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THE OCCURRENCE OF THE CORAL GENERA  
*PSEUDOZAPHRENTOIDES* AND *LOPHAMPLEXUS*  
IN THE PENNSYLVANIAN OF OHIO<sup>1, 2</sup>

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ABSTRACT

Only two genera of solitary corals, *Lophophyllidium* and *Stereostylus*, were known previously from the Pennsylvanian in Ohio. Recent studies of solitary corals from Pennsylvanian strata in Ohio have recorded two genera, *Pseudozaphrentoides* and *Lophamplexus*, from the Vanport Limestone of the Allegheny division of the Pennsylvanian. This study enlarges the known Pennsylvanian coral genera and the geologic range of Ohio Pennsylvanian corals.

Pennsylvanian corals in Ohio have heretofore been studied only casually, and have been listed as species of *Cyathaxonia* by early investigators and of *Lophophyllum* by later investigators. The genus *Lophophyllidium* was established by Grabau in 1928, with *Cyathaxonia prolifera* McChesney as the genotype, and included those Pennsylvanian corals in Ohio that had previously been described as *Cyathaxonia* and *Lophophyllum*. Bassler (1950, p. 229) listed *Lophophyllidium profundum* (Edwards and Haime) as the only Pennsylvanian coral present in Ohio. A detailed study (Bebout, 1966) of the Ames and Brush Creek Limestones in Athens County, Ohio, showed that species of the genus *Stereostylus* are present. Some authors recognize only *Lophophyllidium*, stating that it is not possible to separate the two genera consistently (Rowett and Sutherland, 1964, p. 25).

Following Jeffords' (1947) morphological characters of Lophophyllidid corals, the two genera, *Lophophyllidium* and *Stereostylus*, can be separated in Ohio and have a known geological range in the Pennsylvanian System as shown in figure 1.

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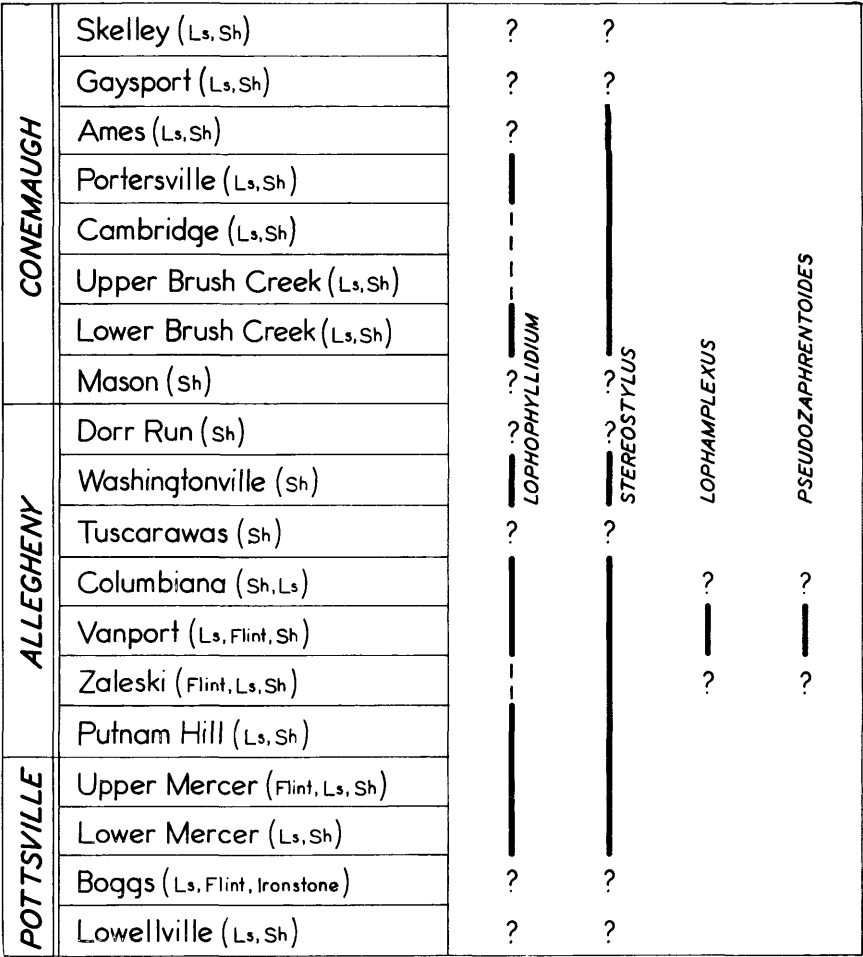
<sup>1</sup>This paper is in part from a thesis and from a paper presented before the Geology Section of the Ohio Academy of Science at Central State College, April 26, 1963.

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Recent unpublished studies of Ohio Pennsylvanian corals (Colson, 1963) have added two new genera of solitary corals, not described previously in Ohio. These genera, *Pseudozaphrentoides* and *Lophamplexus*, have known occurrences in the Vanport Limestone member of the Allegheny division of the Pennsylvanian

FIGURE 1  
KNOWN GEOLOGIC RANGE OF OHIO PENNSYLVANIAN CORALS



KNOWN ————— PROBABLE - - - - - UNCERTAIN ?

System. Species of *Lophophyllidium* and *Stereostylus*, on the other hand, occur throughout most of the Pottsville, Allegheny, and Conemaugh.  
I am grateful to Dr. Myron T. Sturgeon of Ohio University for suggesting this problem and for guidance and encouragement throughout the study.

SYSTEMATIC PALEONTOLOGY

Family Lophophyllididae—Moore and Jeffords, 1945

**LOPHAMPLEXUS** spp.—Moore and Jeffords, 1941

The characteristics of this genus are solitary conical to subcylindrical curved

corallites, having a moderately thick theca with longitudinal grooves and growth lines. The internal features show an axial column with a median lamina, inosculating tabulae, and septa which join near to or at the column in the immature part of the corallite. In the mature part of the corallite, the axial column is discontinuous, and tabulae extend across the corallite when the column is absent.

*Discussion*—The genotype is *Lophamplexus eliasi*, Moore and Jeffords, from the Foraker and Beattie Limestones of the Wolfcamp series, Lower Permian of Kansas and Oklahoma. Moore and Jeffords (1941, p. 91) state that *Lophamplexus* is related to or derived from an ancestor belonging to the genus *Lophophyllidium*. This was before *Stereostylus* was recognized as distinct from the genus *Lophophyllidium*. *Lophamplexus* is now considered to be more closely related to *Stereostylus*, but occurs associated with both *Stereostylus* and *Lophophyllidium* in the Vanport Limestone.

### LOPHAMPLEXUS sp.

Plate 1, Figures 6a–6c

The corallite is conical and slightly curved, with a thin (.04 mm) theca which has septal grooves and interseptal ridges. The length of the corallite is 23 mm and the diameter is about 11 mm near the calyx, which is partially destroyed. Septa are of various lengths and crooked throughout the corallite. In the immature region, the septa reach the column in the counter quadrants, but in the cardinal quadrants, the septa appear to join the alar septa. In the mature part of the corallite, the septa extend only one-half the distance towards the axial region and terminate upon contacting tabulae. Minor septa are present in the mature region. The counter septum is the longest septum throughout the corallite, and the cardinal septum is the shortest. A cardinal fossula is present. The axial column is oval in the immature region and joined to the counter septum. The column is absent in the mature region. Transverse sections show that tabulae are present throughout the corallite.

*Discussion*—This specimen is very similar to species of *Stereostylus*, except for the discontinuous axial column in the mature region and the tabulae extending across the corallite when the column is absent. *Lophamplexus* differs from specimens of *Lophophyllidium* in that it lacks an axial column in the mature region. The column of *Lophamplexus* is not as robust, radiating laminae are absent, more tabulae are present, and the septa are not noticeable rhopaloid shaped. Specimens from only one locality in Ohio showed the characteristics of the genus *Lophamplexus*.

*Occurrence*—Vanport Limestone—An abandoned quarry on top of hill in the NW $\frac{1}{4}$  of Section 30, Pike Township, Stark County, Ohio.

*Repository*—The Ohio State University, Number 24425.

Family Cyathopsidae—Dybowski, 1873

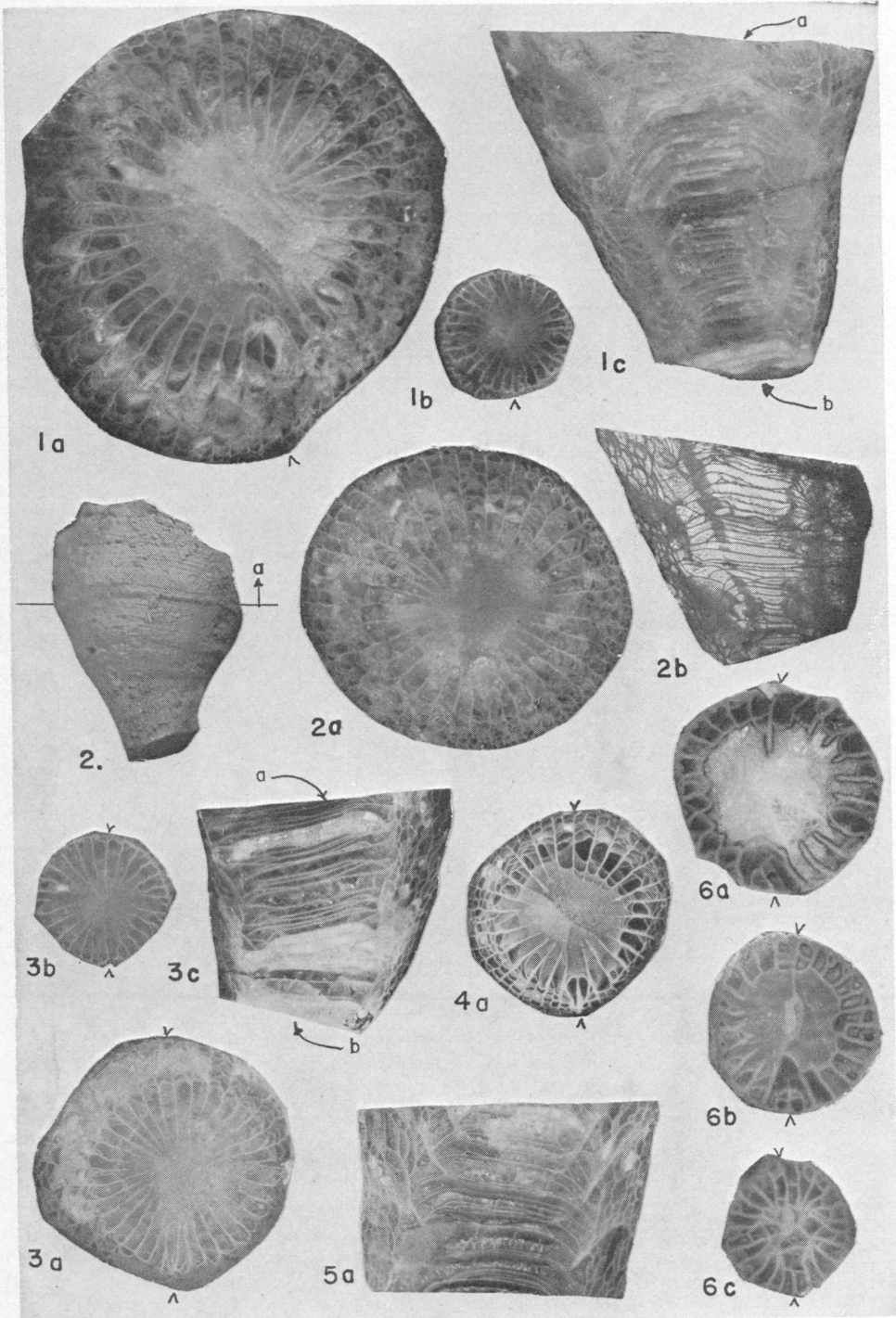
**PSEUDOZAPHRENTOIDES** spp.—Stuckenberg, 1904

The genus *Pseudozaphrentoides* is characterized by solitary corals having a shape varying from cylindrical to conical near the apex. The theca is thin and,

### EXPLANATION OF PLATE I

FIGURES 1a–5a. *Pseudozaphrentoides* sp., 1a, 1b, Transverse sections; 1c, longitudinal section, all  $\times 2$ , OSU #24426; 2, External view  $\times 1$ ; 2a, transverse section  $\times 2$ ; 2b, longitudinal section  $\times 2$ , OSU #24427; 3a–3b, Transverse sections; 3c, longitudinal section, all  $\times 2$ , OSU #24428; 4a, transverse section  $\times 2$ , OSU #24430; 5a, longitudinal section,  $\times 2$ , OSU #24431; Locality—Vanport Limestone, Carbon Limestone Company, one-half mile south of Lowellville, SE $\frac{1}{4}$  Poland Township, Mahoning County, Ohio.

FIGURES 6a–6c. *Lophamplexus* sp., 6a–6c, Transverse sections,  $\times 3$ , OSU #24425; Locality—Vanport Limestone, NW $\frac{1}{4}$ , Section 30, Pike Township, Stark County, Ohio.



in well-preserved specimens, is marked with fine growth lines and coarse wrinkles (Plate 1, fig. 2). Septa are long throughout the corallite and reach the center only in the immature region. The counter septum is of the same length as other major septa and is therefore hard to distinguish. The cardinal septum is short and lies in an open fossula (Plate 1, fig. 4a) in the immature part of the corallite. In the mature part of the corallite, all septa are of about equal length. Alar pseudofossulae may be present, but are hard to distinguish. Minor septa are present in some specimens. A dissepimental zone is well developed; septa are thin, but continuous through it. Tabulae are numerous and closely spaced, complete or incomplete, and are arching or subhorizontal from the peripheral interdissepimental zone. There is no axial column.

*Discussion*—There is still much discussion concerning the family and generic classification of corals with the above characteristics. *Caninia*, *Campophyllum*, and *Cyathophyllum* are the more common generic names that in part have been included in the genus *Pseudozaphrentoides*. Discussions of the problem and history concerning the family and generic names are given by Easton (1944 B, p. 119–132), Moore and Jeffords (1945, p. 143–147), Sutherland (1958, p. 62–64, 66, 67), and Rowett and Sutherland (1964, p. 66).

### PSEUDOZAPHRENTOIDES sp.

Plate 1, figures 1a–5a

This is the largest known Pennsylvanian solitary coral in Ohio, the largest observed specimen being 60 mm in length and 40 mm in diameter. The shape is conical to cylindrical. The theca is thin and marked by fine growth lines and coarse wrinkles. Other external features were not observed.

The internal features include about 36 major septa reaching approximately three-fourths of the distance to the center in the mature region. These septa are thin and slightly crooked in the dissepiment zone (Plate 1, figs. 1a, 2a, and 3a). In the immature region, septa are thicker than in the mature region and extend almost to the center of the corallite (Plate 1, figs. 1b and 3b). Minor septa are short and cross three or more rows of dissepiments (figs. 2a and 4a). Protosepta are difficult to distinguish, but a weak cardinal fossula identifies the cardinal septum in the more immature region (Plate 1, figs. 3c and 5a) and tabulae are complete or anastomosing. These tabulae rise from the interdissepimental zone and flatten out across the center of the corallite. More than one flattened tabula may originate from a tabula rising from the peripheral interdissepimental zone. There is no axial column.

*Discussion*—This species is closely allied to the holotype (U.S. Nat. Mus. No. 17953) and the section of the plesiotype (U.S. Nat. Mus. Lot No. 6839) of *Caninia torquia* figured by Easton (1944, p. 119–132). Specimens of *Caninia torquia* are larger and have more septa relative to the diameter than the species described in this paper. A comparison could be made with *Pseudozaphrentoides ordinatus* (Ross and Ross, 1962, p. 1178) in the number of septa in relationship to width, size, and nature of dissepiments and tabulae. However, this species is not as large, nor do the external features compare with *Pseudozaphrentoides ordinatus*. Those species of *Pseudozaphrentoides* described by Moore and Jeffords (1945) differ from this species in being either larger or smaller and in the number of septa relative to the diameter of the corals. Rowett and Sutherland (1964, p. 66) state that Moore and Jeffords' specimens of *Pseudozaphrentoides* might belong to the genus *Koninckophyllum* because of the presence of a faint axial column in the immature region.

*Occurrence*—Vanport Limestone, Carbon Limestone Company, one-half mile south of Lowellville, SE $\frac{1}{4}$  Poland Township, Mahoning County, Ohio.

*Repository*—The Ohio State University, Numbers 24426, 24427, 24428, 24430 and 24431.

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