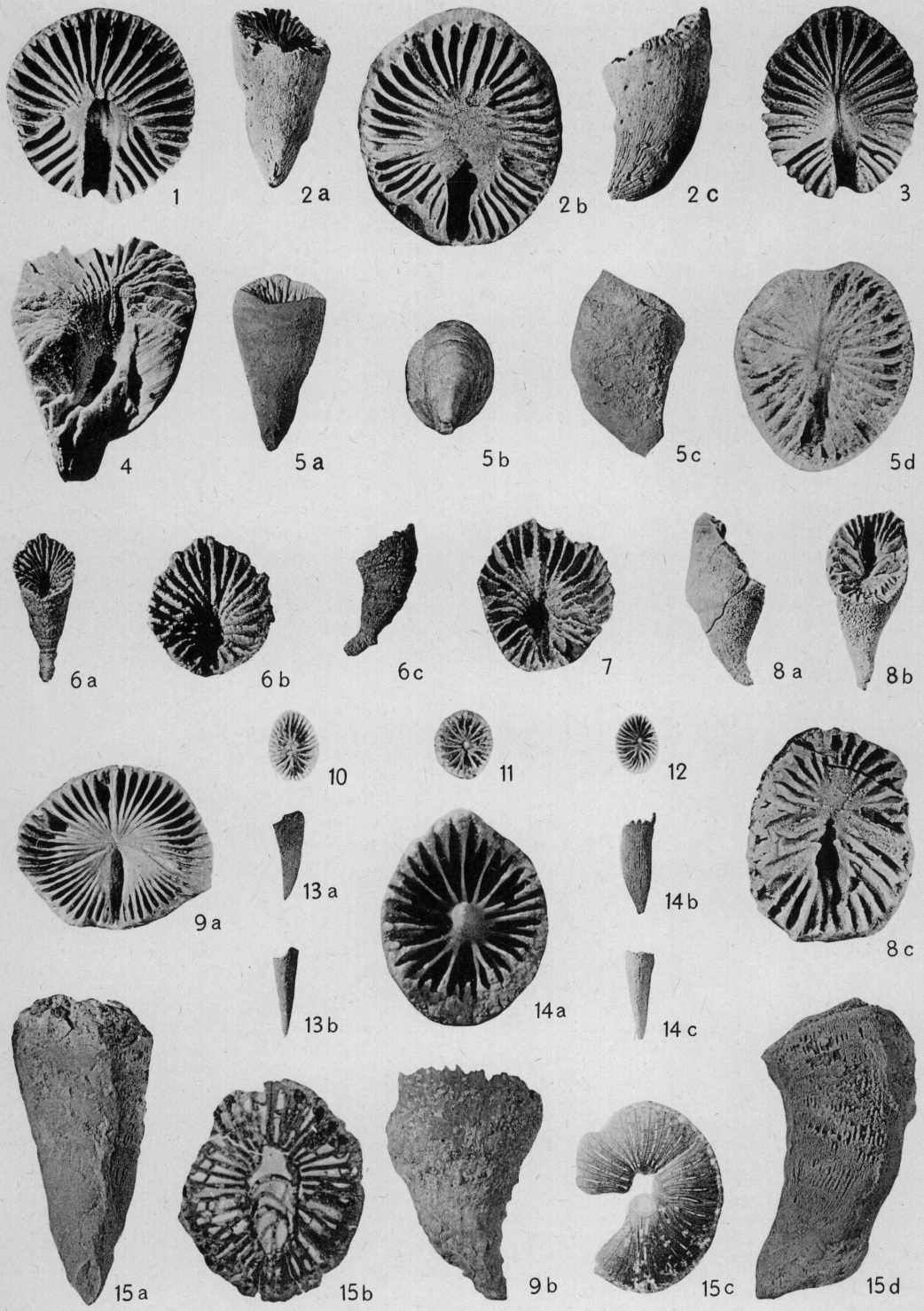

Easton, Mississippian cuneate corals

Description.—Holotype with faint longitudinal markings following the traces of the septa. Major septa 34 alternating with very short minors; five majors in each cardinal quadrant. Positions of a tabula are visible in the cardinal fossula. Alar pseudofossulae indistinct. Otherwise as in *T. clinatus.*

Dimensions.—Holotype: length, 21.5 mm. (incomplete); greatest diameter of calyx, 19 mm.; least diameter of calyx, 13 mm. (incomplete).

Comparison.—This variety differs from the typical form of the species in having two sharp edges due to compression, and in being compressed even at the calical rim.

Material.—Specimens studied: 17. Holotype, USC No. 280. Figured paratypes USC No. 279, 406. Unfigured paratypes, USC No. 282. Topotypes, USC No. 407. Figured hypotypes USC No. 408. Other specimens, USC No. 405.

Localities.—6, 7, 8.

Occurrence.—The type locality is near the base of the upper Warsaw (Harrodsburg) limestone (Meramecian series, Mississippian system) in an exposure about 4 feet high on the north side of highway 62, between the two quarries and the bridge over Little Indian Creek, between Corydon and Lanesville, Indiana.

Remarks.—This variety grades into typical *T. clinatus.*

TRIPLOPHYLLITES (TRIPLOPHYLLITES) CLINATUS var. CAPULIFORMIS (Rowley), 1900

Plate 60, figures 7–9; text-figure 8

1900. *Zaphrentis capuliformis* ROWLEY, Amer. Geol., vol. 25, no. 5, p. 270, pl. 5, figs. 67–70. (in part).

1908. *Zaphrentis capuliformis.* ROWLEY, Missouri Bur. Geol. Mines, ser. 2, vol. 8, p. 38.

Description of holotype.—Corallite (UI No. RX 11) a simple short, flaring, cone, curved toward the cardinal fossula and with an elliptical cross-section. The keel at the counter position is weakly developed. Epitheca with faint encircling striae and a few indistinct encircling constrictions. Calyx (diameters 16.5 by 17.5 mm.) 3 mm. deep with a broad floor developed on the axial portions of the septa. Cardinal fossula deep, narrower at its midlength than at either end, and bounded laterally by the fused ends of septa. Cardinal septum indistinct. Major septa total 36. Right and left cardinal quadrants with six major septa of which the first on either side of the cardinal septum is indistinct. Right counter quadrant with 11 major septa of which the first adjacent to each alar pseudofossula is very short. Counter septum axially swollen and longer and little higher than adjacent majors which converge pinnately toward it. Alar pseudofossulae prominent but narrow. Minor septa as septal ridges. Tabulae presumably are responsible for the floor of the cardinal fossula. Dissepiments possibly present in right counter quadrant.

A paratype (UI RX 11A) (diameters 17 by 18.5 mm. incomplete) has eight majors in the right cardinal quadrant and 11 in each of the counter quadrants. The left cardinal quadrant is obliterated. The counter septum is longer and higher than the adjacent pinnately arranged majors, but is not axially swollen. Minor septa are short. Perhaps the calyx originally contained 40 major septa. The counter edge of the coral is produced into a prominent ridge-like keel.

Another paratype (UI No. RX 11C) (diameters 13.5 by 15 mm.) has six majors in each cardinal quadrant and nine in each counter quadrant. The counter septum is longer and higher than the adjacent pinnately arranged majors and is axially swollen. Major septa total 32.

Dimensions.—Holotype: 11 mm. high; alar septum 15 mm. long.

Material.—Specimens studied: 3. UI (Rowley collection). Holotype: (Rowley, 1900, pl. 5, figs. 67, 68) RX 11. Largest paratype (Rowley, 1900, pl. 5, figs. 69, 70). RX 11A. Poorest paratype: RX 11C.

Occurrence.—Localities: 23 (type locality), 24.

Remarks.—Rowley did not designate a holotype but he did mention (Rowley, 1900, p. 273) that figs. 67, 68 of his plate 5 represented views of "one of the types." This specimen which he figured, which is University of Illinois (Rowley collection) No. RX 11, is hereby designated the holotype. The other three specimens, which he may or may not have intended to be syntypes, become paratypes. One of these

(UI, RX 11B) is described under *T. clinatus* instead of with the other types.

The dissepiments mentioned in the description of the holotype are a few blister-like swellings on the calical walls. It cannot be said that they are definitely dissepiments without sectioning them; this operation was not done.

This variety of *T. clinatus* contains enough variation among the types to show how modifications gave rise to the typical form. By comparing the figures, one can observe the *T. clinatus* trend going from the holotype (RX 11) to the two paratypes (first RX 11A and then RX 11C).

Rowley's figures of the calices are largely based on presumption. The writer cleaned considerable matrix out of all the specimens in order to reveal their characters.

I do not find any ridge on the cardinal side of the corals, which Rowley said was more or less distinct. At best the corals are only sharply rounded there as a result of their having elliptical cross-sections.

Mature specimens of this variety may be distinguished from the typical form by having a more widely flaring shape, more numerous septa, and a thinner epitheca. Otherwise they are quite similar.

Subgenus HOMALOPHYLLITES Easton, 1944 emended

Diagnosis.—*Triplophyllites* with the cardinal fossula on the convex side of the corallite.

Type.—*Lophophyllum calceola* White and Whitfield, 1862.

Remarks.—Previously the writer (Easton, 1944, p. 42) revised the concept of *Hapsiphyllum* Simpson, 1900 to include corals with the features of *Lophophyllum calceola*. The subgenera *Hapsiphyllum* and *Homalophyllites* were established at the same time. Although that seemed to provide an orderly systematic arrangement at that time, it is not found to be satisfactory now. The writer subsequently has seen many specimens of corals similar to *L. calceola* and *Hapsiphyllum calcariforme* in new species to be described or redescribed in the future. It is concluded that the subgenus *Homalophyllites* should be separated from the genus *Hapsiphyllum* and assigned to the genus *Triplophyllites*.

If *Zaphrentoides* should be proved to be the same as *Triplophyllites* then the subgenus *Zaphrentoides* can be used to replace *Homalophyllites* of this paper. This would revive the taxonomic category established by Schindewolf in 1938 for the particular corals with the cardinal fossula on the convex side of the corallite. It would not, however, revive Schindewolf's usage of the subgenus *Hapsiphyllum*.

Corals with circular cross-sections, cuneate, and calceolid shapes occur in this subgenus. Species groups are established to segregate the three categories.

Homalophyllites calceolus species group

Diagnosis.—*Homalophyllites* with a calceolid shape.

Remarks.—*Lophophyllum calceola* White and Whitfield, 1862 belongs here.

Homalophyllites reversus species group

Diagnosis.—*Homalophyllites* with a circular cross-section.

Remarks.—The writer (Easton, 1944, p. 39) once theorized that *Z. reversa* Worthen, 1890 might warrant the separation of *Triplophyllites* into subgenera on the basis of location of the cardinal fossula with respect to curvature. At that time *Z. reversa* had not been figured and so was poorly known. It and other corals considered herein are known now to fit the requirement formerly stated for the recognition of the atypical subgenus. *Z. reversa*, however, is not a suitable type for reasons stated below.

TRIPLOPHYLLITES (HOMALOPHYLLITES) REVERSUS (Worthen), 1890

Plate 61, figures 9a, b

1889. *Zaphrentis reversa* MILLER, North American Geology and Palaeontology, p. 210. (nomen nudum).
1890. *Zaphrentis reversa* WORTHEN, Geol. Survey Illinois, vol. 8, p. 78.
1898. *Zaphrentis reversa*. WELLER, U. S. Geol. Survey Bull. 153, p. 648.

Description of holotype.—Coral a curved cone with an apical angle of 40–45°. Theca with short spines arranged more or less in concentric bands, with broad undulations of growth, and with faint longitudinal striations. Calyx moderately deep (9 mm. deep

to floor of calyx). Cardinal fossula deep, on the convex side of the corallites, extending to the center of the calyx, and widest about ⅔ of the way to the center. Alar pseudofossulae prominent. Major septa number 49, and most of them extend across the calical floor. Cardinal septum extends straight across the cardinal fossula at its floor but is very short above the fossular floor. Right and left cardinal quadrants each contain ten septa, of which the alar septa are slightly more robust than the others. Right counter quadrant contains 14 majors. The counter septum is slightly more robust and is slightly higher than its neighbors. In the left counter quadrant, the seventh and thirteenth septa (counting clockwise) are aborted and their positions are marked by extra wide loculi.

Material.—Specimens studied: 1. Holotype and only known specimen, IGS (Worthen Collection) No. 2567.

Type locality.—Warsaw beds, near Columbia, Monroe Co., Illinois.

Locality.—14 (type locality).

Remarks.—Only one specimen of the species is known, although numerous paleontologists have collected from beds of Warsaw age. Under the circumstances, the specimen may be merely a sport. Moreover, the specimen is known to be aberrant in the abortion of the seventh and thirteenth septa of the left counter quadrant. Not only are these septa reduced to ridges, but their allotted position near the axis has been taken over by adjacent septa. This indicates that the shortening of the two septa took place during the earlier ontogeny of the creature. In view of these things, it may be that the species group may contain only this one species among American Mississippian corals.

T. reversus has not been figured previously, probably because extensive preparation was necessary before the calyx was cleaned of matrix.

Homalophyllites compressus species group

Diagnosis.—*Homalophyllites* with a cuneate shape.

Remarks.—*Zaphrentis compressa*, *Z. lanceolata* and an undescribed species from Arizona belong here.

TRIPLOPHYLLITES (HOMALOPHYLLITES) sp.
Plate 61, figures 8 a–c; text-figure 12

Remarks.—The specimen discussed below was very kindly lent by Dr. Alexander Stoyanow from his collection. The species will be described by Dr. Stoyanow in a forthcoming article on the index fossils of Arizona, but he has graciously consented to the publication of this statement so that all of the cuneate corals known to the writer may be included in this paper.

The specimen is slightly cuneate and has the cardinal fossula on the convex side of the coral. It is similar to *T. (T.) ellipticus* in most respects except for location of the cardinal fossula with respect to curvature. It also resembles *Clinophyllum* except that the inclination of tabulae and location of cardinal fossula are reversed with regard to curvature. In the course of time the phylogenetic relationships of *Clinophyllum* to *Triplophyllites* should be studied critically when enough species and specimens allied to this specimen from the Escabrosa limestone are known.

TRIPLOPHYLLITES (HOMALOPHYLLITES) COMPRESSUS (Milne-Edwards), 1857
Plate 59, figures 5, 7, 19; text-fig. 5

1857. *Zaphrentis compressa* MILNE-EDWARDS, Histoire Naturelle des Coralliaires ou Polypes Proprement Dits, Atlas, pl. G1, fig. 3.
1860. *Zaphrentis compressa.* MILNE-EDWARDS, Histoire Naturelle des Coralliaires ou Polypes Proprement Dits, vol. 3, p. 342.
1876. not *Zaphrentis compressa* ROMINGER, Geol. Survey Michigan, vol. 3, pt. 2, p. 151, pl. 52 [=*Z. davisana* Miller, 1889, p. 209].
1889. *Zaphrentis compressa.* MILLER, N. Amer. Geol. and Palaeontology, p. 208.
1898. *Zaphrentis compressa.* WELLER, U. S. Geol. Survey Bull. 153, p. 646.
1904. *Zaphrentis compressa.* GREENE, Contributions to Indiana Palaeontology, pt. 18, p. 177, pl. 52, figs. 8–11.
1906. *Zaphrentis compressa.* BEEDE, in Cumings and Beede, Indiana Dept. Geol. Nat. Res., 30th Ann. Rept., pp. 1204, 1373, pl. 7, figs. 4–4d.
1922. *Triplophyllum compressa.* BUTTS, Kentucky Geol. Survey, ser. 6, vol. 7, pp. 110, 112–116.
1922. *Zaphrentis compressus.* CUMINGS, Handbook of Indiana Geology, Indiana Dept. Cons., Pub. 21, pt. 4, p. 505.
1930. *Zaphrentis compressa.* MORSE, Mississippi Geol. Survey Bull. 23, p. 110.

1943. *Triplophyllum compressa.* McFARLAN, Geology of Kentucky, p. 75.
1943. *Triplophyllum compressum.* SCHUCHERT, Stratigraphy of the Eastern and Central United States. John Wiley and Sons, Inc., New York, p. 531.
1943. *Z.* [*aphrentis*] *compressa.* SCHUCHERT, Stratigraphy of the Eastern and Central United States. John Wiley and Sons, Inc., New York, p. 591.

Translation of Original Description

Corallite strongly compressed, cuneiform, narrow, pointed at the bottom, straight or scarcely curved in the direction of the large axis of the calyx. Growth lines very little developed. Calyx elliptical, of which the little axis amounts to nearly half the large axis. The uppermost tabula is only flat at the axis for a short distance. The oblong septal [cardinal] fossula is well developed and very deep, located on the side of large curvature. Septa 22, subequal, strong, a little thickened in their outer half, well developed, straight, and alternating with an equal number of very small septa. Height of corallite, 2½ centimeters; large axis of the calyx at least 1 centimeter.

Carboniferous formation: Spurgen [sic] Hill (Indiana).

We consider as a variety of this species a corallite, (pl. G1, fig. 4) from the same locality, which is much shorter and wider than the specimens previously described, the uppermost tabula of which is flat for a greater extent, and in which there are 30-odd major septa.

Remarks.—Milne-Edwards figured only one of the species referred to above. These figures are reproduced herein. The unnamed variety of this species, which he mentioned in the text as being figure 4 on plate G1, does not appear there or elsewhere in the Atlas, nor is it mentioned in the legends accompanying the figures.

All efforts to locate the type specimens have been unavailing. Although Milne-Edwards states (1860, p. 342) that the specimens were discovered by Casseday, he does not say what disposal was made of them. M. Ranson, of the Museum d'Histoire Naturelle in Paris assures me that they are not there. Casseday's collection is missing, but rumor has it that some of it, at least, was at the St. Louis Academy of Sciences for a time.

Lacking the types, the writer has selected a specimen as principal hypotype (USNM No. 37286) which agrees very closely with the best figure given by Milne-Edwards (1857 (Atlas), pl. G1, fig. 3b). M. Ranson has pointed out to the writer that there is good reason to believe that figures 3 b and 3a in the work just referred to are actually different specimens. The explanation of the plates in that work frequently distinguishes between two views of the same specimen, as opposed to views of different specimens. Inasmuch as a definite statement such as "Calice du même, grossie" is lacking and one only finds "Calice grossi," the evidence is strong that Milne-Edwards had two specimens before him.

A further problem concerns on which side of the specimen the cardinal fossula is located. The figures do not help one to decide. The description says merely that the fossula is on the side of "la grande courbure." If one understands this to mean the most curved side, then the connotation is of greatest radius of curvature and the fossula would be on the concave side when viewed from an alar side. If one understands Milne-Edwards to have indicated a side with a long arc as opposed to a side with a short arc, then the fossula would be on the convex side. Fortunately, Milne-Edwards (and his colleague Haime) were singly and collectively consistent in their usage of the particular phraseology. By checking descriptions of species whose location of cardinal fossulae is known and by comparing illustrations with accompanying descriptions of other species, one can demonstrate to one's own satisfaction that "la grande courbure" means the convex side when viewed from an alar side.

Having eventually discovered what *Zaphrentis compressa* is like, the writer selected a specimen which agrees very closely with figure 3b of Milne-Edwards. This (largest) specimen, from the same locality, is described below as a hypotype.

Description of hypotypes of Homalophyllites compressa.—Largest specimen narrowly elliptical throughout, straight. Epitheca somewhat eroded showing septal traces. Calyx with very prominent elongate cardinal fossula whose floor slopes down steeply from the slightly sloping smooth calical floor. Cardinal septum short at distal end but reaching across fossula proximally and slightly bent to the right. Counter septum slightly longer than other majors. Cardinal quadrants each contain four major septa. Counter quadrants each contain seven major septa. Total major septa,

therefore, number 24. Minor septa intercalated between some major septa. Alar pseudofossulae very weakly developed. Length, 25 mm.; calical diameters, 7 by 11 mm.

Three specimens are distinctly curved. In each, the cardinal fossula is on the convex side. Several specimens show the epitheca to have been smooth except for occasional encircling furrows. Some specimens may expand, then diminish their diameter, and expand again. In such instances, that portion including the latter expansion is usually less compressed than the rest of the calyx. The counter septum may be long, short, thick, thin, in a faint fossula, or lacking fossular expression. As variable as it is, it is curious that something usually distinguishes it in single or combined form from the preceding list.

Material.—Specimens studied: ten. Figured hypotypes: USNM No. 37286. Other hypotypes, USNM Nos. 115202, 115202a. Other specimens: USNM No. 115211.

Localities.—6, 10, 11.

Occurrence.—*T.* (*H.*) *compressus* occurs in the Salem limestone.

TRIPLOPHYLLITES (HOMALOPHYLLITES) COMPRESSUS var. LANCEOLATUS (Worthen), 1890

Plate 59, figures 1–4, 6, 8–18; text-figure 4

1889. *Zaphrentis lanceolata* MILLER, North American Geology and Palaeontology, p. 209 (nomen nudum).
1890. *Zaphrentis lanceolatus* WORTHEN, Geol. Survey Illinois, vol. 8, p. 76, pl. 10, figs. 4, 4a (in part).
1890. *Zaphrentis lanceolata*. WORTHEN, Geol. Survey Illinois, vol. 8, expl. pl. 10.
1898. *Zaphrentis lanceolata*. WELLER, U. S. Geol. Survey Bull. 153, p. 648.
1926. *Triplophyllum* (*Zaphrentis*) *compressa*. BUTTS, Geol. Survey Alabama, Spec. Rept. 14, p. 173.
1926. *Zaphrentis compressa*. BUTTS, Geol. Survey Alabama, Spec. Rept. 14, p. 56, figs. 6, 7.

Description of holotype of Zaphrentis lanceolatus *Worthen, 1890.*—Corallite in the form of an elliptical cone with slight obliquity toward the cardinal fossula. The cross-section changes from the apex so that in the proximal portion the cross-section is a narrow ellipse, but in the distal portion it becomes less excentric, and, therefore, is broadly elliptical at the calyx rim. Theca smooth except for faint encircling wrinkles.

Calyx shallow (about 3 mm. deep) and with the septa everted about 1 mm. beyond the thecal rim. The outer fourth of each major septum slopes down abruptly to the theca but gradually to the calyx floor. Cardinal fossula deep, narrow, and parallel-sided in the inner half. Alar pseudofossulae not differentiated but the position of the alar septum can be approximated by the slight bunching together of septa into four groups. Cardinal septum reaches almost to the axis in the floor of the fossula and is directed slightly to the left (when the cardinal fossula is orientated downward). In the calyx the cardinal septum extends about one-third the radius. Counter septum is a trifle longer and higher than the other majors near the axis, but is entirely similar to them near the theca. The calyx contains 22 major septa distributed as follows: the cardinal septum, four in each cardinal quadrant, six in each counter quadrant, and the counter septum. Short minor septa are distributed alternately with the majors. The minor septum on either side of the cardinal septum is longer than the other minors in the lower portion of the fossula and fuses with the next major septum at the fossular wall. These two minor septa are presumably short primary septa, whereas the other minors are secondary septa. Major septa coalesce axially to form a sloping calical floor of stereom. Tabulae were not observed, unless the floor of the fossula is a tabula.

Dimensions.—Height: 21 mm. Long dimension of calyx: 10 mm. Short dimension of calyx: 9 mm.

Localities.—1, 5, 6, 9, 10, 19 (type locality), 13, 20, 21, 25.

Material.—Specimens studied: 64. Holotype: IGS (Worthen collection) No. 2572. Other material: AMNH Nos. 24003–24006 (Greene's figured hypotypes of *Zaphrentis compressa*); USNM No. 71629 (Butt's figured hypotype of *Zaphrentis compressa*), 50771, 42878, 41229, 115207–115210.

Remarks.—Worthen left two syntypes of this species. One of these, which fits his measurements of an "average size specimen" and which he figured on pl. 10, figs. 4, 4a, is here designated the holotype.

The other syntype was figured on pl. 10, fig. 4b, but there is no mention of this figure

in the text or in the explanation of plate 10. The measurements of the specimen fit the two recognizable dimensions of the figure but do not correspond to the measurements given on p. 76 for the "Broadest specimen." Perhaps Worthen took his measurements from the plate and not from the specimen. The specimen is referred in this report to *Triplophyllites clinatus*.

Worthen reports the type locality as "Warsaw beds of the St. Louis group, Spergen Hill, Indiana, and Coalsburg [sic], Ky." The famous collecting locality at Spergen Hill is in the Salem limestone (Iowan series of the Mississippian). There is no Salem limestone around Colesburg, but a good section of the underlying Warsaw limestone and shale is present from which collectors have obtained good faunas through the years. The label accompanying the syntypes reads only "Warsaw beds Coalsburg [sic], Kentucky," hence, this affords presumptive evidence that the syntypes are from the Warsaw formation at Colesburg, Kentucky.

Other specimens before the writer were collected by Greene and constitute the hypotypes to substantiate his identification of *Zaphrentis compressa*. Their label reports them to be from Lanesville, Spergen Hill, and Georgetown, all in Indiana. The first two of these references and probably the third constitute occurrences in the Salem limestones, but one cannot decide which of his specimens came from what locality.

In summation, then, this variety appears to occur in the Warsaw formation and Salem limestone.

The location of the cardinal fossula with respect to curvature is variable in this variety. Most specimens are simply straight cones and so have no convex or concave side. Some other specimens are very slightly curved in the apical portions only, in which cases one finds some specimens to have the fossula on the convex side and others to have it on the concave side. Of the 48 specimens before me which should afford evidence, the location of the fossula with regard to curvature cannot be decided for 32 specimens; is on the concave side of five specimens; and is on the convex side of 11 specimens.

INCERTAE SEDIS

Gen. nov. et sp. nov.

Plate 59, figures 20a–c; text-figure 13

Description.—Corallite simple, large, cuneate. Epitheca eroded to show septal traces, otherwise with only faint broad incircling swellings. Calyx with central depression floored by a tabula on whose surface are septal traces. Cardinal septum very short. Right cardinal quadrant with ten major septa; right counter quadrant with 16 major septa; counter septum joined on either side by contratingent minor septa; left counter quadrant with 20 major septa; left cardinal quadrant with eight major septa; total major septa—56. Minor septa short and contratingent with the major septa. The major septa of the cardinal quadrant are pinnately arranged around the cardinal fossula. Tabulae depressed proximally at the axial region and at their periphery, but bent upward about half the distance from the axis to the periphery.

Dissepiments in as many as two (and possibly more) ranges distally, but seemingly absent proximally. Six dissepiments occur in 1 cm.

Length, 54 mm. Calical diameters, 8 mm. by 28 mm.

Locality.—5.

Material.—Specimens studied: one. This specimen, which carried no number, is in the systematic collections of the U. S. National Museum.

Remarks.—The writer knows of no other coral like this. It combines features of *Triplophyllites* and *Hapsiphyllum* but cannot be referred to either genus as now defined.

LOCALITY LIST

Information as to localities and stratigraphy of specimens not collected by the writer is given as it appeared on the labels. The writer's interpretation of the stratigraphy for all localities is given in terms of present usage in brackets. For pertinent discussions of the vicissitudes of stratigraphic usage see Cumings, 1922; Stockdale, 1929; and Stockdale, 1939.

1. Colesburg, Kentucky. Warsaw beds. [Muldraugh formation—upper Harrodsburg limestone.]

2. Colesburg, Kentucky. Warsaw-Somerset beds. [Muldraugh formation—base of Salem limestone.]
3. West Point, Kentucky. Salem (Spergen) limestone. (One label reads "Keok. group.") [Salem limestone.]
4. Edwardsville, Indiana. Warsaw stage. [Edwardsville division—upper Harrodsburg limestone.]
5. Lanesville, Indiana. Salem (Spergen) limestone. [Salem limestone.]
6. Spergen Hill, Indiana. Salem (Spergen) limestone. [Salem limestone.]
7. Abandoned quarry 0.2 mi. east of bridge over creek 2.4 mi. north of intersection of 5th and M Streets, Bedford, Indiana. (NE ¼, NW ¼, sec. 2, T. 5 N., R. 1 W.) [Base of lower Harrodsburg limestone.]
8. Road cut about 4′ high on north side of highway 62, between two quarries and bridge over Little Indian Creek, about 1.9 mi. W. of the west edge of Lanesville, Indiana. SE ¼, sec. 25, T. 3 S., R. 4 E. [Near top of upper Harrodsburg limestone.]
9. Clarksville, Tennessee. Warsaw. 10–20′ level. [Warsaw formation?]
10. Clarksville, Tennessee. Warsaw, 25–30′ level. [Warsaw formation?]
11. Lawrence Co., Indiana [Salem limestone?]
12. Warsaw formation, St. Louis stage, Mississippian period. Georgetown and Lanesville, Harrison Co., Indiana. [Salem limestone.]
13. Warsaw formation, St. Louis stage, Mississippian period. Lanesville, Harrison Co., Indiana. [Salem limestone.]
14. Warsaw beds. Near Columbia, Monroe Co., Illinois. [Warsaw formation.]
15. Keokuk limestone, Bentonsport, Iowa. [Keokuk limestone.]
16. Maynes Creek member of the Hampton formation. Quarry, Marshall Co., Iowa. [Maynes Creek member.]
17. Base of Burlington limestone, Burlington, Iowa. [Burlington limestone.]
18. Keokuk group, Colesburg, Kentucky. [Borden group.]
19. Lanesville, Spergen Hill, and Georgetown, Indiana. Warsaw formation, St. Louis stage, Mississippian period. [Salem limestone.]
20. Fort Payne chert. Florence, Lauderdale Co., Alabama. [Fort Payne formation.]
21. Warsaw. First R.R. bridge S. of Colesburg, Kentucky. [Muldraugh formation.]
22. Kinderhook group. Burlington, Iowa. [Kinderhook group and possibly lowest Osage group.]
23. Fifth division of the Burlington limestone of Rowley's classification, Louisiana, Mo. [Probably the base of the upper Burlington limestone.]
24. Fourth lower Burlington division of Rowley's classification, Louisiana, Mo. [Top of the lower Burlington limestone.]
25. West face of easternmost of two quarries on Highway 62 about 6.5 miles east of intersection of Chestnut and Market Streets in Corydon, Indiana. [Basal 10 feet of Salem limestone.]

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