete corallum having a larger diameter of 24 cm., a smaller diameter of 14 cm., and a thickness of 7.4 cm. Corallum astraeoid, when complete, probably two to three times as large as part composing the holotype and of very low hemispherical form. Calicular pits of mature corallites circular to oval, relatively deep and 1.8 to 3.8 mm. in diameter; diameter of most of them about 3.3 mm. Pits surrounded by narrow borders elevated above general surface of dissepimental platform. Most of the pits separated from one another by distances of 6 to 8 mm. Septa in mature corallites range from twenty-two to twenty-

[1] G. H. Chadwick, "Large Coral in the New York Portage Rocks," *Proc. Geol. Soc. Amer.*, 1934 (1935), p. 373.

seven, most of the corallites having twenty-four to twenty-six septa. Septa relatively thin and low, with angular crests outside of raised calicular borders and exsert on these borders. Major septa thin within calicular borders, most of them extending from latter towards centers of calicular pits for distances of about one-third the diameters of pits; a very few with slightly greater extent. Minor septa slightly attenuated within the calicular borders, their axial ends terminating on the inner slopes of the latter.

In transverse section some septa confluent, others abutting. Septa dilated in areas coinciding with narrow calicular borders; major septa more dilated than minor septa, their axial ends much attenuated and extending into tabularium.

In longitudinal section tabularia relatively narrow, with an average width of 3.3 mm. Tabulae thin, closely spaced, complete and incomplete; complete tabulae horizontal to slightly arched, incomplete tabulae well arched. Very steeply inclined periaxial tabulae present at distantly separated places along borders of tabularia. Horseshoe dissepiments adjacent to tabularia, small and situated beneath circular oval borders surrounding calicinal pits. Ordinary dissepiments well arched, broader than high, with a tendency to be arranged in layers. Dissepiments adjacent to horseshoe dissepiments more steeply inclined than those more distant from them.

Remarks.—This species resembles *Pachyphyllum woodmani* (White) from the Upper Devonian Lime Creek strata of Iowa. *P. woodmani,* as shown by illustrations of a hypotype in Plate III, differs from *P. vagabundum* in having more septa, of which the major reach almost to the axes of the corallites. The peripheral ends of most septa do not quite reach those of neighboring corallites in *P. woodmani;* the septa in *P. vagabundum* are confluent or abutting.

Occurrence.—The only known specimen of this species was collected from a very fine-grained, greenish buff, micaceous sandstone exposed in a rock cut beside New York State Highway 70 along Goff Creek about four miles southwest of Avoca and .85 of a mile north of Damon's Pond in Steuben County, New York. It was found about six feet above the road at or near the west end of the rock

cut where the present highway curves away from the old road and cliff at this locality (Pl. I, Fig. 1).

The coral was found with its gently convex distal surface directed downward (Pl. I, Fig. 2). It is a part of a specimen which was broken into two or more pieces by waves or currents, the only known part finally coming to rest in an upside-down position before complete burial.

According to Dr. Pepper the coral was taken from strata that occupy a position near the top of the West Hill formation or the base of the overlying Nunda sandstone, two stratigraphic units included in the Chemung stage of the Upper Devonian. It was found in association with plant remains, a dictyosponge, crinoid columnals, a small strophomenid, *Atrypa hystrix* Hall, and a questionable cephalopod.

The genus *Pachyphyllum* is represented by many species in the Upper Devonian strata of Iowa, the Cordilleran region of the United States and Canada, and the Mackenzie River district of Canada. The coral described in this paper is of special interest because it is the first representative of the genus recorded from the Upper Devonian of the eastern part of the United States.

Type.—The holotype and the fossils in association with it are preserved in the collection of the United States National Museum.

EXPLANATION OF PLATE I

FIG. 1. View of Upper Devonian strata beside New York Highway 70; specimen of *Pachyphyllum vagabundum* in place between right hand of Professor Chadwick and hammer.

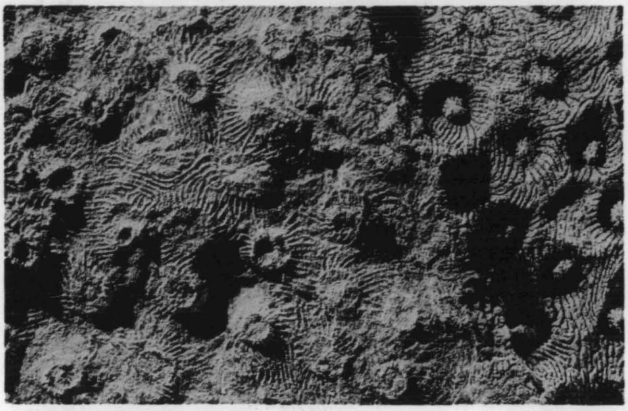
FIG. 2. A closer view of specimen shown to right of hammer. The convex distal surface of the overturned corallum is just above the center of the view.

PLATE I

FIG. 1

FIG. 2

PLATE II



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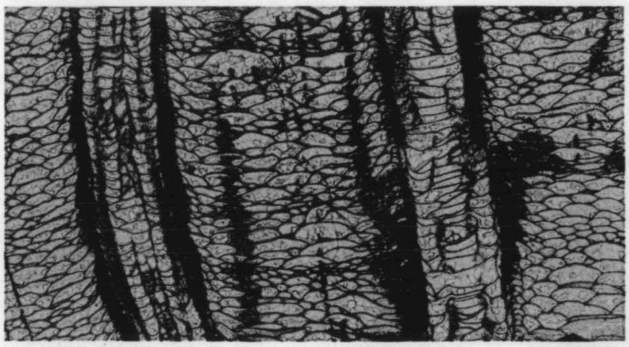

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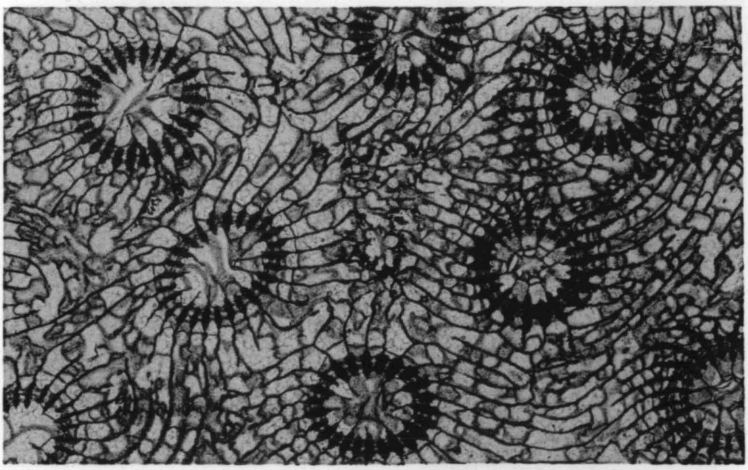

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EXPLANATION OF PLATE II

PAGE

Pachyphyllum vagabundum Ehlers, sp. nov. 1

FIG. 1. Part of weathered distal surface of holotype; calicular pits with elevated borders and confluent and abutting septa. Surface of portion in right third of figure much weathered by solution. ×1.

FIG. 2. Longitudinal section of holotype; two tabularia and adjoining dissepimentaria. Complete and incomplete tabulae and steeply inclined periaxial tabulae illustrated best in tabularium at right. Dissepimentaria show small horseshoe dissepiments and relatively broad ordinary dissepiments with a tendency to be arranged in layers. ×3.

FIG. 3. Transverse section of holotype; confluent and abutting septa, dilation of septa, and extent of major septa within tabularia. Three immature corallites at center. ×3.

EXPLANATION OF PLATE III

PAGE

Pachyphyllum woodmani (White) 2

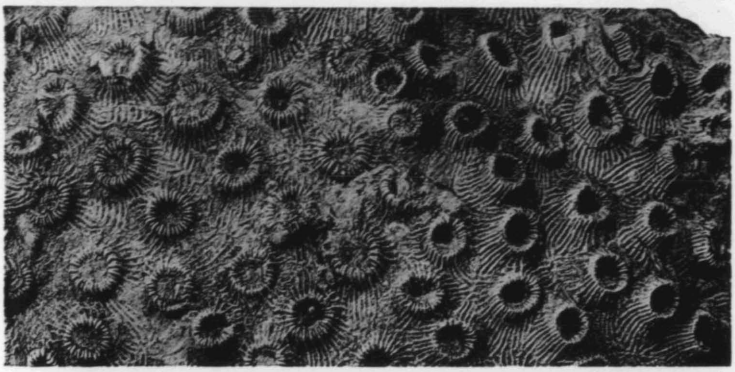
FIG. 1. Part of distal surface of a corallum which resembles that of *P. vagabundum*. Calicinal pits of *P. woodmani* as shown in this figure have greater diameters than those of *P. vagabundum* illustrated in Plate II, Fig. 1. Hypotype No. 18869, Museum of Paleontology, University of Michigan, Upper Devonian Lime Creek strata, Rockford, Iowa. ×1.

FIG. 2. Longitudinal section of same corallum, with wider tabularium than that of *P. vagabundum* and tabulae more depressed peripherally than those of the latter. Section shows horseshoe dissepiments forming raised border surrounding calicinal pit.

FIG. 3. Longitudinal section of same corallum showing horseshoe dissepiments which are more clearly defined than those of *P. vagabundum*.

FIG. 4. Transverse section of same corallum with larger number of septa in corallites than in those of *P. vagabundum,* septa free at their peripheral ends instead of confluent and abutting as in that species, and major septa extending nearer the axes of the corallites than in those of *P. vagabundum*.

PLATE III



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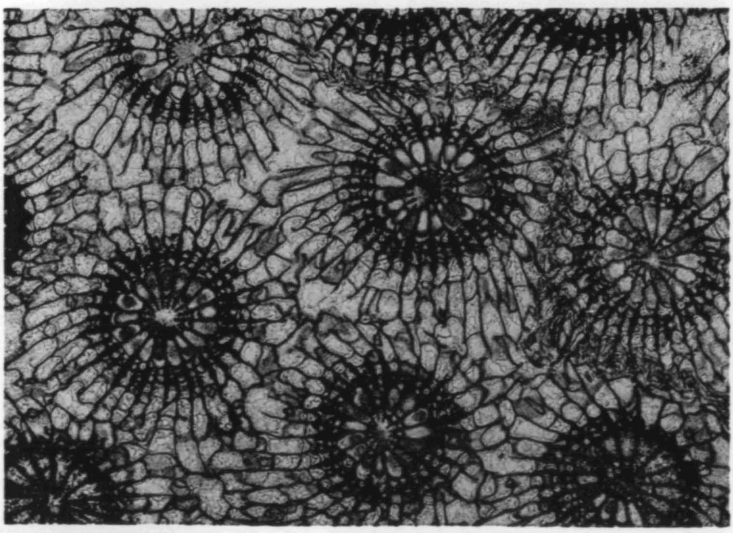

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