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NORTH AMERICAN GENERA OF THE DEVONIAN  
RUGOSE CORAL FAMILY DIGONOPHYLLIDAE

BY  
ERWIN C. STUMM



MUSEUM OF PALEONTOLOGY  
THE UNIVERSITY OF MICHIGAN  
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INTRODUCTION

THE DIGONOPHYLLIDAE represent a family of typically simple rugose corals in which the septa have become degenerate and, instead of being truly lamellar, exist as radiating series of crests on successive layers of dissepiments and tabellae. If these crests become thickened and in lateral contact they form nested septal cones marking successive positions of the calyx. With each rejuvenescence a new series of crests or a new cone is developed. In longitudinal sections these cones are easily

recognized as superposed cone-shaped zones of stereoplasm either in vertical contact or separated by zones of tabellae or tabellae and dissepiments. In a few forms the septal cones or crests have become degenerate and in one genus they have disappeared. The dissepimentarium of the digonophyllid corals is typically composed of elongate or globose dissepiments which are distally and axially inclined. In some forms the dissepiments have been suppressed by excessive development of septal cones. The tabulae are typically broken up into distally convex tabellae in most forms, but may be relatively complete in others. In the subfamily Zonophyllinae the septal crests or cones are vertically discontinuous and it appears that all the North American genera here considered belong in this subfamily. Most of the North American species of digonophyllid corals have been referred to the genus *Cystiphyllum* but from which they are distinct. *Cystiphyllum* is a Silurian genus in which degenerate acanthine septa are present and septal cones are never developed.

In this paper eight genera of digonophyllid corals having North American species are recognized. One of the genera is new. The type species is described and illustrated in most of the genera and a few other characteristic species are described and illustrated. All the North American species are of Middle Devonian (Onondaga or Hamilton) age.

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I wish to thank Dr. L. B. Kellum, Dr. C. A. Arnold, and Dr. R. V. Kesling for critically reviewing the manuscript.

Repositories in which type specimens are located are as follows:

- AMNH: American Museum of Natural History, New York City
- EMP: École des Mines, Paris
- MCZ: Museum of Comparative Zoology, Harvard University
- NMC: National Museum of Canada, Ottawa, Ontario
- NYSM: New York State Museum, Albany, New York
- UMMP: Museum of Paleontology, The University of Michigan

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## SYSTEMATIC DESCRIPTIONS

## Phylum COELENTERATA

## Class ANTHOZOA

## Order RUGOSA

## Suborder CYSTIPHYLLINA

## Family Digonophyllidae Wedekind

## Subfamily Zonophyllinae Wedekind

Genus *Bucanophyllum* Ulrich

*Bucanophyllum*, Ulrich, 1886, p. 31.

*Type species*.—By monotypy, *B. gracile* Ulrich, 1886, pp. 31–32, Pl. 3, Figs. 9–9C = *Cystiphyllum ohioense* Nicholson, 1875a, p. 31, Pl. 1, Figs. 2–2a.

*Diagnosis*.—Small, trumpet-shaped rugose corals having a cylindrical basal part rapidly expanding into a funnel-shaped upper part which forms the calyx. Interior typically with one row of dissepiments crossed by fine, radiating septal crests. Tabulae apparently absent.

*Bucanophyllum ohioense* (Nicholson)

(Pl. II, Figs. 3–4)

*Cystiphyllum ohioense* Nicholson, 1875a, p. 31, Pl. 1, Figs. 2–28; 1875b, p. 234, Pl. 23,

Figs. 4–4a; Davis, 1887, Pl. 125, Figs. 12–13; Stewart, 1938, p. 55, Pl. 10, Figs. 5–8.

*Bucanophyllum gracile* Ulrich, 1886, p. 31, Pl. 3, Figs. 9–9c; Stumm, 1949, Pl. 19,

Figs. 14–15.

*Cystiphyllum prostratum* Herzer, 1902, p. 51, Pl. 5, Fig. 6.

*Description*.—Corallum simple, small, typically with a narrow cylindrical basal part 2–3 mm in diameter and ranging from 2 mm to 1.5 cm long, above which the corallite expands rapidly to produce a funnel-shaped or bell-shaped calyx 1 to 2 cm in diameter. Calyx wall very thin, composed of septal crests and a single row of dissepiments. In a few specimens two or three rows of dissepiments present in parts of corallum. Tabulae and tabellae apparently absent. Base of calyx coincides with base of expanded part of corallite in most specimens. Cylindrical tube forming basal part of corallite apparently hollow.

*Remarks*.—*Bucanophyllum ohioense* differs from typical species of *Cystiphyllodes* by the growth form and by the lack of a tabulate area.

*Occurrence*.—Middle Devonian, Columbus limestone, Ohio; Jeffersonville limestone, above coral zone, southern Indiana and northern Kentucky.

*Types*.—Nicholson's syntypes not located; Davis' hypotypes MCZ 78078; Stewart's hypotypes in OSU; hypotype herein illustrated UMMP 37742; Ulrich's type of *B. gracile* AMNH 24249; types of *C. prostratum* Herzer not located.

Genus *Cayugaea* Lambe

*Cayugaea* Lambe, 1901, p. 196.

*Type species*.—By original designation and monotypy *Cayugaea whiteavesiana* Lambe, 1901, pp. 196–97, Pl. 18, Figs. 4, 4a–b (indicated as *C. vetusta* on p. 196 but corrected to *C. whiteavesiana* in addenda and corrigenda).

*Diagnosis*.—Simple subcylindrical rugose corals with a distinct tabularium and a wide dissepimentarium. No septa, septal crests, or septal cones present. A stereoplasmic wall may be present between the tabularium and the dissepimentarium.

*Remarks*.—Wang (1950, p. 226) believed this genus to be synonymous with *Diplochone* but the two are distinct in the character of the dissepimentarium. In addition, *Diplochone* possesses septa and *Cayugaea* has no traces of them.

*Cayugaea whiteavesiana* Lambe

(Pl. IV, Figs. 8–9)

*Description*.—Corallum simple, subcylindrical. The holotype, the only known specimen, is incomplete, lacking both base and calyx. The specimen measures about 12 cm long with a maximum diameter of about 7 cm. Exterior with closely spaced annulations representing calycinal rejuvenations and separated by distances averaging about 1 cm apart. In transverse section dissepimentarium averaging 2 cm wide, composed of interspersed large and small dissepiments. No trace of septal crests present. Tabularium showing peripheral wall and intercepted parts of inclined tabulae. In longitudinal section tabularium averaging 2 cm wide composed of closely set, incomplete, convex or concave tabulae breaking down into inclined tabellae in parts of corallum margin of tabularium bounded by a wall of stereoplasm ranging from 2 to 3 mm thick. Dissepimentarium composed of large and small dissepiments, all relatively elongate and convex distally and axially. No trace of septal cones present.

*Occurrence*.—Middle Devonian, lower Onondaga limestone, Cayuga, Ontario, Canada.

*Type*.—Holotype (the only known specimen) NMC 4690.

*Cayugaea subcylindrica*, sp. nov.

(Pl. II, Fig. 5; Pl. IV, Figs. 1–2)

*Description*.—Corallum simple, subcylindrical. Holotype incomplete, 9.5 cm long and with a maximum diameter of 3.1 cm. Exterior with very prominent calycinal rejuvenations spaced at an average distance of about

1 cm apart. Calyx not preserved. In transverse section tabularium distinct, 1.6 to 1.8 cm wide, composed of irregularly inclined tabulae. Dissepimentarium well defined about .6 cm wide, composed of interspersed large and small dissepiments. No trace of septal crests present. In longitudinal section tabulae irregularly spaced, complete and incomplete, inclined in various positions. Dissepiments typically large, elongate, axially inclined.

*Remarks.*—The species differs from *C. whiteavesiana* Lambe by its narrower form, and by the lack of a definite wall separating the tabularium from the dissepimentarium. Also the dissepimentarium is smaller in proportion to the tabularium and the dissepiments are arranged vertically instead of diagonally.

*Occurrence.*—Middle Devonian, Jeffersonville limestone, coral zone, Falls of the Ohio, Jeffersonville, Indiana.

*Type.*—Holotype UMMP 34218.

Genus *Cladionophyllum*, gen. nov.

*Type species.*—*Cystiphyllum cicatriciferum* Davis, 1887, *partim*, Pl. 125, Fig. 10 only.

*Diagnosis.*—Simple, club-shaped corals with a broad basal attachment talon, a cylindrical proximal part and a pyriform or oval distal part. Calyxes funnel-shaped. Interior filled with dissepiments, tabellae, and well-developed septal cones.

*Cladionophyllum cicatriciferum* (Davis)

(Pl. III, Figs. 1-2; Pl. VI, Figs. 1-3)

*Cystiphyllum cicatriciferum* Davis, 1887 *partim*, Pl. 125, Fig. 10, *non* Fig. 11 which is *C. crassatum* Greene.

*Cystiphyllum os* Davis 1887, Pl. 130, Figs. 6-7.

*Description.*—Corallum simple, shaped like a club, broadly pyriform distally, with a long, narrow, cylindrical proximal part terminating in a broad basal attachment scar. Length from 15 to 20 cm; maximum diameter of distal part 6 cm. Exterior of distal part with closely set calycinal rejuvenescences, calyx funnel-shaped filled with dissepiments and tabellae crossed by septal crests. In transverse section dissepiments small and globose, tabellae larger, irregularly arranged. Septal cones represented by solid concentric bands of stereoplasm. In transverse section through proximal part tabularium apparently open and septal cones closely set in dissepimentarium. In longitudinal section of lower part of pyriform part, dissepimentarium relatively wide with elongate dissepiments. Tabularium composed of incomplete horizontal or concave tabellae. Boundary between

tabularium and dissepimentarium indistinct. Septal cones prominent, separated by distances ranging from 2 to 5 mm.

*Remarks.*—This peculiar species has been placed in a new genus because of its unusual growth form and its well-developed septal cones. Davis' type is incomplete distally and his specimens of *Cystiphyllum os* are broken proximal fragments of *C. cicatriciferum*. The Michigan specimen is the only most nearly complete one seen.

*Occurrence.*—Middle Devonian, Jeffersonville limestone, coral zone, Falls of the Ohio, southern Indiana and northern Kentucky.

*Types.*—Davis' lectotype MCZ 7754; Davis types of *C. os*, MCZ 7758–9; hypotype herein illustrated UMMP 34285.

### Genus *Coleophyllum* Hall

*Coleophyllum* Hall, 1883, p. 317; 1884, p. 463.

*Type species.*—By subsequent designation of S. A. Miller, 1889, p. 179, *Coleophyllum romingeri* Hall, 1883, p. 317, Pl. 24, Figs. 8–9; 1884, p. 463.

*Diagnosis.*—Simple subcylindrical to rugose corals with a broad basal attachment scar. Exterior showing closely set rings of calycinal rejuvenescence. Calyxes funnel-shaped. Septa thick, in lateral contact, formed as successive nested cones, each cone forming sides and base of calyx at each rejuvenescence. Tabulae and dissepiments completely suppressed. Septa slightly attenuate along periphery, forming vertical ridges.

### *Coleophyllum romingeri* Hall

(Pl. II, Fig. 8; Pl. III, Figs. 4–5; Pl. V, Figs. 1–2)

*Coleophyllum romingeri* Hall, 1883, p. 317, Pl. 24, Figs. 8–9; 1884, p. 463; Stumm 1949, Pl. 24, Fig. 16.

*Cystiphyllum plicatum* Davis, 1887 *partim*, Pl. 100, Fig. 13; probably also Pl. 12a, Fig. 3, and Pl. 130, Figs. 4–5.

*Description.*—Corallum subcylindrical to ceratoid with a broad, palmate basal attachment talon. Exterior with closely set horizontal ridges representing the margins of successive septal cones. Calyxes funnel-shaped, marked by ridges of thickened septa. In transverse section, septa thick in lateral contact, appearing as concentric bands representing intercepted edges of nested cones. In longitudinal sections cones of thickened septa distinct. Dissepiments and tabulae apparently completely suppressed.

*Remarks.*—Hall's holotype (Pl. III, Fig. 4) was unfortunately chosen as it has been weathered completely to the axis on one side. This has caused misinterpretation of the genus by subsequent authors. Davis' specimen (Pl. II, Fig. 8) is relatively complete, but unusual weathering of



the periphery has caused the narrow interseptal spaces to be filled in by silicification and they appear as spines, giving the edge of each septal cone a serrated appearance.

*Occurrence.*—Middle Devonian, Jeffersonville limestone, coral zone, Falls of the Ohio, Jeffersonville, Indiana.

*Types.*—Holotype NYSM 3220/1; Davis types of *Cystiphyllum plicatum* MCZ 7740–7743; hypotype herein illustrated UMMP 34216.

Genus *Cystiphylloides* Chapman

*Cystiphylloides* Chapman, 1893, p. 46; Yoh, 1937, pp. 50, 53 (as a new genus); Stumm, 1949, p. 39.

*Type species.*—By original designation and monotypy, *Cystiphyllum aggregatum* Billings.

*Diagnosis.*—(Stumm, 1949, p. 39). . . . "Simple or weakly aggregate, subcylindrical to ceratoid corals with a characteristic bell-shaped calyx and a heavy, horizontally wrinkled epitheca. Calyx filled with dissepiments that are crossed by radiating septal striae. Periodic rejuvenescence causes septal cones to be present at varying vertical distances apart. In transverse section these appear as concentric bands of short septal crests. Dissepimentarium is wide and composed of many small inclined dissepiments. Tabularium centrally located, narrow, composed of closely set, usually distally convex tabellae."

*Cystiphylloides aggregatum* (Billings)

(Pl. IV, Fig. 3; Pl. V, Fig. 5)

*Cystiphyllum aggregatum* Billings, 1859, p. 137, text-fig. 28; Lambe, 1899, p. 225; 1901, pp. 193–94, Pl. 18, Fig. 3.

*Cystiphyllum fruticosum* Nicholson, 1875b, p. 73, Pl. 1, Figs. 3–3a.

*Cystiphylloides aggregatum* Chapman, 1893, p. 46.

*Description.*—Corallum phaelloid, corallites typically cylindrical attached at bases, and, in some specimens, laterally by talons. Diameters of corallites ranging from 1 to 3 cm. Exteriors heavily annulated. Calyxes apparently funnel-shaped. In transverse section no boundary can be seen between dissepimentarium and tabularium. Septal crests thickened, forming irregularly shaped concentric bands. In longitudinal section tabularium very wide, composed of large and small distally convex tabellae. Dissepimentarium very narrow, composed of axially convex dissepiments. No distinct boundary present between tabularium and dissepimentarium. Septal cones well defined, separated by distances ranging from .5 cm to 2 cm.

*Remarks.*—This is a relatively uncommon species and for this reason *Cystiphyloides* has been typically interpreted on the common Hamilton species *C. americanum* (Edwards and Haime). The present figures are the first showing the internal structures of *C. aggregatum*. The species differs from *C. americanum* in the phaceloid habit, the better developed septal cones, and the lack of a boundary between the tabularium and the dissepimentarium.

*Occurrence.*—Middle Devonian, lower Onondaga limestone, western New York and southwestern Ontario.

*Types.*—Billing's holotype and Lambe's hypotypes in NMC; hypotype herein illustrated UMMP 37752.

*Cystiphyloides americanum* (Edwards and Haime)

(Pl. II, Figs. 6-7; Pl. VI, Figs. 4-8)

*Cystiphyllum americanum* Edwards and Haime, 1851, p. 464, Pl. 13, Figs. 4-4a (for synonymy see Lambe, 1901, p. 192, items 2, 4, 7-8, 10-12).

*Cystiphyloides americanum* Stumm, 1949, p. 39.

*Remarks.*—This common species has been adequately described by several authors. The illustrations show external form and the typical internal structures including the distinct tabulate and dissepimental areas and the imperfectly developed septal cones.

*Occurrence.*—Middle Devonian Hamilton group, New York, northern Appalachians, and southwestern Ontario; Traverse group, Michigan; Logansport and Beechwood limestones, Indiana and upper Middle Devonian limestones in Illinois and Missouri.

*Types.*—Holotype EMP; hypotypes herein illustrated UMMP 5361, 20592, 20604, 13843, and 37753.

Genus *Diplochone* Frech

*Diplochone* Frech, 1886, pp. 219-220.

*Type species.*—By monotypy, *Diplochone striata* Frech, 1886, p. 106, 2 text figs. on p. 105; 1 text fig. on p. 106, Pl. 19, Fig. 2.

*Diagnosis.*—Simple, typically ceratoid rugose corals with a well-developed tabularium, short, peripheral septal ridges which become spinose and discontinuous in later growth stages, and a narrow dissepimentarium appearing in later growth stages.

*Remarks.*—The type species is known from the upper *Stringocephalus* zone (Roseisenstein) near Odorf and Blanken in the Eifel region of western Germany. Other species are known from eastern Europe and China. The only known North American species is described below.

*Diplochone greenei* (Miller)

(Pl. III, Fig. 3; Pl. IV, Figs. 4-7)

*Cystiphyllum greenei* Miller, 1892, p. 4, Pl. 1, Fig. 4; 1894, p. 258, Pl. 1, Fig. 4.

*Description.*—Corallum simple, subcylindrical to narrowly ceratoid with repeated calycinal rejuvenescences relatively evenly spaced from 2 to 3 cm apart. Specimens with a maximum length of 25 cm and a maximum diameter of about 4 cm. Calyxes funnel-shaped with thick peripheral septal ridges. In neanic stage transverse section shows peripheral septal ridges and intercepted edges of inclined tabulae. Longitudinal section shows complete and incomplete, horizontal or proximally convex tabulae occupying entire interior. In ephebic stage transverse section shows narrow peripheral dissepimentarium averaging about 3 mm wide composed of relatively small dissepiments pierced by discontinuous septal crests. In longitudinal section wide tabularium composed of proximally convex complete and incomplete tabulae, narrow dissepimentarium composed of elongate dissepiments pierced by septal spines.

*Occurrence.*—Middle Devonian, Jeffersonville limestone, coral zone, Falls of the Ohio, Jeffersonville, Indiana.

*Types.*—Holotype AMNH 25237; hypotype UMMP 34217.

Genus *Edaphophyllum* Simpson*Edaphophyllum* Simpson, 1900, p. 221.

*Type species.*—*Cystiphyllum bipartitum* Hall.

*Diagnosis.*—Simple, ceratoid or trochoid corallites with erect or oblique funnel-shaped calyxes. A marked bilateral symmetry produced in calyxes by a thickened, elevated counter septum and a narrow cardinal fossula. Other septa relatively well developed forming septal cones separated by zones of tabellae.

*Edaphophyllum bipartitum* (Hall)

(Pl. I, Fig. 1)

*Cystiphyllum bipartitum* Hall, 1882, p. 55; 1884, p. 459.*Cystiphyllum constrictum* Greene, 1899, p. 30, Pl. 10, Figs. 9-12.*Edaphophyllum bipartitum* Simpson, 1900, p. 221.

*Description.*—Corallum simple, subcylindrical to ceratoid, irregularly twisted, with a relatively smooth but distinctly annulated epitheca. Length of holotype 10 cm; maximum diameter 3.5 cm, calyx funnel-shaped. Counter septum thick, elevated, forming a distinct ridge between periphery and axes. Cardinal fossula narrow, relatively shallow. Metasepta as thick-

ened ridges in calyx. Internally, septa form successive cones separated by 2 to 3 rows of distally convex tabellae.

*Remarks.*—This species has not been recognized by subsequent authors because the holotype had not been figured and had been presumed lost.

*Occurrence.*—Middle Devonian, Jeffersonville limestone, coral zone, southern Indiana and northern Kentucky.

*Types.*—Holotype NYSM 11142; Greene's types of *C. constrictum* AMNH 23487–90.

*Edaphophyllum bifurcatum* (Hall)

(Pl. I, Figs. 2–4; Pl. V, Figs. 6–9)

*Cystiphyllum bifurcatum* Hall, 1882, p. 55; 1884, p. 459.

*Cystiphyllum muricatum* Hall, 1882, p. 56; 1884, p. 460.

*Cystiphyllum obliquum* Hall, 1882, p. 58; 1884, p. 462.

*Coleophyllum pyriforme* Hall, 1883, p. 318, Pl. 24, Fig. 10; 1884, p. 464.

*Cystiphyllum sulcatum* Davis, 1887, Pl. 125, Figs. 1–3; *non C. sulcatum* Billings, 1859.

?*Cystiphyllum perlamellosum* Herzer, 1902, p. 50, Pl. 5, Fig. 4.

*Description.*—Corallum simple, similar in external appearance to *Edaphophyllum bipartitum* (Hall) except shorter; wide ceratoid to trochoid to pyriform. Exterior with closely set annulations. Calyx relatively shallow, cup-shaped or bowl-shaped. Counter septum on convex side of corallum, forming a narrow, elevated ridge; cardinal fossula narrow, shallow. Metasepta thin, more numerous than in *E. bipartitum*; major extending to axis, minor half way down calyx wall, becoming attached to neighboring major septa at their axial ends. Internal structures consisting of successive septal cones separated by zones of distally convex tabellae.

*Occurrence.*—Middle Devonian, Jeffersonville limestone, coral zone, southern Indiana and northern Kentucky.

*Types.*—Syntypes not located; hypotypes herein illustrated, UMMP 5356, 34218–20, and 34288; Davis' types of *C. sulcatum*, MCZ 7769–71.

*Edaphophyllum sulcatum* (Billings)

(Pl. I, Figs. 5–7)

*Cystiphyllum sulcatum* Billings, 1859, p. 136; Rominger, 1876, pp. 139–40, Pl. 50, Fig. 3.

*Cystiphyllum* (*Chonophyllum*) *sulcatum* Hall, 1876, Pl. 32, Figs. 16–20.

*Chonophyllum* (?) *sulcatum* Fenton and Fenton, 1938, pp. 233–34, Pl. 24, Figs. 8–9 (reillustration of Hall's Figs. 19–20)

*Description.*—Corallum simple, curved ceratoid. Epitheca distinctly annulated. Calyx oblique, typically relatively shallow, bowl-shaped. Cardinal fossula on convex side of corallum, very prominent, deep, and wide. Cardinal septum typically present in base of fossula. Counter septum not

distinguishable from metasepta. Altar septa enlarged or depressed in some specimens. All metasepta prominent, thick, extending to, or nearly to, axis. Internal structures similar to those of *E. bifurcatum*, consisting of successive septal cones separated by a few rows of tabellae.

*Remarks.*—*E. sulcatum* has a reverse symmetry to that of *E. bifurcatum*. In the former the cardinal fossula is on the convex side of the corallum and in the latter on the concave side. The lack of an elevated counter septum in the former species is an additional distinguishing feature. In internal structure the two species appear to be quite similar.

*Occurrence.*—Middle Devonian, lower Onondaga limestone of New York and southwestern Ontario; Bois Blanc formation of Michigan.

*Types.*—Syntypes NMC 3439*a*; Rominger's hypotypes UMMP 8611*a*, *b*, *c*; original of Hall's Fig. 18 AMNH 4140/1, others of Hall's hypotypes not located.

#### Genus *Skoliophyllum* Wedekind

*Skoliophyllum* Wedekind 1937, p. 52, text-fig. 2 on p. 50, Pl. 7.

*Type species.*—By subsequent designation of Lang, Smith, and Thomas, 1940, p. 118, *Cyathophyllum lamellosum* Goldfuss, 1826, p. 58, Pl. 18, Figs. 3*a*–*b*, Middle Devonian, Eifel district, Germany.

*Diagnosis.*—Simple cystiphylloid rugose corals in which calycinal rejuvenation is lateral instead of vertical producing an oblique corallite. Calyxes flat, typically with weakly defined septal crests. Interior filled with dissepimental tissue.

#### *Skoliophyllum squamosum* (Nicholson)

(Pl. I, Figs. 8–12)

*Cystiphyllum squamosum* Nicholson, 1875*a*, p. 31, Pl. 1, Figs. 4–4*b*; 1875 *b*, Pl. 1, Figs. 4–4*b*; Davis, 1887, Pl. 125, Figs. 4–6; Stewart, 1938, p. 56, Pl. 10, Figs. 10–12.

*Cystiphyllum expansum* Greene, 1901, p. 45, Pl. 17, Figs. 6–8.

*Cystiphyllum discoideum* Herzer, 1902, p. 49, Pl. 4, Fig. 1.

*Cystiphyllum retrorsum* Herzer, 1902, p. 49, Pl. 4, Fig. 2.

*Description.*—Corallum simple, typically subdiscoid with closely superposed calyxes, each successive one partly offset to the previous one in a constant direction. Calyxes relatively flat with slightly reflexed margins and slightly depressed axial areas. Occasional specimens with a deeper, funnel-shaped calyx. Septal crests moderately thick, radially arranged, extending to axis.

*Remarks.*—All specimens of this species that I have examined are completely silicified and in most of them beekite completely obliterates

the structures. It has been impossible to obtain sections showing internal structures. Internal structures of a specimen of the type species, *S. lamellosum* (Goldfuss), (see Pl. II, Figs. 1–2 and Pl. V, Figs. 3–4) are composed entirely of dissepiments and tabellae with a little stereoplasmic thickening in the basal part of the corallum.

*Occurrence.*—Middle Devonian, Columbus limestone, Ohio; Jeffersonville limestone, above coral zone, Falls of the Ohio, Jeffersonville, Indiana.

*Types.*—Repository of Nicholson's syntypes unknown; Davis' hypotypes MCZ 7776–7778; Greene's types of *C. expansum* AMNH 23577–23579; hypotypes herein illustrated UMMP 5358, 37741, and 37740.

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PLATE I

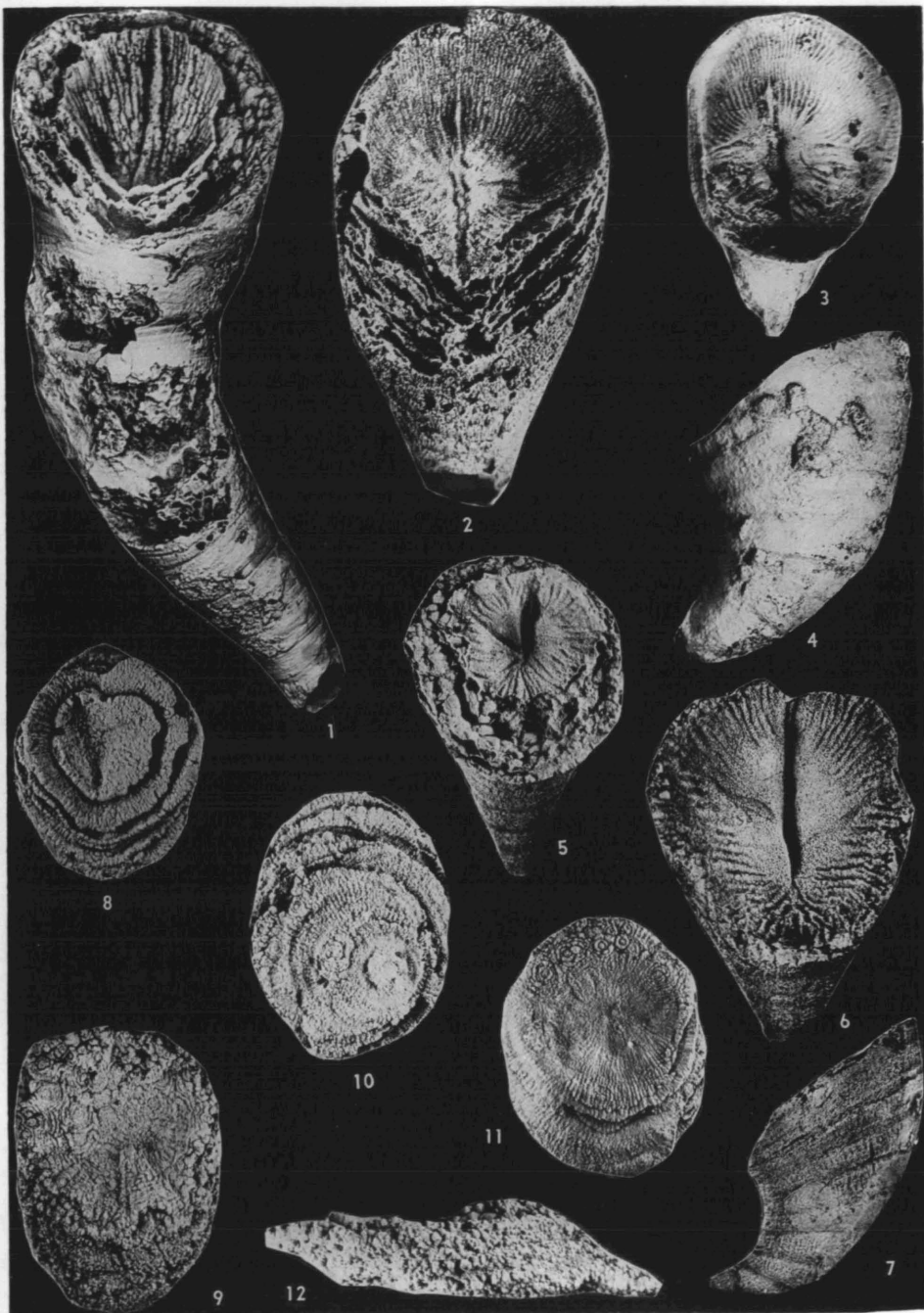
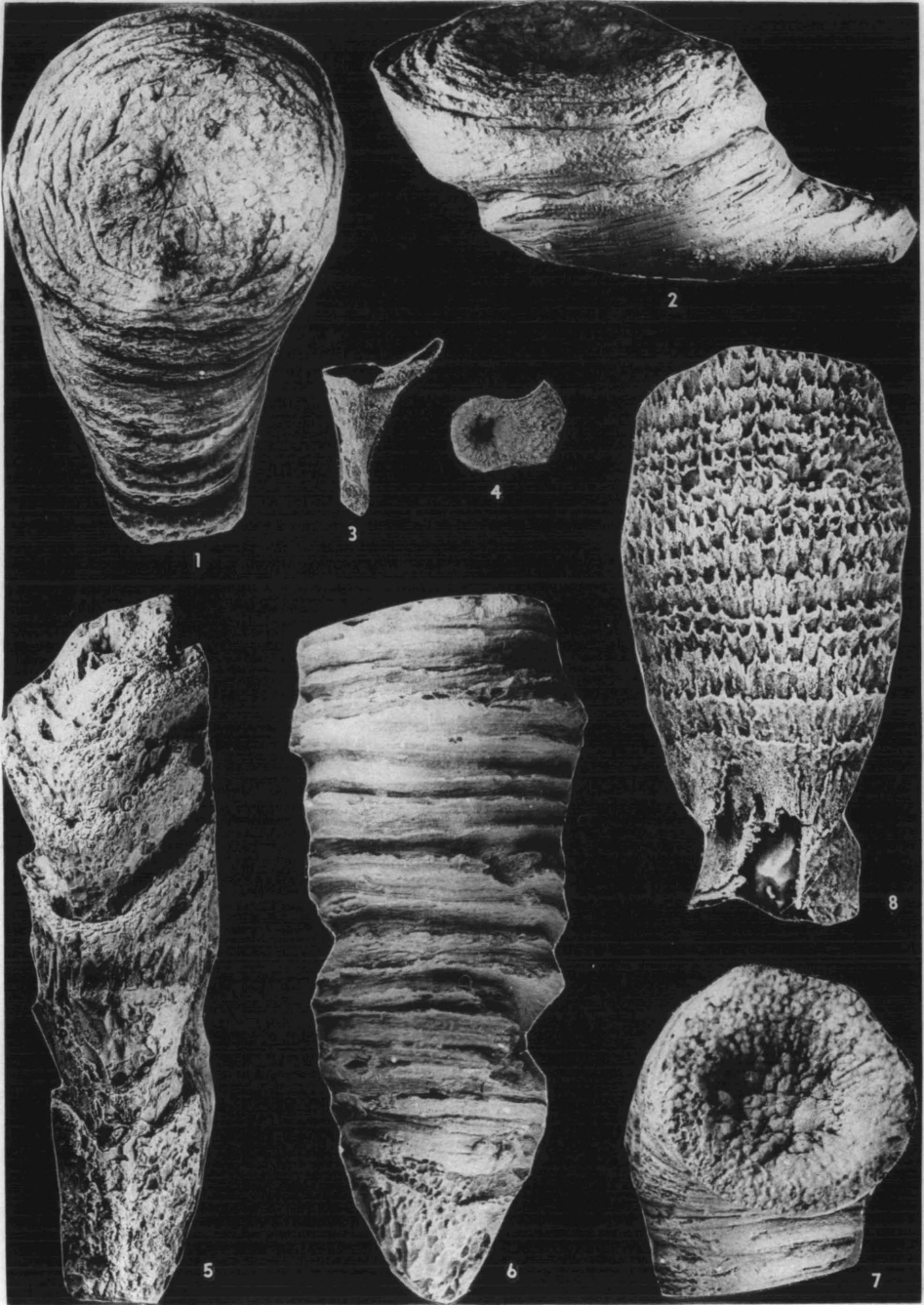


PLATE II



## EXPLANATION OF PLATE II

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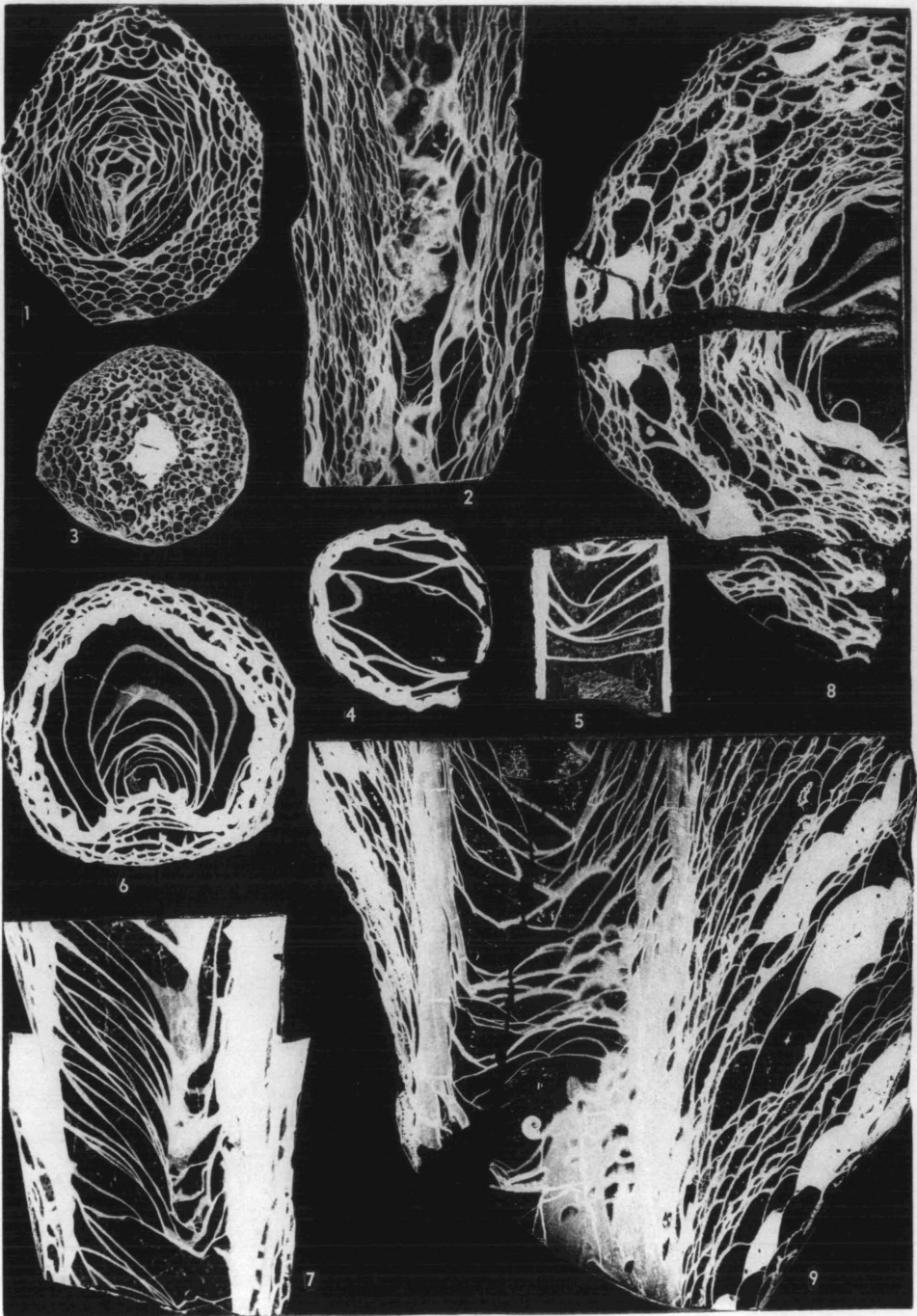
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PLATE III



PLATE IV



## EXPLANATION OF PLATE IV

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## EXPLANATION OF PLATE V

(All figures  $\times 1.5$ )

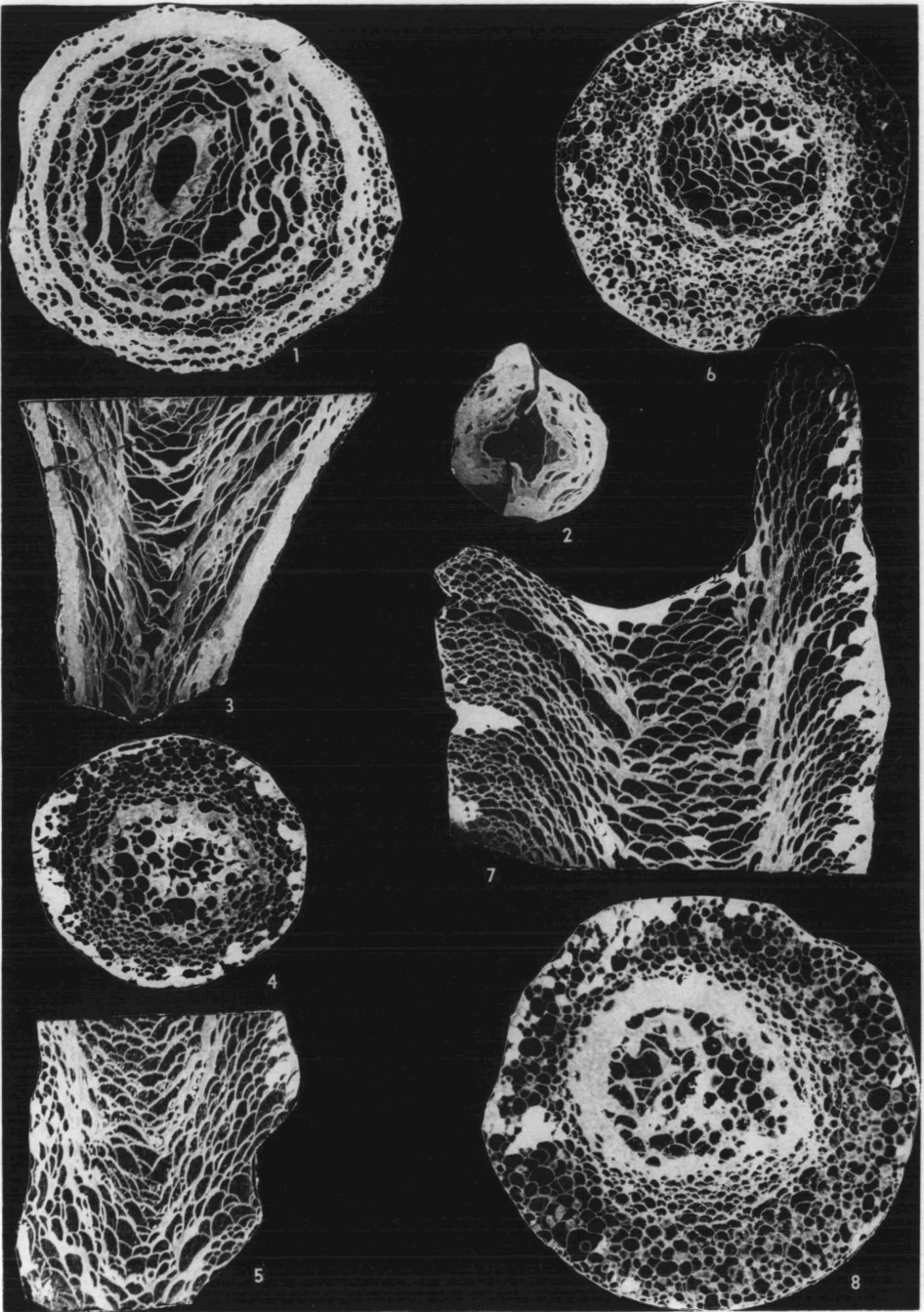
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PLATE V



PLATE VI



## EXPLANATION OF PLATE VI

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