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A DEVONIAN SPECIES OF *HELIOLITES*
FROM NEVADA

BY
ERWIN C. STUMM



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INTRODUCTION

THE new species of tabulate coral described in this paper is the first representative of the genus *Heliolites* that is known to exist in North America in strata of undoubted Devonian age.

Five species of the genus have been described from North America as belonging to strata that were originally believed to be Devonian but are now assigned to the Silurian. Lambe (1899, pp. 80-82) assigned specimens to *Heliolites interstinctus* (Linnaeus), *H. subtubulata* (McCoy), and *H. inordinata* (Lonsdale); the specimens were obtained from strata at three localities, Anse a la Vieille, Pointe au Bouleaux, and Anse a la Barbe, along the north shore of Chaleur Bay, Gaspé Peninsula, Quebec. These strata, while considered by Lambe to be of Helderberg age, are included in the Chaleur series which is Middle Silurian.

Stauffer (1930, p. 108) described a new species of *Heliolites*, *H. occidentales*, from strata near Kearsarge in the Inyo Mountains of southeastern California, which he believed were Middle Devonian. Waite (1953, p. 1521) has demonstrated that the strata of the Kearsarge area are of late Niagaran or early Cayugan age and that no Devonian rocks are present in the region. Stauffer (1930, p. 108) described a specimen from the Kennett formation of the Klamath Mountains region in northeastern California and erroneously assigned it to *Heliolites porosus* (Goldfuss), a species found in the European Devonian. I have sectioned several corals in the collections of the United States National Museum from the Kennett

formation near Gazelle, California. They seem to have been collected from the locality that yielded Stauffer's material. All are Silurian forms, which indicates that much, possibly all, of the Kennett formation of northeastern California is of that age.

In 1940 Merriam (pp. 9, 47, 51, 57, 58) reported a species of *Heliolites* from the Nevada limestone in the Roberts Mountains region of east-central Nevada. It occurs in high Middle Devonian beds, 1800 feet above the base of the formation and 640 feet below the *Stringocephalus* zone which marks the upper limit of the Middle Devonian in the Great Basin region. Dr. Merriam gave me a specimen in 1935, upon which I am basing the present description of the only Devonian species of *Heliolites* so far discovered in North America.

SYSTEMATIC DESCRIPTIONS

Phylum COELENTERATA

Class ANTHOZOA

Order TABULATA

Family Heliolitidae Lindstrom 1876

Genus *Heliolites* Dana

Heliolites Dana, 1846, p. 541.

Type species.—By original designation, *Astraea porosa* (Goldfuss), 1826, p. 64, Pl. XXI, Fig. 7, Middle Devonian, Eifel region, Germany.

Diagnosis.—Compound, hemispherical, pyriform, or subglobular tabulate corals having rounded autopores surrounded by smaller, angular or subrounded, siphonopores. Septa may be present in autopores; tabulae always present in both autopores and siphonopores.

***Heliolites relictus* Stumm, sp. nov.**

(Pl. I, Figs. 1-2.)

Description.—External features unknown. In transverse section, autopores circular, averaging about 1.5 mm. in diameter, relatively closely set, and having relatively thin walls. No traces of septa, septal ridges, or septal spines present on inner surfaces of walls of autopores. Siphonopores polygonal to subrounded, averaging about .2 mm. in diameter, with thin, smooth walls, and occurring in two to six rows between the autopores.

In longitudinal section, autopores with widely spaced, complete, horizontal tabulae averaging about 1.5 mm. apart. Siphonopores with very closely set, complete, horizontal tabulae averaging about .2 mm. apart.

Remarks.—The absence of septa in the autopores of *Heliolites relictus* easily distinguishes it from five of the six known European Devonian species of *Heliolites*. The type species *H. porosus* (Goldfuss) has short, thick septa in the autopores. *H. barrandei* Penecke and *H. vesiculosus* Penecke (1887, pp. 271–73), from the Middle Devonian of Austria, were redescribed and excellently illustrated by Kettnerová (1932, pp. 1–5); both have well-developed septa. *H. tenuoseptatus* Počta (1902, pp. 293–94), also redescribed and refigured by Kettnerová (1933, pp. 4–6), has long, thin septa. *H. praeporosus* Kettnerová (1933, pp. 1–3) has very long septa. These two last-mentioned species are from the Lower Devonian of the Bohemian Basin.

The sixth European Devonian species of *Heliolites*, with which *Heliolites relictus* might be confused, is *H. hanuši* Kettnerová (1933, pp. 6–8) from the Lower Devonian of Bohemia. In *H. hanuši* some autopores lack septa, but others have weakly developed, short, thin septa. Both types of pores are larger than in *H. relictus*. The autopores in *H. hanuši* average 2.3 mm. in diameter and the siphonopores .46 mm. The tabulae in the autopores are irregularly developed and twisted.

The four Silurian species from North America that resemble *Heliolites relictus* in lacking septa in the autopores can be distinguished from it by other structural differences. *H. occidentales* Stauffer (1930, p. 108) from the Silurian strata near Kearsarge, California, has very closely set, rather than widely spaced, tabulae in the autopores and fewer and larger siphonopores. *H. spongiosus* Foerste (1906, p. 303) from the Louisville and Waco limestones of Kentucky and the Brownsport formation of Tennessee has autopores with infolded walls and closely set tabulae. *H. distans* Foerste (1906, p. 305), from the same formations as *H. spongiosus*, has much more widely spaced autopores, with an average of ten rows of siphonopores between them, and closely set tabulae in the autopores. *H. nucella* Foerste (1906, p. 305), from the same formations as *H. spongiosus*, is easily distinguished from *H. relictus* for it has much more widely spaced and smaller autopores and more numerous and smaller siphonopores.

Occurrence.—Middle Devonian (Nevada limestone—1800 feet above base—*Heliolites* horizon of Merriam, 1940, p. 58), Frazier Creek, Roberts Mountains, Nevada.

Type.—Holotype No. 25311, Museum of Paleontology, University of Michigan.

LITERATURE CITED

- DANA, J. D. 1846. "Zoophytes" in United States Exploring Expedition under the Command of Charles Wilkes, U. S. N.
- FOERSTE, A. 1906. The Silurian, Devonian, and Irvine Formations of East-central Kentucky, with an Account of their Clays and Limestones. Kentucky Geol. Surv. Bull., 7.
- GOLDFUSS, G. A. 1826. Petrefacta Germaniae. Düsseldorf: Arnz and Co. Vol. 1.
- KETTNEROVÁ, M. 1932. Note on the Species *Heliolites barrandei* Penecke and *vesiculosus* Penecke. Z Věsníku Státního Geologického Ústavu Československé Republiky, Vol. 8, No. 6.
- 1933. The *Heliolites* of the Devonian of Bohemia. *Ibid.*, Vol. 9, No. 1.
- LAMBE, L. M. 1899. A Revision of the Genera and Species of Canadian Palaeozoic Corals. The Madreporaria Perforata and the Alcyonaria. Geol. Surv. Canada, Contrib. Can. Palaeontol., Vol. 4, Pt. 1.
- MERRIAM, C. W. 1940. Devonian Stratigraphy and Paleontology of the Roberts Mountains Region, Nevada. Geol. Soc. Amer., Special Paper No. 25.
- PENECKE, K. A. 1887. Ueber die Fauna und das Alter einiger paläozoischer Korallriffe der Ostalpen. Zeits. deut. Geol. Gesellsch., Vol. 39.
- POČTA, P. 1902. "Anthozaires et Alcyonaires" in J. Barrande, Systeme Silurien du Centre de la Boheme, Vol. 8, Pt. 2.
- STAUFFER, C. L. 1930. The Devonian of California. Univ. Calif. Publ. Geol. Sci., Vol. 19, No. 4.
- WAITE, R. H. 1953. Age of the "Devonian" of the Kearsarge Area, California. Bull. Geol. Soc. America, Vol. 64, No. 12, Pt. 2 (abstract).

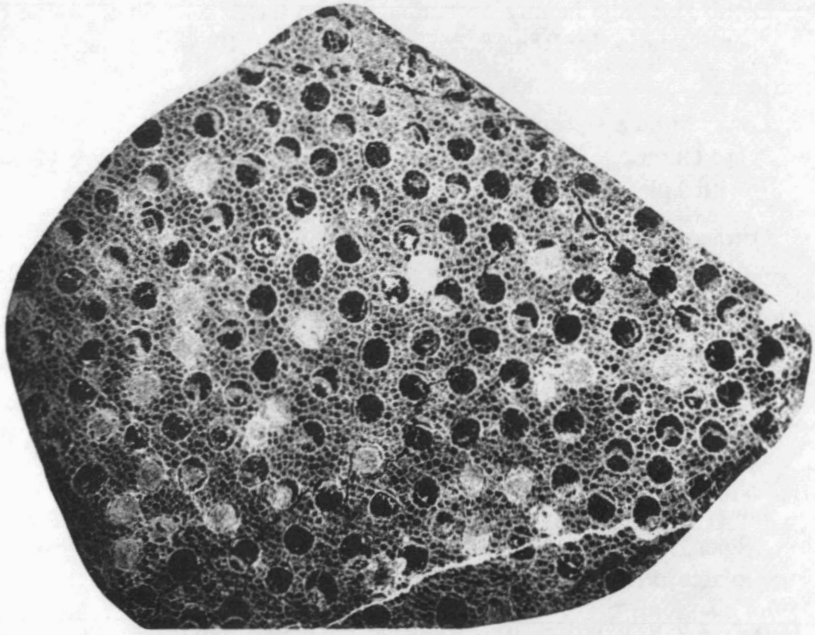
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PLATES

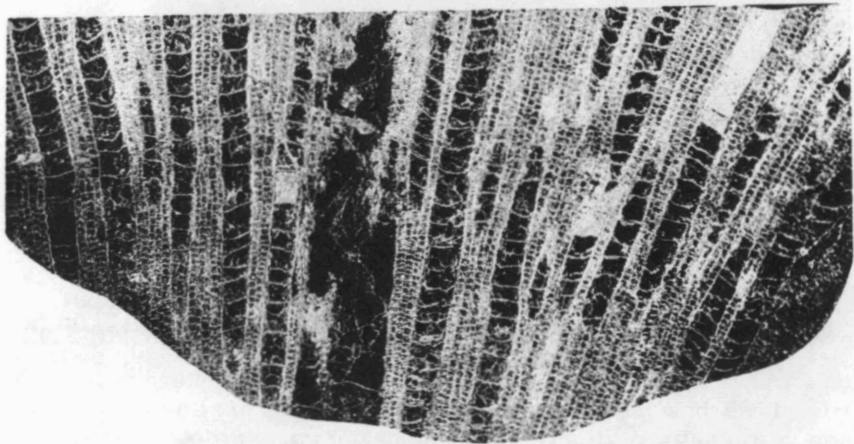
EXPLANATION OF PLATE I

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FIG. 1. Transverse section showing round, smooth-walled autopores and sub-polygonal siphonopores. Holotype No. 25311, Museum of Paleontology, University of Michigan, Middle Devonian (<i>Heliolites</i> horizon—1800 feet above base of Nevada limestone); Frazier Creek, Roberts Mountains, Nevada. $\times 3$.	
FIG. 2. Longitudinal section of original of Figure 1. Note the widely spaced tabulae in the autopores and the closely set tabulae in the siphonopores. $\times 3$.	

PLATE I



1



2

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