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CORALS OF THE DEVONIAN TRAVERSE GROUP  
OF MICHIGAN. PART II, *CYLINDROPHYLLUM*,  
*DEPASOPHYLLUM*, *DISPHYLLUM*,  
*ERIDOPHYLLUM*, AND *SYNAPTO-*  
*PHYLLUM*

BY

GEORGE M. EHLERS and ERWIN C. STUMM



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*Director:* LEWIS B. KELLUM

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*(Continued on inside back cover)*

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*DEPASOPHYLLUM*, *DISPHYLLUM*,  
*ERIDOPHYLLUM*, AND  
*SYNAPTOPHYLLUM*

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INTRODUCTION

THIS second part<sup>1</sup> of a study of the corals of the Traverse group deals with the phaceloid Tetracoralla occurring in these strata. The species described in this paper are included in the following families and subfamilies:

Family Disphyllidae

  Subfamily Disphyllinae

    Genus *Disphyllum*

*Disphyllum compactum*, sp. nov.

<sup>1</sup> Part I is published in Vol. VII, No. 8, of the *Contributions of the Museum of Paleontology, University of Michigan*.

Genus *Cylindrophyllum**Cylindrophyllum delicatulum*, sp. nov.*Cylindrophyllum grabaui*, sp. nov.*Cylindrophyllum hindshawi* Ehlers and White*Cylindrophyllum magnum*, sp. nov.*Cylindrophyllum panicum* (Winchell)

## Subfamily Pachyphyllinae

Genus *Synaptophyllum**Synaptophyllum crassiseptatum*, sp. nov.

## Subfamily Eridophyllinae

Genus *Eridophyllum**Eridophyllum archiaci* (Billings)*Eridophyllum subcaespitosum* (Nicholson)

## Family Columnariidae

## Subfamily Columnariinae

Genus *Depasophyllum**Depasophyllum adnetum* Grabau

## SYSTEMATIC DESCRIPTIONS

Genus *Disphyllum* de Fromentel*Disphyllum* de Fromentel, 1861, p. 302.*Genotype*.—By original designation, *Cyathophyllum caespitosum* Goldfuss, 1826, p. 60, Pl. 19, Fig. 2b.***Disphyllum compactum* Ehlers and Stumm, sp. nov.**

(Pl. III, Figs. 5-6; Pl. VII, Figs. 6-12)

*Description*.—Corallum low hemispherical in form, phaceloid, composed of cylindrical corallites 3 mm. to 12 mm. in diameter with mature corallites averaging 8 mm. to 10 mm., and having a thin transversely wrinkled epitheca. Calyxes relatively deep with steep to vertical walls. Septa radially arranged, extending from margins to bases of calyxes.

In transverse section septa 40 to 44; major septa extending about one-half the distance from wall to axis; minor septa one-half to two-thirds the length of major septa, in few corallites quite short. Septa thin, apparently noncarinate.

In longitudinal section tabularia averaging 5 mm. in width, com-

posed of thin, complete and incomplete tabulae, which may be horizontal, distally convex or proximally convex; a few distally convex periaxial tabellae present. Dissepimentaria relatively narrow, composed of interspersed globose and elongate dissepiments.

*Remarks.*—This species differs from the genotype *Disphyllum caespitosum* (Goldfuss) in having shorter major septa, much smaller number of periaxial tabellae, and elongate dissepiments interspersed with globose dissepiments.

*Occurrence.*—Middle Devonian (Traverse group—Potter Farm formation); south side of Orchard Hill, north side of Alpena—Long Rapids road, center of sec. 31, T. 32 N., R. 7 E., about one and three-fourths miles west of bridge over North Branch of Thunder Bay River, Alpena County, Michigan.

*Types.*—Holotype No. 25685; paratype No. 25683, Museum of Paleontology, University of Michigan.

#### Genus *Cylindrophyllum* Simpson

*Cylindrophyllum* Simpson, 1900, p. 217.

*Genotype.*—By original designation, *C. elongatum* Simpson, 1900, p. 217, Fig. 42 on p. 217.

#### *Cylindrophyllum delicatulum* Ehlers and Stumm, sp. nov.

(Pl. II, Fig. 2; Pl. VI, Figs. 7–12)

*Description.*—Coralla weakly phaceloid or dendroid, composed of cylindrical corallites averaging 10 mm. in diameter. Buds produced at an angle to parent corallite. Epitheca thin, badly worn on all specimens studied. Calyxes relatively shallow with moderately sloping walls.

In transverse section septa 46 to 52, radially arranged, of two orders, major and minor; major septa extending from walls to axes, becoming irregularly twisted at their axial ends; minor septa about one-half as long. All septa thin and provided with crossbar and offset carinae.

In longitudinal section tabularia relatively narrow, occupying less than one-third diameter of corallites; tabellae very thin, distally arched and obscured by axial ends of major septa. Dissepimentaria wide, composed of numerous, very thin and steeply inclined dissepiments. Carinae very long and thin.

*Remarks.*—This species is very closely related to *C. magnum*, sp. nov., described on page 26 of this paper. It differs from that species in possessing smaller corallites, slightly longer major septa in a majority of the corallites, and a smaller number of offset carinae. In *C. delicatulum* the buds are directed outward at an acute angle to the parent corallite, whereas in *C. magnum* the buds grow parallel to the parent corallite.

*Occurrence.*—Middle Devonian (Traverse group—Rockport Quarry limestone); rock cut through hill along U. S. Highway 23 in SE.  $\frac{1}{4}$  sec. 31, T. 34 N., R. 8 E., and cut along same highway in south part of sec. 8, T. 33 N., R. 8 E., west side of Grand Lake, Presque Isle County, Michigan; quarry of Kelley's Island Lime and Transport Company at Rockport, Alpena County, Michigan.

*Types.*—Holotype No. 26130; paratypes Nos. 25643 and 25707, Museum of Paleontology, University of Michigan.

### ***Cylindrophyllum grabau* Ehlers and Stumm, sp. nov.**

(Pl. III, Figs. 1-4; Pl. VII, Figs. 1-5)

*Description.*—Corallum phaceloid, growing in low hemispherical masses and composed of cylindrical corallites; mature corallites 10 mm. to 15 mm. in diameter. Marginal and parricidal buds numerous at some places in corallum. Epitheca transversely wrinkled. Calyxes funnel-shaped with steeply sloping walls.

In transverse section septa of mature corallites 50 to 52, radially arranged, of two orders, major and minor; major septa in most corallites extending from walls to or nearly to axes; minor septa approximately one-half as long; in some corallites major septa not much longer than minor, both orders of septa reaching only halfway to axes. At most places in dissepimentaria carinae very numerous, so closely set and thickened that they cause dilation of septa; major septa in region of tabularium very attenuate.

In longitudinal section tabularia about one-fourth to one-third diameter of corallites; zones of complete tabulae alternating with zones of incomplete tabulae; tabulae bounded by inclined periaxial tabellae. Dissepimentaria relatively wide, composed of small to medium-sized steeply inclined dissepiments. Carinae thick, closely

set, arranged as superimposed funnels, in places completely obscuring dissepiments.

*Remarks.*—This species is distinct from all other species in having infundibuliform zones of thickened carinae which cause dilation of the septa in the dissepimentaria.

This species is represented by specimens in the Museum of Paleontology of the University of Michigan which were studied by A. W. Grabau. These specimens were labeled *Pristiphyllum longiseptum* by him. E. R. Pohl (1930, p. 26) placed this name in a list of the characteristic species of the Thunder Bay stage of the Traverse group of rocks. The name is a *nomen nudum*.

*Occurrence.*—Middle Devonian (Traverse group—Thunder Bay limestone); north shore of Partridge Point, Thunder Bay, Lake Huron, about four miles south of Alpena, Michigan.

*Types.*—Holotype No. 25671; paratypes Nos. 25672, 25677, and 25678, Museum of Paleontology, University of Michigan.

#### *Cylindrophyllum hindshawi* Ehlers and White

(Pl. I, Figs. 1-2; Pl. V, Figs. 7-9)

*Cylindrophyllum hindshawi* Ehlers and White, 1932, pp. 97-98, Pl. 1, Fig. 2; Pl. 2; Pl. 3, Figs. 1-2; Pl. 4, Figs. 1-2.

*Description.*—Corallum phaceloid, locally subcerioid, low hemispherical in form, composed of cylindrical to subprismatic corallites; mature corallites 8 mm. to 12 mm. in diameter. Budding marginal, profuse, typically in whorls. Epitheca thin, transversely wrinkled. Calyxes funnel-shaped with steeply sloping walls. Radially arranged, carinate septa extending from margins to bases of calyxes; major septa continuing across bases to calyx centers. Calyxes of some large corallites with a peripheral ridge between some major and minor septa; ridges extending from margin of calyx three-fourths the distance to base.

In transverse section septa of mature corallites 38 to 44, with an average of 40; septa of two orders, major and minor, major septa extending from walls to or nearly to axes; minor septa about half as long; both orders with numerous crossbar carinae; in parts of some corallites major septa carinate in tabularium.

In longitudinal section tabularia occupying about one-half diameter of corallites, composed of horizontal and distally convex, complete and incomplete tabulae; very few periaxial tabellae present. Dissepimentaria composed of medium-sized to large, steeply inclined to vertical dissepiments. Carinae numerous, long and obliquely ascending.

*Remarks.*—This species differs from its nearest relative *C. panicum* (Winchell), in its subcerioid growth habit, shallower calyces with less steeply sloping walls, longer major septa, longer and more obliquely directed carinae, narrower tabularia, and larger dissepiments.

*Occurrence.*—Middle Devonian (Traverse group—Potter Farm formation); shale pit and ledges just above pit near west boundary of Evergreen Cemetery, SW.  $\frac{1}{4}$  SW.  $\frac{1}{4}$  sec. 21, T. 31 N., R. 8 E., near west line of Alpena, Michigan.

*Types.*—Holotype No. 14336; hypotypes Nos. 25626, 25684, Museum of Paleontology, University of Michigan.

### ***Cylindrophyllum magnum* Ehlers and Stumm, sp. nov.**

(Pl. II, Fig. 1; Pl. V, Figs. 1-4)

*Description.*—Corallum phaceloid, composed of cylindrical corallites in close contact; mature corallites 12 mm. to 15 mm. in diameter. Peripheral budding common. Epitheca relatively thin and transversely wrinkled. Calyces relatively deep with steeply sloping walls.

In transverse section septa of mature corallites averaging 46 in number, of two orders, major and minor; major septa extending from walls to or to points three-quarters the distance to the axes, in some corallites sinuous at their axial ends; minor septa averaging one-half the length of the major. All septa thin and heavily carinate with offset carinae much more numerous than those of crossbar type.

In longitudinal section tabularia of moderate width, composed of closely set, very thin, incomplete tabulae, in many places interrupted by axial ends of major septa; periaxial tabellae numerous. Dissepimentaria wide, composed of numerous, relatively small, thin, globose, steeply inclined dissepiments. Carinae long, thin, and obliquely directed.



*Remarks.*—This species is very closely related to *C. delicatulum*. It differs from it in possessing larger corallites, slightly shorter major septa in a majority of the corallites, and in having a predominance of offset carinae. In *C. magnum* the buds grow parallel to the parent, whereas in *C. delicatulum* the buds are directed outward at an acute angle to the parent corallite.

*Occurrence.*—Middle Devonian (Traverse group—Four Mile Dam formation); core rock of bioherm, base of Four Mile Dam, Thunder Bay River, three miles northeast of Alpena, Michigan; core rock of bioherm beside Long Rapids road about six-tenths of a mile southeast of west line of sec. 1, T. 31 N., R. 7 W., about four and one-half miles northwest of Alpena, Michigan.

*Types.*—Holotype No. 25635; paratype No. 25642, Museum of Paleontology, University of Michigan.

*Cylindrophyllum panicum* (Winchell)

(Pl. I, Figs. 3–4; Pl. V, Figs. 5–6)

*Cyathophyllum panicum* Winchell, 1866, p. 90.

*Diphyphyllum panicum* Rominger, 1876, p. 125, Pl. 47, Fig. 3.

*Diplophyllum panicum* Grabau and Shimer, 1909, p. 75.

*Cylindrophyllum panicum* Ehlers and White, 1932, pp. 93–96, Pl. 1, Fig. 1;

Pl. 3, Figs. 3–5; Pl. 4, Figs. 3–4; Pl. 5, Figs. 1–3.

*Disphyllum panicum* Sloss, 1939, p. 68, Pl. 9, Figs. 25–27.

*Description.*—Corallum phaceloid, hemispherical, composed of parallel cylindrical corallites averaging 10 mm. in diameter. Budding marginal, buds directed parallel to parent corallites. Epitheca thin, transversely wrinkled. Calyxes deep with very steeply sloping walls and flat bases produced by uppermost tabula. Septa radially arranged and carinate, major septa reaching bases of calyxes and minor septa four-fifths the distances to the bases. Calyxes of some large corallites with a peripheral ridge between some major and minor septa; ridges extending from margins of calyx three-fourths the distance to base.

In transverse section septa of mature corallites 38 to 46, with an average of 42; major septa extending from walls to one-half to two-thirds the distance to axes; most minor septa about one-half as long as major, some slightly longer.

In longitudinal section tabularia wide, averaging three-fourths diameter of corallites, composed of horizontal or distally convex,

complete and incomplete tabulae; periaxial tabellae numerous. Dissepimentaria narrow, composed of small, globose, steeply inclined dissepiments. Carinae numerous, short, and almost horizontally directed.

*Remarks.*—This species differs from its nearest relative, *C. hindshawi*, in lacking a local subcerioid growth form, and in having deeper calyces with flat bases, shorter major septa, shorter and less obliquely directed carinae, wider tabularia, and smaller dissepiments.

*Occurrence.*—Middle Devonian (Traverse group); lower part of Petoskey formation, Little Traverse Bay region, Emmet County; Beebe School formation, bed 2 of Kelly and Smith (1947, p. 460), buff, dumose, *Favosites*-bearing limestone in lower part of the scarp slope of a small cuesta about one-eighth mile north of the Beebe School, located one mile west and two and a half miles south of Afton, Cheboygan County; lower part of Potter Farm formation, vicinity of Alpena, Alpena County, Michigan.

*Types.*—Holotype No. 25687; hypotypes Nos. 14337, 25705, Museum of Paleontology, University of Michigan.

#### Genus *Synaptophyllum* Simpson

*Synaptophyllum* Simpson, 1900, p. 212.

*Genotype.*—By original designation, *Diphyphyllum arundinaceum* Billings, 1859, p. 134.

#### *Synaptophyllum crassiseptatum* Ehlers and Stumm, sp. nov.

(Pl. II, Fig. 3; Pl. VI, Figs. 1–6)

*Description.*—Corallum phaceloid, composed of closely spaced cylindrical corallites 3 mm. to 11 mm. in diameter with a majority of those of mature size 8 mm. to 10 mm. Corallites with a thin, transversely wrinkled epitheca; calyces unknown.

In transverse section septa 40 to 44, of two orders major and minor; major septa extending from the walls one-fourth to one-third the distance to the axes; minor septa typically almost as long. In some corallites minor septa appearing as short peripheral spines. Short, thick, crossbar carinae present on most septa, one to three to a septum.

In longitudinal section tabularia wide, composed of incomplete, horizontal or distally convex tabulae, flanked by steeply inclined periaxial tabellae. Dissepimentaria narrow, consisting of a row of

globose, horseshoe dissepiments along wall, flanked in a few places by a second row of steeply inclined dissepiments. Dissepiments at many places obscured by thick, almost horizontally directed carinae.

*Remarks.*—This species is most nearly related to *S. camSELLi* Smith (1945, p. 23) from the Upper Devonian strata along the Bouvier River, northwestern Canada, but differs from it in the possession of fewer and thicker septa, incomplete tabulae, and thickened and more numerous carinae.

*Occurrence.*—Middle Devonian (Traverse group—Potter Farm formation), ditch along Michigan State Highway 32, south line of sec. 20, T. 31 N., R. 8 E., about one-fourth of a mile west of west boundary of Alpena, Michigan. All specimens were obtained from a dark bluish-gray argillaceous limestone about twenty-five feet above shale and limestone of the Potter Farm formation exposed in a small shale pit of the Evergreen Cemetery in the SW.  $\frac{1}{4}$  of sec. 21.

*Types.*—Holotype No. 25637; paratype No. 25680, Museum of Paleontology, University of Michigan.

#### Genus *Eridophyllum* Edwards and Haime

*Eridophyllum* Edwards and Haime, 1850, p. lxxi; 1851, p. 424.

*Genotype.*—By original designation. *Eridophyllum seriale* Edwards and Haime, 1850, p. lxxi.

#### *Eridophyllum archiaci* (Billings)

(Pl. IV, Figs. 3-7; Pl. VIII, Figs. 1-6)

*Diphyphyllum archiaci* Billings, 1860, p. 260, Fig. 8.

*Crepidophyllum archiaci* Nicholson and Thomson, 1876, p. 149.

*Eridophyllum archiaci* Smith and Lang, 1927, p. 308.

*Description.*—Coralla subphaceloid to phaceloid, composed of cylindrical corallites 10 mm. to 20 mm. in diameter and having a thick, transversely wrinkled epitheca. Calyxes relatively shallow with moderately sloping walls. Septa radially arranged with numerous closely spaced carinae; major septa extending from margins to bases of calyxes, becoming deflected at their axial ends to form an aulos. Aulos open in direction of cardinal septum in majority of corallites. Minor septa terminate about halfway between calyx margin and aulos.

In transverse section septa 42 to 50; major septa forming an

oval aulos, 3 mm. to 4.5 mm. in diameter, with an opening facing the cardinal septum in most corallites; minor septa extending about one-half the distance from wall to aulos. All septa thin, decorated with crossbar carinae, with 6 to 10 carinae to each septum.

In longitudinal section tabularia partly within and partly outside of aulos, composed of thin, horizontal and oblique, complete and incomplete tabulae. Dissepimentaria wide, composed of small, globose, distally convex or inclined dissepiments. Vertical rows of upward and inward arching carinae prominent.

*Remarks.*—This species has been confused with *E. subcaespitosum* (Nicholson), which occurs in association with *E. archiaci* in western New York and southwestern Ontario. *Eridophyllum subcaespitosum* is smaller, simple or very weakly fasciculate with one or two buds, and has an aulos which is complete and not open facing the cardinal septum from the neanic through the ephebic stage. (See Pl. IV, Figs. 1–2, and Pl. VIII, Figs. 7–10).

*Occurrence.*—Middle Devonian (Hamilton group—Ludlowville formation), western New York; (Hungry Hollow formation—coral bed), Thedford and Arkona regions, Ontario, Canada. Middle Devonian (Traverse group—Four Mile Dam formation); core rock of bioherm at Four Mile Dam, Thunder Bay River, three miles northwest of Alpena, Michigan; core rock of bioherm beside Long Rapids road about six-tenths of a mile southeast of west line of sec. 1, T. 31 N., R. 7 W., about four and a half miles northwest of Alpena, Michigan.

*Types.*—Hypotypes Nos. 23859, 23861, 25648, 25649, 25650; hypotypes of *E. subcaespitosum* (Nicholson) Nos. 25652, 25653, 25655, Museum of Paleontology, University of Michigan.

#### Genus *Depasophyllum* Grabau

*Depasophyllum* Grabau, 1922, p. 21 (*nomen nudum*), and 1936, p. 44.

*Genotype.*—By original designation, *Depasophyllum adnetum* Grabau, 1936, p. 44.

#### *Depasophyllum adnetum* Grabau

(Pl. II, Figs. 4–9; Pl. VIII, Figs. 11–15)

*Description.*—Coralla weakly fasciculate, composed of subcylindrical corallites 6 mm. to 15 mm. in diameter, and having a thin,

transversely wrinkled epitheca. Peripheral budding common; many buds extending outward at right angles to parent corallite. Corallites attached by basal expansions or talons; neighboring corallites at some places connected by lateral epithecal proliferations. Calyxes shallow with gradually sloping walls and erect margins. Septa of equal length, extending from margins to bases of calyx walls. Bottoms of calyxes flat and formed by uppermost tabula.

In transverse section septa of one order, thin, radially arranged, 28 to 38, extending from the periphery one-fifth to one-third the distance to the axis, their axial ends connected by the intercepted edge of a tabula.

In longitudinal section the tabulae are complete, horizontal axially, strongly deflected proximally to join the wall or the previously formed tabula at its point of deflection. Dissepiments absent.

*Occurrence.*—Middle Devonian (Traverse group—Four Mile Dam formation); core rock of bioherm, base of Four Mile Dam, Thunder Bay River, three miles northwest of Alpena, Michigan; core rock of bioherm beside Long Rapids road about six-tenths of a mile southeast of west line of sec. 1, T. 31 N., R. 7 W., about four and a half miles northwest of Alpena, Michigan; Dock Street clay member of Four Mile Dam formation, in ditch beside lime kiln of projected Foxton Brothers' quarry in SE.  $\frac{1}{4}$  NW.  $\frac{1}{4}$  sec. 15, T. 31 N., R. 8 E., south of Detroit and Mackinac Railroad tracks and about three-quarters of a mile northwest of train yards in northwest part of Alpena; Dock Street clay member of Four Mile Dam formation in quarry of Thunder Bay Quarries Company, northeast side of Alpena, Michigan.

*Types.*—Syntypes Nos. 25651*a-i*; hypotypes Nos. 23700, 23702, Museum of Paleontology, University of Michigan.

## LITERATURE CITED

- BILLINGS, E. 1859. Can. Journ. Industry, Sci., Art., n.s., Vol. 4.  
 ——— 1860. *Ibid.*, Vol. V.
- EDWARDS, H. M., and HAIME, J. 1850. Brit. Foss. Corals, Pt. 1, *Introd.*  
 Monogr. Paleontogr. Soc. London.  
 ——— 1851. Mon. d. polyp. foss. terr. Paleoz. Arch. Mus. Nat. Hist. Paris.  
 Vol. V.
- EHLERS, G. M., and WHITE, T. E. 1932. *Cylindrophyllum panicum* (Winchell) and *Cylindrophyllum hindshawi*, sp. nov., Tetracoralla from the Traverse Group of Michigan. Contrib. Mus. Paleontol. Univ. Mich., Vol. IV, No. 4.
- FROMENTEL, E. DE. 1861. *Introd. à l'étude des Polyp. Foss.* Paris.
- GOLDFUSS, G. A. 1826. *Petrefacta Germaniae.* Düsseldorf: Arnz and Co. Vol. 1.
- GRABAU, A. W. 1922. Paleozoic Corals of China, Pt. I—Tetraseptata. Paleontol. Sinica, Ser. B., Vol. 2, fasc. 1.  
 ——— 1936. Early Permian Fossils of China, Pt. II. *Ibid.*, Vol. 8, fasc. 4.  
 ——— and SHIMER, H. W. 1909. North American Index Fossils. New York: A. G. Seiler and Co.
- KELLY, W. A., and SMITH, G. W. 1947. Stratigraphy and Structure of Traverse Group in Afton-Onaway Area, Michigan. Bull. Amer. Assn. Petrol. Geol., Vol. 31, No. 3.
- NICHOLSON, H. A. 1874. Descriptions of New Fossils from the Devonian Rocks of Canada West. Geol. Mag., Decade II, Vol. 1.  
 ——— and THOMPSON, J. 1876. Description of Some New or Imperfectly Understood Forms of Paleozoic Corals. Proc. Roy. Soc. Edinburgh, Vol. 9. (abstract)
- POHL, E. R. 1930. The Middle Devonian Traverse Group of Rocks in Michigan, a Summary of Existing Knowledge. Proc. U. S. Nat. Mus., Vol. 76, Art. 14.
- ROMINGER, C. 1876. Palaeontology. Fossil Corals. Geol. Surv. Mich., Vol. III, Pt. II.
- SIMPSON, G. B. 1900. Preliminary Descriptions of New Genera of Paleozoic Rugose Corals. Bull. N. Y. State Mus., Vol. 8, No. 39.
- SLOSS, L. L. 1939. Devonian Rugose Corals from the Traverse Beds of Michigan. Journ. Paleontol., Vol. 13, No. 1.
- SMITH, S. 1945. Upper Devonian Corals of the Mackenzie River Region, Canada. Geol. Soc. Amer., Special Paper 59.  
 ——— and LANG, W. D. 1927. On the Silurian Coral *Tryplasma rugosum* (Edwards and Haime). Ann. Mag. Nat. Hist., Ser. 9, Vol. 20.
- WINCHELL, A. 1866. The Grand Traverse Region. Ann Arbor, Mich.: Dr. Chase's Steam Printing House.

*CORALS OF DEVONIAN TRAVERSE GROUP*

PLATES AND DESCRIPTION

## EXPLANATION OF PLATE I

(All figures  $\times 1$ )

- |   | PAGE |
|---|------|
| <i>Cylindrophyllum hindshawii</i> Ehlers and White .....  | 25   |
| <p>FIG. 1. Distal view of part of an exceptionally well-preserved corallum showing calyces of phaceloid and subcerioid corallites bearing heavily carinate septa. Hypotype No. 25684. Potter Farm formation; shale pit along west side of Evergreen Cemetery, Alpena, Michigan.</p>   |      |
| <p>FIG. 2. Proximal view of a young colony showing proliferous budding. Hypotype No. 25626. Potter Farm formation; same locality as original of Figure 1.</p>   |      |
| <i>Cylindrophyllum panicum</i> (Winchell) .....   | 27   |
| <p>FIG. 3. Side view of a specimen showing parallel cylindrical corallites with coarsely annulated epitheca. Holotype No. 25687. Lower part of Petoskey formation; shore of Little Traverse Bay, just east of Petoskey, Michigan.</p>   |      |
| <p>FIG. 4. Distal view of part of corallum showing well-preserved calyces with erect walls, heavily carinate septa, and tabulate floors. Hypotype No. 25705. Lower part of Petoskey formation; Kegomic (Mud Lake) Quarry, SE. <math>\frac{1}{4}</math> SW. <math>\frac{1}{4}</math> sec. 27, T. 35 N., R. 5 W., about one mile northeast of Bay View, Emmet County, Michigan.</p> |      |



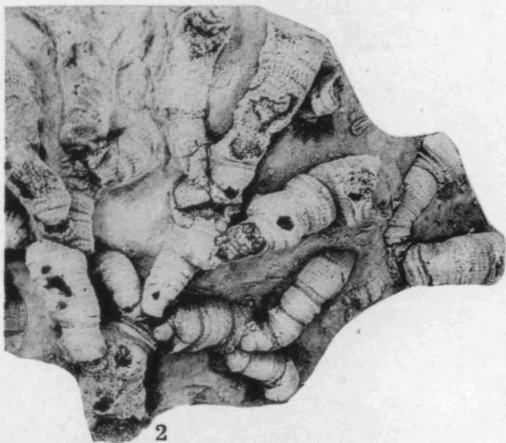
PLATE I



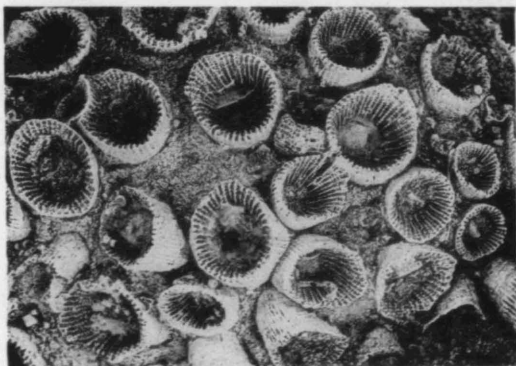
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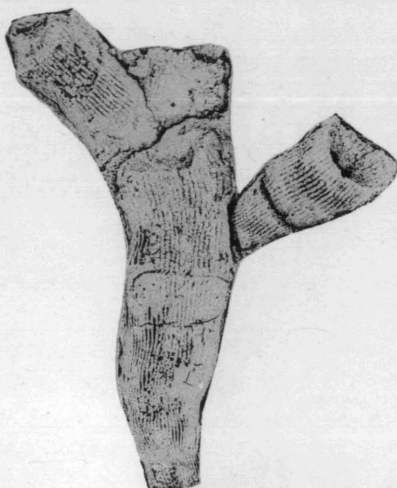


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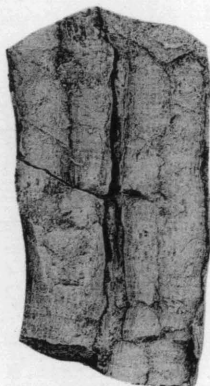
PLATE II



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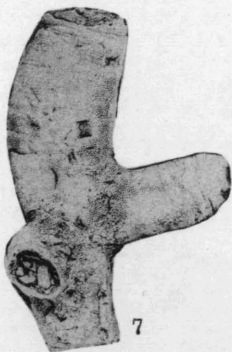
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## EXPLANATION OF PLATE II

(All figures  $\times 1$ )

- |  | PAGE |
|--|------|
| <i>Cylindrophyllum magnum</i> Ehlers and Stumm, sp. nov. ....  | 26   |
| FIG. 1. Side view of a specimen showing large, cylindrical corallites. Holotype No. 25635. Bioherm in Four Mile Dam formation; Four Mile Dam, Thunder Bay River, Alpena County, Michigan.  |      |
| <i>Cylindrophyllum delicatulum</i> Ehlers and Stumm, sp. nov. ....   | 23   |
| FIG. 2. Side view of an exfoliated and compressed specimen showing dendroid budding. Paratype No. 25643. Rockport Quarry limestone; rock cut along U. S. Highway 23, west side of Grand Lake, Presque Isle County, Michigan.   |      |
| <i>Synaptophyllum crassiseptatum</i> Ehlers and Stumm, sp. nov. ....   | 28   |
| FIG. 3. Side view of two compressed corallites of a large corallum showing parallel cylindrical growth habit. Holotype No. 25637. Potter Farm formation; ditch along Michigan State Highway 32 about one-fourth of a mile west of west boundary of Alpena, Michigan. |      |
| <i>Depasophyllum adnetum</i> Grabau .....  | 30   |
| FIG. 4. Side view of a specimen showing small buds directed at right angles to parent corallite. Syntype No. 25651e. Bioherm in Four Mile Dam formation; Four Mile Dam, Thunder Bay River, Alpena County, Michigan.  |      |
| FIG. 5. Distal view of a corallite showing shallow calyx with short septa and tabulate base. Syntype No. 25651b. Same horizon and locality as the original of Figure 4.  |      |
| FIG. 6. Side view of same specimen as Figure 5 showing typical sub-cylindrical growth habit.   |      |
| FIG. 7. Side view of a compressed specimen showing two large buds. Syntype No. 25651f. Same horizon and locality as original of Figure 4.  |      |
| FIG. 8. Distal view of corallite showing typical shallow calyx with short septa and wide tabula. Syntype No. 25651a. Same horizon and locality as original of Figure 4.  |      |
| FIG. 9. Side view of same specimen as Figure 8 showing annulated epitheca and lateral talon on right side about one-third distance above base.   |      |

## EXPLANATION OF PLATE III

(All figures  $\times 1$ )

PAGE

*Cylindrophyllum grabaui* Ehlers and Stumm, sp. nov. .... 24

FIG. 1. Distal view of part of a corallum with many small marginal and parricidal buds. Paratype No. 25678. Thunder Bay limestone; north shore of Partridge Point, four miles south of Alpena, Michigan.

FIG. 2. Side view of another corallum showing marginal buds. Paratype No. 25677. Same horizon and locality as original of Figure 1.

FIG. 3. Side view of another corallum showing mature, closely set, cylindrical corallites characteristic of species. Holotype No. 25671. Same horizon and locality as original of Figure 1.

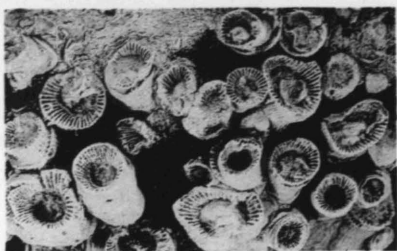
FIG. 4. Distal view of a corallite of same specimen as Figure 3 showing funnel-shaped calyx and carinate septa.

*Disphyllum compactum* Ehlers and Stumm, sp. nov. .... 22

FIG. 5. Distal view of part of a corallum showing calyces of closely set corallites. Paratype No. 25683. Potter Farm formation; Orchard Hill, Alpena County, Michigan.

FIG. 6. Side view of another specimen showing compact, cylindrical growth habit. Holotype No. 25685. Same horizon and locality as original of Figure 5.

PLATE III



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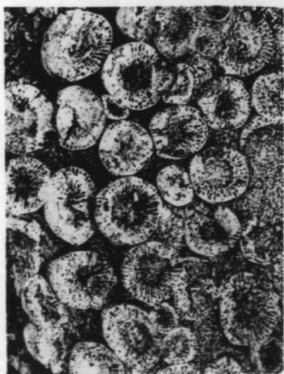
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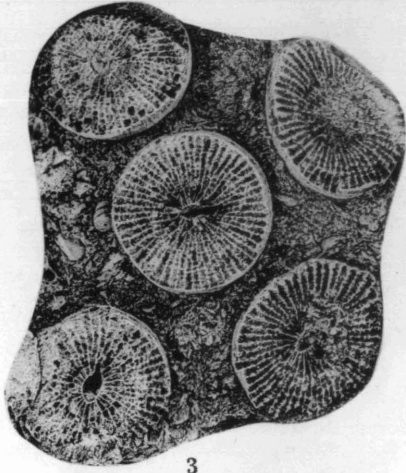


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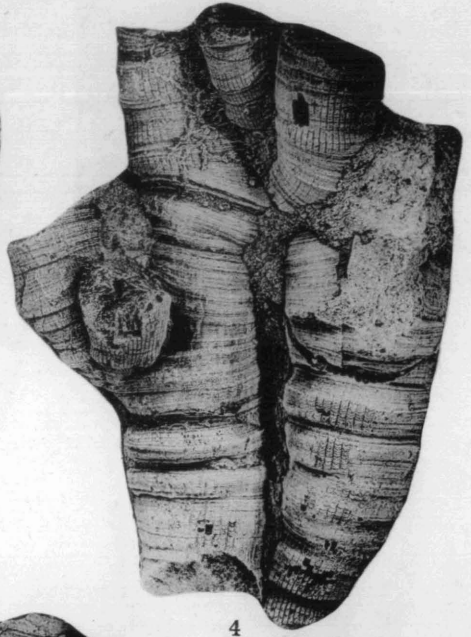


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PLATE IV



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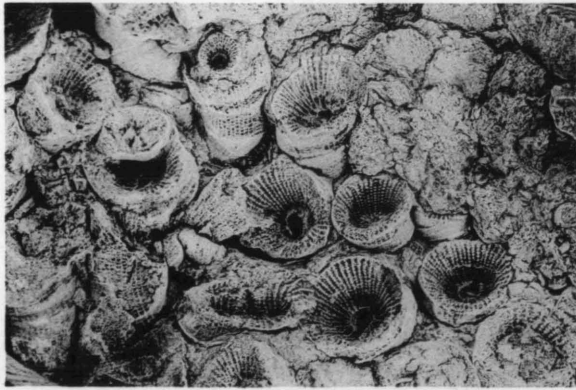
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## EXPLANATION OF PLATE IV

(All figures  $\times 1$ )

	PAGE
<i>Eridophyllum subcaespitosum</i> (Nicholson) .....	30
FIG. 1. Side view of a characteristic specimen showing marginal bud. Hypotype No. 25653. Hungry Hollow formation—coral bed; near Thedford, Ontario.	
FIG. 2. Side and calyx view of specimen showing aulos. Hypotype No. 25652. Same horizon and locality as original of Figure 1.	
<i>Eridophyllum archiaci</i> (Billings) .....	29
FIG. 3. Distal view of part of a corallum showing calyces each with an open aulos. Hypotype No. 25648. Hungry Hollow formation; Hungry Hollow, Ausable River, near Arkona, Ontario.	
FIG. 4. Side view of part of a corallum showing phaceloid growth habit and proliferous budding. Hypotype No. 25649. Same horizon and locality as original of Figure 3.	
FIG. 5. Side view of two corallites in contact. Hypotype No. 25650a. Bioherm in Four Mile Dam formation; Four Mile Dam, Thunder Bay River, Alpena County, Michigan.	
FIG. 6. Distal view of three corallites showing incomplete separation of two corallites with confluent calyces. Hypotype No. 25650b. Same horizon and locality as original of Figure 5.	
FIG. 7. Distal view of part of a large corallum. Hypotype No. 23859. Bioherm in Four Mile Dam limestone; Four Mile Dam, Thunder Bay River, Alpena County, Michigan.	

## EXPLANATION OF PLATE V

(All figures  $\times 2$ )

- |   | PAGE |
|---|------|
| <i>Cylindrophyllum magnum</i> Ehlers and Stumm, sp. nov. ....   | 26   |
| FIG. 1. Transverse section showing thin, axially sinuous septa and offset carinae. Holotype No. 25635. Bioherm in Four Mile Dam formation; Four Mile Dam, Thunder Bay River, Alpena County, Michigan.         |      |
| FIG. 2. Longitudinal section of a corallite of the same specimen as Figure 1 showing wide dissepimentarium with small globose dissepiments and relatively narrow tabularium with thin, incomplete tabulae.    |      |
| FIG. 3. Transverse section of several corallites of a specimen with unusually long septa. Paratype No. 25642. Bioherm in Four Mile Dam formation; Long Rapids Road, Alpena County, Michigan.                  |      |
| FIG. 4. Longitudinal section of a corallite of same specimen as Figure 3 showing slope of calyx, tabulae, and numerous closely set carinae.   |      |
| <i>Cylindrophyllum panicum</i> (Winchell) .....   | 27   |
| FIG. 5. Transverse section showing relatively short septa with few carinae. Hypotype No. 14337. Lower part of Petoskey formation; vicinity of Bear Creek in Petoskey, Michigan.                               |      |
| FIG. 6. Longitudinal section of two corallites of same specimen as Figure 5 showing wide tabularium with tabulae and periaxial tabellae and short, horizontally directed carinae.                             |      |
| <i>Cylindrophyllum hindshawi</i> Ehlers and White .....   | 25   |
| FIG. 7. Transverse section showing subcerioid habit and long, heavily carinate septa. Holotype No. 14336. Potter Farm formation; near west boundary of Evergreen Cemetery, Alpena County, Michigan.           |      |
| FIG. 8. Transverse section of a corallite of same specimen as Figure 7 showing marginal buds.   |      |
| FIG. 9. Longitudinal section of a corallite of same specimen as Figure 7 showing tabularium with complete and incomplete tabulae, very few periaxial tabellae and numerous long, obliquely ascending carinae. |      |



PLATE V

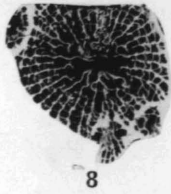
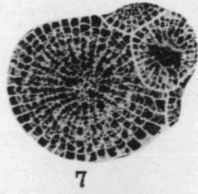
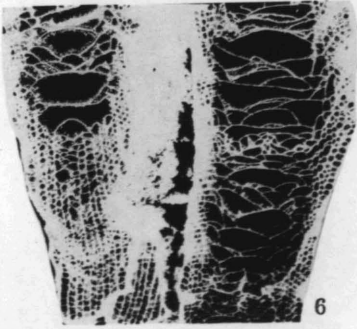
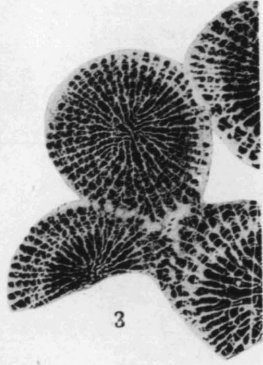
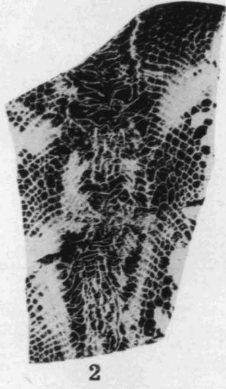
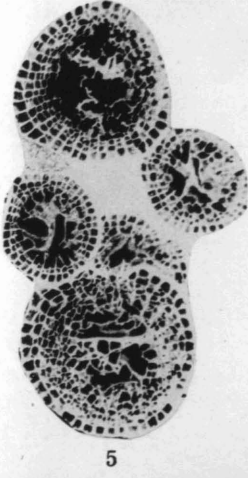
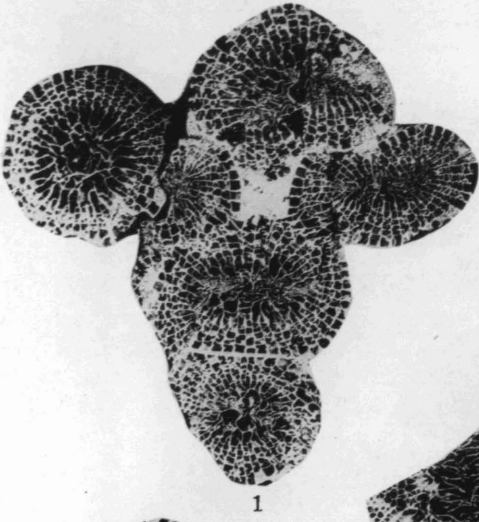
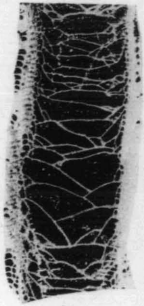


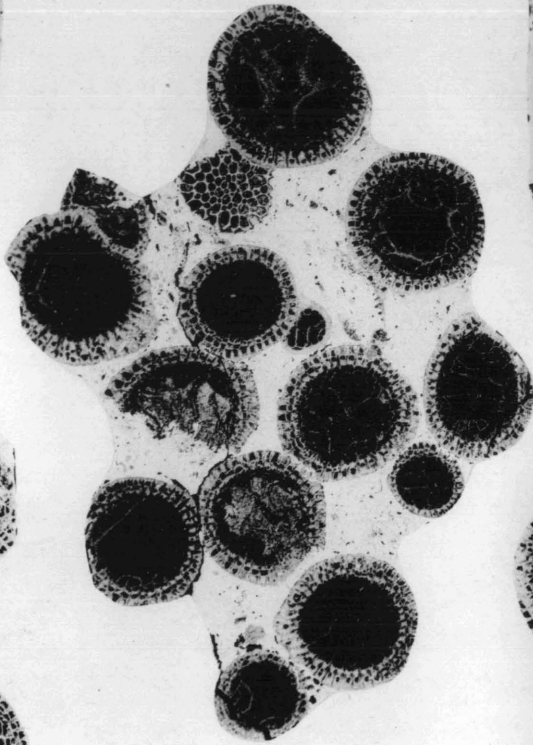
PLATE VI



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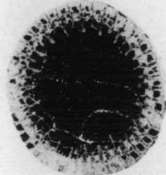
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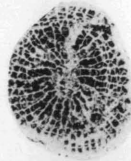
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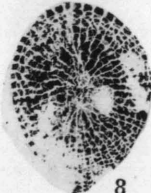
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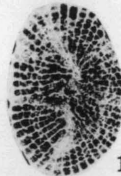
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## EXPLANATION OF PLATE VI

(All figures  $\times 2$ )

- |   | PAGE |
|---|------|
| <i>Synaptophyllum crassiseptatum</i> Ehlers and Stumm, sp. nov. ....  | 28   |
| <p>FIG. 1. Longitudinal section of a corallite showing narrow dissepimentarium with horseshoe dissepiments along wall flanked in few places by a row of steeply inclined dissepiments, and wide tabularium of complete and incomplete tabulae. Paratype No. 25680. Potter Farm formation; ditch along Michigan State Highway 32 about one-fourth of a mile west of west boundary of Alpena, Michigan.</p> |      |
| <p>FIGS. 2-3. Transverse sections of two corallites of same specimen as Figure 1 showing unusually long septa.</p>  |      |
| <p>FIG. 4. Transverse section of same specimen as Figure 1 showing spacing of corallites and short thick carinate septa.</p>  |      |
| <p>FIG. 5. Longitudinal section of a corallite of a corallum showing peripheral stereozone produced by thickened carinae and tabularium with periaxial tabellae flanking complete and incomplete tabulae. Holotype No. 25637. Same horizon and locality as paratype.</p>  |      |
| <p>FIG. 6. Transverse section of a corallite of holotype (No. 25637) showing length of major and minor septa.</p>   |      |
| <i>Cylindrophyllum delicatulum</i> Ehlers and Stumm, sp. nov. ....  | 23   |
| <p>FIG. 7. Longitudinal section of a corallite showing relatively narrow tabularium with distally arched tabellae largely obscured by axial ends of major septa, and wide dissepimentarium. Holotype No. 26130. Rockport Quarry limestone; rock cut along U. S. Highway 23, west side of Grand Lake, Presque Isle County, Michigan.</p>   |      |
| <p>FIGS. 8-9. Transverse sections of two corallites of same specimen as Figure 7 showing length of major and minor septa and crossbar carinae.</p>  |      |
| <p>FIGS. 10-11. Transverse sections of two corallites of a compressed specimen, showing thin septa with numerous crossbar and few offset carinae. Paratype No. 25707. Rockport Quarry limestone; Kelley's Island Lime and Transport Company Quarry, Rockport, Alpena County, Michigan.</p>  |      |
| <p>FIG. 12. Longitudinal section of a corallite of same specimen as Figure 10 showing numerous, very thin, and steeply inclined dissepiments and very long, thin, steeply inclined carinae.</p>   |      |

## EXPLANATION OF PLATE VII

(All figures  $\times 2$ )

PAGE

*Cylindrophyllum grabau* Ehlers and Stumm, sp. nov. .... 24

FIGS. 1-3. Transverse sections of three corallites of a specimen showing length of major and minor septa and numerous, very closely set and thickened carinae in dissepimentarium and axial attenuation of major septa in tabularium. Holotype No. 25671. Thunder Bay limestone; north shore of Partridge Point, about four miles south of Alpena, Michigan.

FIG. 4. Longitudinal section of a corallite of same specimen as Figure 1 showing tabulae, periaxial tabellae, dissepiments and infundibuliform zones of thickened carinae.

FIG. 5. Transverse section of three corallites of a specimen showing unusually short major septa in largest corallite. Paratype No. 25672. Same horizon and locality as holotype (No. 25671).

*Disphyllum compactum* Ehlers and Stumm, sp. nov. .... 22

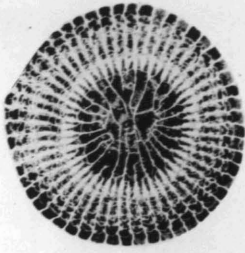
FIG. 6. Longitudinal section of a corallite of specimen showing wide tabularium with complete and incomplete tabulae, and dissepimentarium. Holotype No. 25685. Potter Farm formation; Orchard Hill, Alpena County, Michigan.

FIGS. 7-9. Transverse sections of three corallites of same specimen as Figure 6 showing length of major and minor septa.

FIGS. 10-11. Longitudinal sections of two corallites of same specimen as Figure 6 showing convexity of tabulae and interspersed globose and elongate dissepiments.

FIG. 12. Longitudinal section of two corallites of a specimen showing few periaxial tabellae. Paratype No. 25683. Same horizon and locality as holotype (No. 25685).

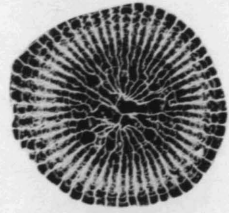
PLATE VII



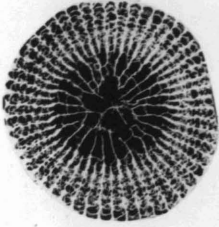
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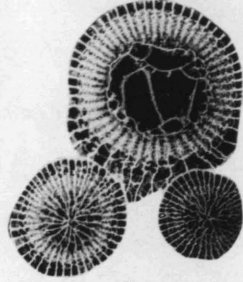
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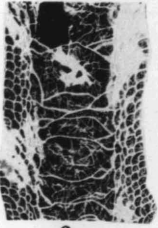
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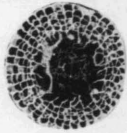
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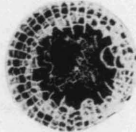
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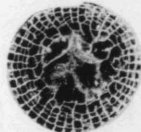
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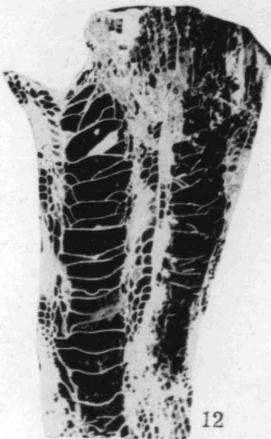
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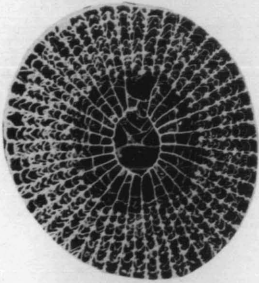


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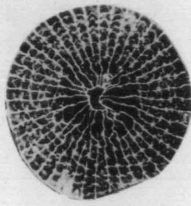


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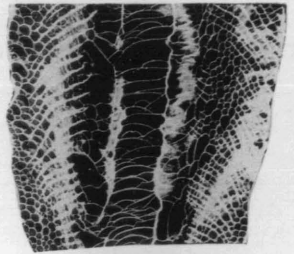
PLATE VIII



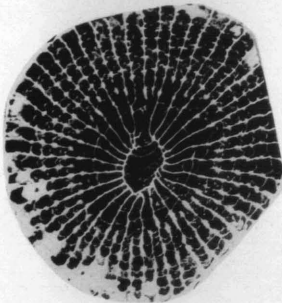
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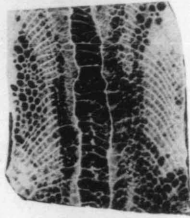
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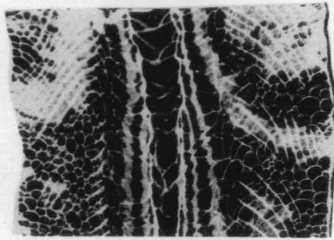
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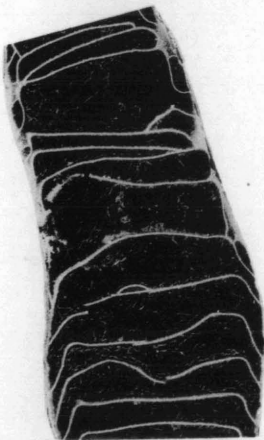
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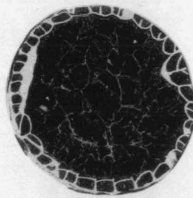
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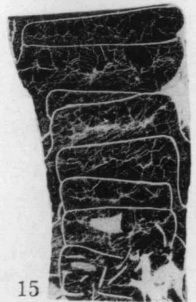
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## EXPLANATION OF PLATE VIII

(All figures  $\times 2$ )

- |   | PAGE |
|---|------|
| <i>Eridophyllum archiaci</i> (Billings) .....   | 29   |
| FIG. 1. Transverse section of a corallite of specimen showing carinated major and minor septa and aulos open in the direction of the cardinal septum. Hypotype No. 23861. Bioherm in Four Mile Dam formation; Four Mile Dam, Thunder Bay River, Alpena County, Michigan.  |      |
| FIG. 2. Transverse section of a corallite of a specimen showing similarity in structure to that of Figure 1. Hypotype No. 25648. Hungry Hollow formation—coral bed; bluff along Ausable River in Hungry Hollow, two miles east and three-fourths of a mile north of Arkona, Ontario, Canada.                                |      |
| FIGS. 3-4. Transverse and longitudinal sections of a smaller corallite of a specimen showing slightly narrower aulos than present in most corallites and distortion of aulos resulting from differences in development of axial ends of major septa. Hypotype No. 23859. Same horizon and locality as original of Figure 1. |      |
| FIG. 5. Longitudinal section of a corallite of specimen illustrated in Figure 2 showing wide dissepimentarium with globose dissepiments, steeply inclined carinae, aulos with complete tabulae, and zone of tabulae outside aulos.  |      |
| FIG. 6. Longitudinal section of a corallite of specimen illustrated in Figure 1 showing same structures as those in Figure 5.   |      |
| <i>Eridophyllum subcaespitosum</i> (Nicholson) .....  | 30   |
| FIG. 7. Longitudinal section of a corallite showing relatively narrower dissepimentarium and wider aulos than those of <i>E. archiaci</i> . Hypotype No. 25655. Same horizon and locality as original of Figure 2.  |      |
| FIGS. 8-10. Serial transverse sections of same specimen as in Figure 7 showing completely closed aulos in neanic growth stage.  |      |
| <i>Depasophyllum adnetum</i> Grabau .....   | 30   |
| FIG. 11. Longitudinal section made by A. W. Grabau of a small specimen showing tabulae joining previously formed tabulae at points of deflection of latter. Syntype No. 25651i. Bioherm in Four Mile Dam formation; Four Mile Dam, Thunder Bay River, Alpena County, Michigan.  |      |
| FIG. 12. Longitudinal section of a large corallite showing overlapping of the deflected tabulae, the peripheral ends of which reach the wall. Hypotype No. 23702. Four Mile Dam formation—Dock Street clay member; quarry of Thunder Bay Quarries Company, Alpena, Michigan.  |      |
| FIG. 13. Transverse section of same specimen as Figure 12 showing short septa and deflected parts of tabula.  |      |
| FIG. 14. Transverse section of a specimen having a structure similar to that of Figure 13. Hypotype No. 23700. Same horizon and locality as syntype illustrated in Figure 11.   |      |
| FIG. 15. Longitudinal section of same specimen as Figure 14 showing some tabulae deflected to walls and others to previously formed tabulae.  |      |









## VOLUME VIII

1. *Pachyphyllum vagabundum*, a New Coral from the Upper Devonian Strata of New York, by George M. Ehlers. Pages 1-6, with 3 plates. Price \$.30.
2. Techniques of Collecting Microvertebrate Fossils, by Claude W. Hibbard. Pages 7-19, with 4 plates. Price \$.50.
3. Corals of the Devonian Traverse Group of Michigan. Part II, *Cylindrophyllum*, *Depasophyllum*, *Disphyllum*, *Eridophyllum*, and *Synaptophyllum*, by George M. Ehlers and Erwin C. Stumm. Pages 21-41, with 8 plates. Price \$.75.

