

CONTRIBUTIONS FROM THE MUSEUM OF PALEONTOLOGY

THE UNIVERSITY OF MICHIGAN

Vol. XVIII, No. 2, pp. 23-31 (2 pls.)

MARCH 20, 1963

---

ORDOVICIAN STREPTELAS MID RUGOSE CORALS  
FROM MICHIGAN

BY  
ERWIN C. STUMM

FROM THE  
EDWARD PULTENEY WRIGHT MEMORIAL VOLUME



Publication of this paper is made possible by the  
Federal-Mogul-Bower Bearings, Inc.  
Paleontology Research Fund

MUSEUM OF PALEONTOLOGY  
THE UNIVERSITY OF MICHIGAN  
ANN ARBOR

# CONTRIBUTIONS FROM THE MUSEUM OF PALEONTOLOGY

*Director:* LEWIS B. KELLUM

The series of contributions from the Museum of Paleontology is a medium for the publication of papers based chiefly upon the collection in the Museum. When the number of pages issued is sufficient to make a volume, a title page and a table of contents will be sent to libraries on the mailing list, and to individuals upon request. A list of the separate papers may also be obtained. Correspondence should be directed to the Museum of Paleontology, The University of Michigan, Ann Arbor, Michigan.

VOLS. II-XVII. Parts of volumes may be obtained if available.

## VOLUME XVIII

1. Morphology and Taxonomy of the Cystoid *Cheirocrinus anatiformis* (Hall), by Robert V. Kesling. Pages 1-21, with 4 plates.
2. Ordovician Streptelasmid Rugose Corals from Michigan, by Erwin C. Stumm. Pages 23-31, with 2 plates.

## ORDOVICIAN STREPTELAS MID RUGOSE CORALS FROM MICHIGAN

BY  
ERWIN C. STUMM

### CONTENTS

Introduction .....	23
Previous work .....	24
Systematic descriptions .....	24
Genus <i>Lambeophyllum</i> Okulitch .....	24
<i>Lambeophyllum profundum</i> (Conrad) .....	24
<i>Lambeophyllum apertum</i> (Billings) .....	24
Genus <i>Streptelasma</i> Hall .....	25
<i>Streptelasma corniculum</i> Hall .....	25
<i>Streptelasma husseyi</i> , sp. nov. ....	26
<i>Streptelasma rusticum</i> (Billings) .....	26
<i>Streptelasma arcticum drummondense</i> , subsp. nov. ....	27
Literature cited .....	28
Plates .....	29 (after)

### INTRODUCTION

THIS PAPER presents the results of a study of the Ordovician streptelasmid rugose corals of Michigan, together with a few specimens of *Lambeophyllum profundum* (Conrad) and *Streptelasma breve* Winchell & Schuchert from Wisconsin. Two species of *Lambeophyllum* from Michigan, *L. profundum* (Conrad) and *L. apertum* (Billings), are illustrated. Three species and one subspecies of *Streptelasma* from Michigan are described or indicated and illustrated. One of these, *S. husseyi*, is a new species. Another, *S. arcticum drummondense* is a new subspecies. The others, *S. corniculum* (Hall) and *S. rusticum* (Billings) are also known from eastern North America and the Ohio Valley. A neotype for *Lambeophyllum profundum* (Conrad) is chosen from the type locality. The specimens from Michigan were collected by Professor R. C. Hussey and myself; those from Wisconsin are part of the Raymond R. Hibbard collection purchased by The University of Michigan.

All specimens illustrated herein are catalogued in the Museum of Paleontology, The University of Michigan.

## PREVIOUS WORK

Carl Rominger (1876, pp. 142-43, Pl. LI, upper tier) described five specimens of corals from Michigan under the name of *Streptelasma corniculum* Hall. Only the upper of the four small specimens shown on the left side of the upper tier on Rominger's plate is preserved in The University of Michigan collections. It is from Trenton strata, very likely from the vicinity of Chandler Falls, Delta County, Michigan, and is probably identified correctly. The largest specimen in the upper tier of the plate is from the Richmond of Drummond Island, Michigan, and is probably a representative of *Streptelasma rusticum* (Billings). The specimen is missing from The University of Michigan collections.

R. C. Hussey (1926, p. 147), reported the presence of *S. rusticum* from the Richmond of Stonington Peninsula, Delta County, Michigan. The same author (1936, p. 238) reported the presence of *Lambeophyllum profundum* in the Bony Falls limestone. Again (1952, pp. 18, 20), Hussey reports *Lambeophyllum* from the Bony Falls limestone. In the same paper (pp. 22, 26, 46) he reports *Streptelasma corniculum* from the Chandler Falls limestone and of *Streptelasma rusticum* from the Richmond beds on Drummond Island. In the same publication (Pl. VIII, Fig. 10) he illustrates a specimen of *S. corniculum* (herein reproduced on Pl. I, Figs. 2-3) and on Pl. IV, Fig. 12 he illustrates *Streptelasma* sp. a specimen herein designated the holotype of *S. husseyi*, sp. nov.

## SYSTEMATIC DESCRIPTIONS

Genus *Lambeophyllum* Okulitch

*Lambeophyllum* Okulitch, 1938, pp. 100-101.

*Type species*.—By original designation, *Cyathophyllum profundum* Conrad, 1843, p. 335, Platteville limestone, Mineral Point, Wisconsin.

*Lambeophyllum profundum* (Conrad)

(Pl. I, Figs. 17-18, 24-26)

*Cyathophyllum profundum* Conrad, 1843, p. 335.

*Streptelasma profundum* Hall, 1847, p. 49, Pl. 12, Figs. 4-4a-e.

*Petraia profunda* Lambe, 1901, p. 105.

*Lambeophyllum profundum* Okulitch, 1938, pp. 101-2.

*Description*.—Corallum simple, conical ranging from 2 to 3 cm long and with a maximum diameter of about 2 cm. Exterior relatively smooth with faint, closely set annulations visible in some areas. Major septa averaging about 40 of which the protosepta prominent, the cardinal long, lying in a long narrow fossula, the alars typically elevated above the

metasepta, and the counter well developed, typically at the elevation of the metasepta. All major septa extending to axis near the base of some coralla but as far as 9 mm above the base in others. Major septa denticulate, formed of fused spines, and thickened around the base of each spine. Minor septa appearing near margin of calyx, composed of short rows of spinules. In longitudinal section of specimens with septa reaching axis above base of calyx only the spinose stereoplasm of the septa visible. No trace of tabulae present.

*Remarks.*—This well-known species is represented in the Ordovician rocks of Michigan.

*Occurrence.*—Middle Ordovician, Black River group, Platteville limestone, Wisconsin; Bony Falls limestone, Michigan; lower part of Ottawa limestone, Ontario; Leray limestone and other beds of Black River age in New York and the Appalachian region.

*Types.*—The original syntypes are apparently lost. The topotype illustrated here (Pl. I, Figs. 17–18) No. 20703, is designated the neotype. Hypotypes Nos. 44326, 45346, 45347, and 45348.

*Lambeophyllum apertum* (Billings)

(Pl. I, Figs. 19–23)

*Petraia aperta* Billings, 1862, p. 102, text-figs. 89a–b; Lambe, 1901, p. 105.

*Lambeophyllum(?) apertum* Okulitch, 1938, p. 102, Pl. 2, Figs. 5–6.

*Remarks.*—This species is distinguished from *L. profundum* by the shallower calyx, thinner, more numerous septa, and by the more nearly radial arrangement of the septa. The serial sections of a specimen (Pl. I, Figs. 19–22) show the septal arrangement at various growth stages. The fossula is not nearly as well defined as it is in *L. profundum*.

*Occurrence.*—Middle Ordovician, Black River group, Ontario; Bony Falls limestone, Michigan.

*Types.*—Hypotypes Nos. 45349 and 45350.

Genus *Streptelasma* Hall

*Streptelasma* Hall, 1847, p. 69.

*Type species.*—By subsequent designation of Roemer, 1861, p. 19, *Streptelasma corniculum* Hall, 1847, pp. 17, 49, 69–71, pl. 25, Figs. 1a–d.

*Streptelasma corniculum* Hall

(Pl. I, Figs. 1–7)

*Remarks.*—This well-known species is the most common rugose coral in the Ordovician of Michigan. Specimens from the type locality (Watertown, New York) and Michigan are illustrated for comparison.

*Occurrence.*—Middle Ordovician, Trenton group, eastern North America; Chandler Falls limestone, Michigan.

*Types.*—Hypotypes Nos. 26868, 45676, 44328, and 44327.

***Streptelasma husseyi*, sp. nov.**

(Pl. I, Figs. 12–16)

*Streptelasma* sp. Hussey, 1952, Pl. IV, Fig. 12.

*Description.*—Corallum wide, ceratoid to trochoid, holotype measuring 29 mm long and 24 mm in maximum diameter. Exterior smooth, without distinct growth annulations. Calyx relatively shallow with steeply sloping walls. In transverse section septa averaging about 100. Major septa extending almost to axis; those in cardinal quadrants thick, in counter quadrants thin. Minor septa very short, occurring as peripheral ridges 0.5 mm long in the late epehebic stage. In longitudinal section tabulae typically incomplete and closely spaced; relatively horizontal or domed axially, sloping downward peripherally.

*Remarks.*—This is the only species of *Streptelasma* with two kinds of major septa. In external form it is similar to *S. breve* Winchell and Schuchert from the Decorah shale of Wisconsin (Pl. I, Figs. 8–11) but differs in having a much shallower calyx, in having the thickened major septa in the cardinal quadrants, and in having a much better developed tabularium.

*Occurrence.*—Middle Ordovician Trenton group, Chandler Falls limestone; Chandler Falls on the Escanaba River, three miles northwest of Escanaba, Delta County, Michigan.

*Types.*—Holotype No. 26869; paratypes Nos. 26867, 26870, and 26905.

***Streptelasma rusticum* (Billings)**

(Pl. II, Figs. 1–3; 8–10)

*Petraia rustica* Billings, 1858, p. 422.

*Zaphrentis rustica* Billings, 1865, p. 106.

*Streptelasma rusticum* Miller, 1889, p. 205. Bassler, 1915, p. 1204 (synonymy through 1915); Cox, 1937.

*Remarks.*—There are undoubtedly several species and subspecies listed under this name in the Richmond group of Ohio and Indiana. Topotype specimens from the Richmond of Lake St. John, Quebec, are ceratoid with an average length of 6.5 cm and an average maximum diameter of about 3.5 cm. The only known, well-preserved, typical specimen from Michigan (Pl. II, Figs. 1–3) has a length of 7.6 cm and a maximum diameter of 4.3 cm. Internal structures are similar to those of topotype specimens (Pl. II, Figs. 8–10).

*Occurrence.*—Upper Ordovician, Richmond group of East-central North America; Stonington Formation, Bay de Noc member, Delta County, Michigan.

*Types.*—Hypotypes Nos. 26911, 45351, and 45352.

***Streptelasma arcticum drummondense*, subsp. nov.**

(Pl. II, Figs. 4-7)

*Description.*—Corallum slender, narrowly ceratoid 4.8 cm long with a maximum diameter of 2.2 cm. Exterior relatively smooth. Calyx shallowly funnel-shaped with a maximum depth of 1 cm. Septa about 100, thick and in lateral contact in peripheral area, gradually attenuating axially. Major septa extending to axis, twisted at their axial ends. Minor septa short, terminating at inner margin of wide peripheral stereozone. Tabulae incomplete, closely set, distally arched.

*Remarks.*—Although the Michigan and Manitoulin Island specimens are narrower than those of the typical subspecies from the type locality they have the same peripheral stereozone and elevated, closely set tabulae.

*Occurrence.*—Richmond group. Drummond Island, Michigan, and Manitoulin Island, Ontario.

*Types.*—Holotype No. 26927; paratypes Nos. 45353, and 45354.

## LITERATURE CITED

- BASSLER, R. S. 1915. Bibliographic Index of American Ordovician and Silurian fossils. U. S. Nat. Mus. Bull., 92.
- BILLINGS, ELKANAH. 1858. New Genera and Species of Fossils from the Silurian and Devonian Rocks of Canada. Can. Naturalist, Vol. 3.
- 1862. Palaeozoic Fossils, Pt. 1, Geol. Surv. Canada, 1865 (Adv. sheets, 1862).
- 1865. Palaeozoic Fossils, Vol. 1, Geol. Surv. Canada.
- CONRAD, T. A. 1843. Proc. Acad. Nat. Sci. Phila., Vol. 1.
- COX, IAN. 1937. Arctic and Some Other Species of *Streptelasma*. Geol. Mag., Vol. 74, No. 1.
- HALL, JAMES. 1847. Palaeontology of New York, Vol. I.
- HUSSEY, R. C. 1926. The Richmond Formation of Michigan. Contrib. Mus. Geol., Univ. Mich., Vol. 2, No. 8.
- 1936. The Trenton and Black River Rocks of Michigan. Michigan Dept. Conservation, Geol. Surv. Div., Publ. 40, Geol. Ser. 34.
- 1952. The Middle and Upper Ordovician Rocks of Michigan. *Ibid.*, Publ. 46, Geol. Ser. 39.
- LAMBE, LAWRENCE. 1901. Contrib. Can. Paleontol., Geol. Surv. Canada, Vol. 4, Pt. 2.
- MILLER, S. A. 1889. North American Geology and Paleontology, Cincinnati, Ohio.
- OKULITCH, V. J. 1938. Some Black River Corals. Trans. Roy. Soc. Canada, 3d Ser., Sec. 4, Vol. 25.
- ROMINGER, CARL. 1876. Fossil Corals. Geol. Surv. Michigan, Vol. 3, Pt. 2.
- WILSON, ALICE E. 1931. Notes on the Baffinland fossils. Trans. Roy. Soc. Canada, 3d Ser. Sec. 4, Vol. 25.

*Manuscript Received, Nov. 9, 1962*



## PLATES

## EXPLANATION OF PLATE I

(Exteriors  $\times 1$ ; Sections  $\times 2$ )

	PAGE
<i>Lambeophyllum profundum</i> (Conrad) .....	24
FIGS. 17-18. Calyx and side views of a specimen from the type locality. Neotype No. 45346. Black River group (Platteville limestone); Mineral Point, Wisconsin.	
FIG. 24. Longitudinal section showing the deep calyx. Hypotype No. 44326. Black River group (Bony Falls limestone); outcrops below Bony Falls Dam on the Escanaba River, about 5 miles north of Escanaba, Delta County, Michigan.	
FIG. 25. Side view of a large specimen in which the septa, composed of fused vertical spines, are clearly visible. Hypotype No. 45347. Black River group (Platteville limestone); Mineral Point, Wisconsin.	
FIG. 26. Longitudinal section of a specimen in which the fused septal spines are conspicuous. Hypotype No. 45348. Black River group (Platteville limestone); same occurrence as original of Figure 25.	

*Lambeophyllum apertum* (Billings) ..... 25

FIGS. 19-22. Serial transverse sections of a specimen showing the septal arrangement. Hypotype No. 45350. Black River group (Bony Falls limestone); outcrops on Escanaba river below Bony Falls Dam, about 5 miles north of Escanaba, Delta County, Michigan.

FIG. 23. Side view of a specimen showing the thin, closely set, spinose septa. Hypotype No. 45349. Same occurrence as original of Figures 19-22.

*Streptelasma corniculum* Hall ..... 25

FIG. 1. External view of a specimen from the general vicinity of the type locality. Hypotype No. 45676. Trenton group (lower Cobourg); quarry at Martinsburg, New York.

FIGS. 2-3. Two views of a Michigan specimen. Hypotype No. 26868. Trenton group (Chandler Falls limestone); Chandler Falls on the Escanaba River, 3 miles north of Escanaba, Delta County, Michigan.

FIGS. 4-6. Serial transverse sections of a specimen from near the type locality. Hypotype No. 44327. Trenton group (lower Cobourg); cut on Watertown-Syracuse Highway, about 6 miles from Watertown (just within the Watertown quadrangle), New York.

FIG. 7. Longitudinal section of a specimen from the general vicinity of the type locality. Hypotype No. 44328. Trenton group (lower Cobourg); same occurrence as original of Figure 1.

*Streptelasma breve* Winchell and Schuchert ..... 26

FIGS. 8-9. Calyx and side views of a typical specimen. Hypotype No. 45602. Black River group (Decorah shale); county road cut 1¼ miles east of junction with U. S. Highway 52, south edge of Cannon Falls, Minnesota.

FIG. 10. Transverse section showing prominent fossula and axial stereozone. Hypotype No. 45600. Same occurrence as original of Figures 8-9.

FIG. 11. Longitudinal section showing few, relatively horizontal tabulae. Same occurrence as original of Figures 8-9.

*Streptelasma husseyi*, sp. nov. .... 26

FIGS. 12-13. Calyx and side views of a typical specimen. Holotype No. 26869. Trenton group (Chandler Falls limestone, *Prasoporina* bed); ledges on bank of Escanaba River below Chandler Falls Dam, 3 miles north of Escanaba, Delta County, Michigan.

FIG. 14. Transverse section of neanic stage. Paratype No. 26870. Same occurrence as original of Figures 12-13.

FIG. 15. Transverse section of ephebic stage showing dilated septa in the cardinal quadrants. Paratype No. 26905. Same occurrence as original of Figures 12-13.

FIG. 16. Longitudinal section showing domed tabulae. Paratype No. 26867. Same occurrence as original of Figures 12-13.

PLATE I

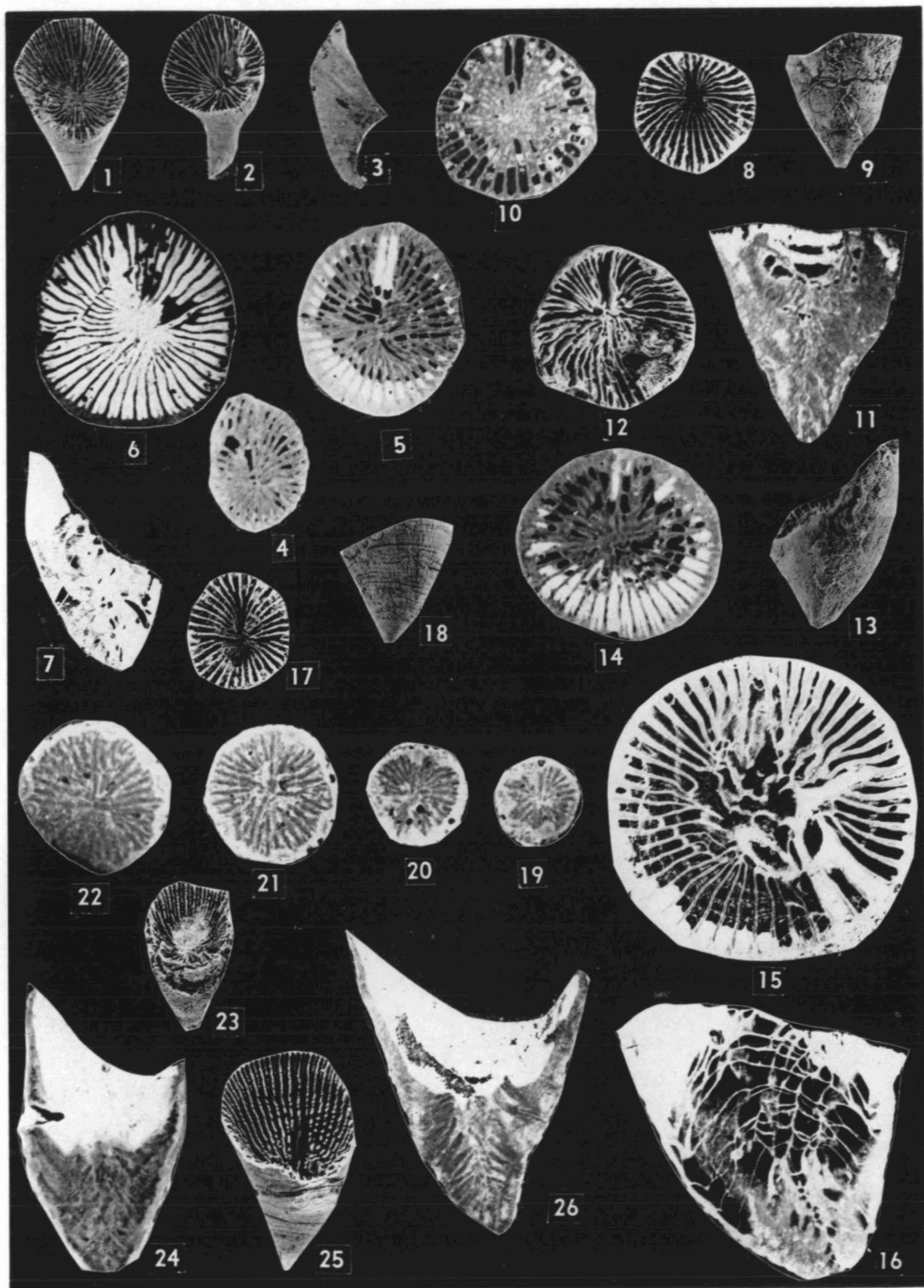
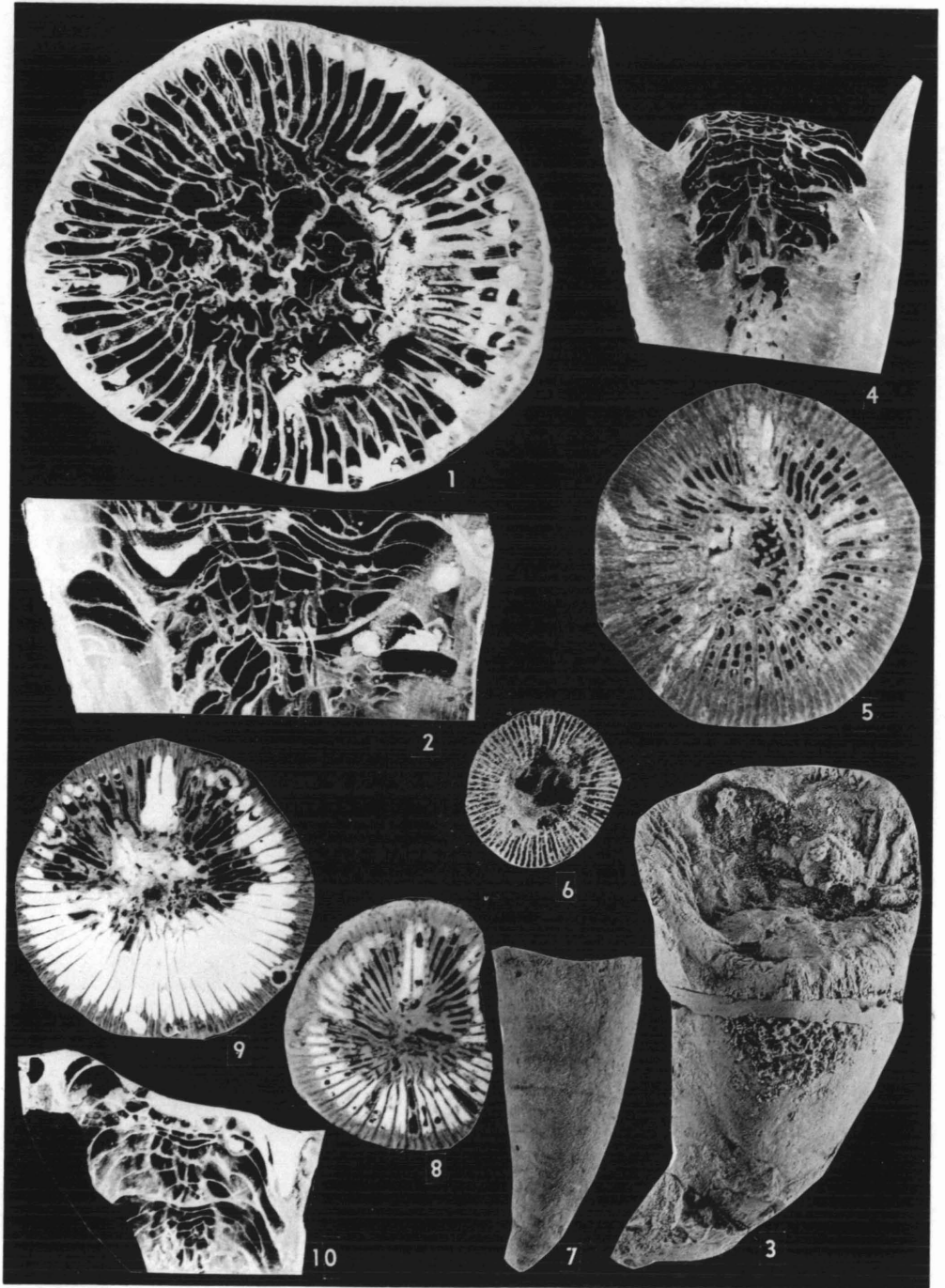


PLATE II



EXPLANATION OF PLATE II

(Exteriors  $\times 1$ ; Sections  $\times 2$ )

	PAGE
<i>Streptelasma rusticum</i> (Billings) .....	26
<p>FIG. 1. Transverse section (cardinal fossula oriented to left). Hypotype No. 26911. Richmond group, Stonington formation, Bay de Noc member; outcrop along shore of Little Bay de Noc, SE sec. 26, T.39 N., R.22 W., Delta County, Michigan.</p> <p>FIG. 2. Longitudinal section of same specimen.</p> <p>FIG. 3. Exterior view of same specimen.</p> <p>FIGS. 8-9. Serial transverse sections of a small toptype of the species. Hypotype No. 45351. Richmond group; Snake Island, Lake St. John, Quebec.</p> <p>FIG. 10. Longitudinal section of another toptype specimen. Hypotype No. 45352.</p>	
<i>Streptelasma arcticum drummondense</i> , subsp. nov. ....	27
<p>FIG. 4. Longitudinal section of a typical section showing peripheral stereozone and elevated tabulae. Paratype No. 45353, Richmond group; outcrops on south side of Potaganissing Bay at Poe Point, Drummond Island, Michigan.</p> <p>FIG. 5. Transverse section of another specimen in which the stereozone is well developed. Paratype No. 45354. Same occurrence as original of Figure 4.</p> <p>FIGS. 6-7. Calyx and side views of a well-preserved specimen. Holotype No. 26927. Same occurrence as original of Figure 4.</p>	

