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CORALS OF THE TRAVERSE GROUP OF MICHIGAN  
PART VIII, *STEREOLASMA* AND *HETEROPHRENTIS*

BY  
ERWIN C. STUMM



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4. Notes on *Lepadocystis moorei* (Meek), An Upper Ordovician Callocystid Cystoid, by Robert V. Kesling and Leigh W. Mintz. Pages 123-148, with 7 plates.
5. Addenda to the Check List of Fossil Invertebrates Described from the Traverse Group of Michigan, by Erwin C. Stumm. Pages 149-171.
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CORALS OF THE TRAVERSE GROUP OF MICHIGAN, PART VIII  
*STEREOLASMA* AND *HETEROPHRENTIS*<sup>1</sup>

BY  
ERWIN C. STUMM

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INTRODUCTION

PART VIII of the study of the corals of the Traverse group of Michigan concerns the simple rugose coral genera *Stereolasma* and *Heterophrentis*. Although common in the Hamilton group of New York, representatives are rare in the Traverse group, one species, *Stereolasma petoskeyensis* (Sloss), occurring in only one formation, the Petoskey limestone of the Traverse Bay region and its stratigraphic equivalent, the Potter Farm formation of the Thunder Bay region. A single specimen, questionably referred to the genus, is here described from the Thunder Bay limestone. The genus *Heterophrentis* is represented by *H. gregaria* (Rominger) and the types are illustrated herein for the first time. In addition, two new species *H. ferronensis* Stumm from the Bell shale, Ferron Point formation, and the Genshaw limestone and *H. curviseptata* Stumm from the Potter Farm for-

<sup>1</sup> Part I is published in Vol. VII, No. 8; Part II in Vol. VIII, No. 3; Part III in Vol. VIII, No. 8; Part IV in Vol. IX, No. 3; Part V in Vol. XIV, No. 11; Part VI in Vol. XVI, No. 4; and Part VII in Vol. XVII, No. 9 of the *Contributions from the Museum of Paleontology, The University of Michigan*.

mation are described and illustrated. A new subspecies of *H. simplex* (Hall) is described from the Alpena limestone.

#### PREVIOUS WORK

Rominger (1876, p. 149), described *Heterophrentis gregaria* but did not illustrate his three syntypes. Sloss (1939, p. 61, Pl. 9, Figs. 1-8, text-fig. 2 on p. 61) described and illustrated *Streptelasma petoskeyense* from the Petoskey limestone of the Little Traverse Bay region.

#### ACKNOWLEDGMENTS

I wish to thank Dr. L. B. Kellum, Dr. C. A. Arnold, and Dr. R. V. Kesling for critically reading the manuscript of this paper. All type specimens illustrated herein are deposited in the Museum of Paleontology, The University of Michigan.

#### REGISTER OF LOCALITIES

##### Localities:

21. Abandoned Kegomic or Mud Lake quarry, just east of Harbor Springs Road  $\frac{1}{4}$  mile north of its termination on U.S. 31, 1 mile east of Bay View, Emmet County.
31. Quarry of Michigan Limestone and Chemical Division of U. S. Steel Corporation, 10 sections in SE part of T. 35 N., R. 5 E., Presque Isle County.
- 33a. Rock cut on Rogers City—Posen road, northwest corner sec. 32, T. 34 N., R. 6 E., 5 miles north of Posen, Presque Isle County.
35. Bluffs on northeast shore of Partridge Point, Thunder Bay, 4 miles south of Alpena. Center and SE  $\frac{1}{4}$ , sec. 11, T. 30 N., R. 8 E. Alpena County.
38. Abandoned quarry of Kelley's Island Lime and Transport Co. at Rockport, sec. 6, T. 32 N., R. 9 E., Alpena and Presque Isle Counties.
53. Abandoned quarry of Thunder Bay Quarries Company, eastern edge of Alpena, SE  $\frac{1}{4}$  sec. 14, T. 31 N., R. 8 E.
68. Shale pit at northwest corner of Evergreen Cemetery at west city limits of Alpena, SW  $\frac{1}{4}$ , sec. 21, T. 31 N., R. 8 E., Alpena County.
93. Sunken Lake, center of sec. 32, T. 33 N., R. 6 E., Presque Isle County (Grabau locality).

#### SYSTEMATIC DESCRIPTIONS

Genus *Stereolasma* Simpson

*Stereolasma petoskeyense* (Sloss)

(Pl. I, Figs. 14-15; Pl. II, Figs. 12-14)

*Streptelasma petoskeyense* Sloss, 1939, p. 61, Pl. 9, Figs. 1-8; Text-fig. 2.

*Remarks.*—This species is represented by numerous specimens from the Potter Farm and Petoskey formations. The axial stereozone is well devel-

oped. In many specimens the tabulae are more incomplete and distally arched than in Sloss's types. The hypotypes studied ranged from 20 to 40 mm long and from 10 to 20 mm in maximum diameter.

*Occurrence.*—Middle Devonian, Traverse group, Potter Farm formation, locs. 68 and 91; Petoskey limestone, locs. 21 and 21a.

*Types.*—Holotype, Walker Museum, University of Chicago, No. 38715; paratypes Nos. 38714–38720; hypotypes, Museum of Paleontology, The University of Michigan, Nos. 44546, 44548, and 44593.

*Stereolasma* (?), sp. A

(Pl. II, Figs. 10–11)

*Description.*—Corallum simple, ceratoid, ranging from 20 mm to 25 mm in length and from 8 mm to 9 mm in maximum diameter. Walls ranging from thin to thick with exterior smooth or moderately annulated. Calyx relatively shallow, bowl-shaped.

Fossula apparently absent. Major septa extending from one-half to two-thirds distance to axis; minor septa averaging one-half the length of the major, a few being falsely contratingent with the major. In transverse section septa numbering 50; cardinal fossula undeveloped. Stereozone absent. In longitudinal section tabulae numerous, averaging 0.6 mm apart, incomplete, horizontal or distally arched.

*Remarks.*—This species differs from *S. petoskeyense* by the absence of the stereozone, complete tabulae, and dilated septa. It is similar to *S. petoskeyense* in having no well-defined cardinal fossula.

*Occurrence.*—Middle Devonian, Traverse Group, Thunder Bay limestone, locality 35.

*Figured specimen.*—No. 44592.

***Heterophrentis ferronensis*, sp. nov.**

(Pl. I, Figs. 1–7; Pl. II, Figs. 1–6)

*Description.*—Corallum simple, ceratoid, ranging from 29 mm to 62 mm in length and from 25 mm to 41 mm in maximum diameter. Walls ranging from thin to thick with typical exterior annulations. Calyxes relatively shallow, bowl-shaped, with relatively flat axial regions and low sloping peripheral regions. Fossula wide, prominent, situated on convex side of corallum or at an oblique angle to that position. Major septa extending from one-half to two-thirds distance to axis; minor septa averaging about one-third the length of major. Major septa extending nearly to axis in neanic stage. In transverse section septa ranging from 86 to 98; cardinal fossula well defined. In longitudinal section tabulae complete or incomplete,

relatively horizontal axially, bent downward in peripheral region.

*Remarks.*—This is the common species of *Heterophrentis* in the lower part of the Traverse group. It is most common in the Ferron Point formation but occurs also in the Bell shale and in the lower part of the Genshaw formation. The thicker walls seen in some specimens may be a subspecific character but it is an extremely variable character. The species is distinguished from *H. simplex* Hall by having a more prominent fossula, and shorter major septa.

*Occurrence.*—Middle Devonian, Traverse group, Bell shale localities 31, 38, 55; Ferron Point formation, localities 38. Genshaw formation, loc. 33a.

*Types.*—Holotype No. 44596; Paratypes Nos. 35146, 35204, 35206, 44547, 44594, 44595, and 44635.

*Heterophrentis gregaria* (Rominger)

(Pl. I, Figs. 10–11; Pl. II, Figs. 15–16)

*Zaphrentis gregaria* Rominger, 1876, p. 149 (not illustrated).

*Description.*—Corallum simple, wide ceratoid to trochoid, lectotype measuring 55 mm in length and 46 mm in maximum diameter. Epitheca with distinct, irregularly set annulations. Septal furrows clearly defined. Calyx oblique, very shallow, bowl-shaped. Cardinal fossula on convex side of corallum, very prominent, attaining greatest width of 9 mm near peripheral region. Cardinal septum in base of fossula. Counter and alar septa not distinguishable from metasepta. In transverse section septa 100, major extending to, or nearly to, axis. In the sectioned paratype major septa of counter quadrants forming axial whorl; minor septa extending axially with average length of 3 mm. In longitudinal section tabulae incomplete, flat or distally convex.

*Remarks.*—Rominger's three syntypes of this species are badly water-worn. On internal structures the species can be distinguished from *H. ferronense* by the more numerous, longer septa and by the incipient axial whorl.

*Occurrence.*—Middle Devonian, Traverse group, Rockport Quarry limestone, Locality 38.

*Types.*—Lectotype No. 5174a; paratypes Nos. 5174b, and 5174c.

*Heterophrentis simplex alpenensis*, subsp. nov.<sup>2</sup>

(Pl. I, Figs. 12–13)

*Description.*—Corallum simple, ceratoid, holotype measuring 34 mm

\* Since this paper was written typical *Heterophrentis simplex* (Hall) has been found in the Four Mile Dam formation at locality 53. Unfigured hypotype No. 44643.

in length. Calyx oval, measuring 26 mm in diameter on cardinal counter axis and 19 mm at right angles to this axis. Calyx shallow with relatively flat base and low sloping walls. Maximum depth of calyx as preserved 12 mm. Septa about 100, major septa extending to axis, becoming slightly twisted in axial region. Minor septa averaging one-fourth length of major. Fossula prominent, long, narrow, and deep. Internal structures unknown.

*Remarks.*—This subspecies is known from one relatively complete silicified specimen. It differs from typical *H. simplex* in the smaller size, oval calyx, and more prominent fossula.

*Occurrence.*—Middle Devonian, Traverse group, upper part of Alpena limestone, Grabau locality 93.

*Type.*—Holotype No. 44551.

### ***Heterophrentis curviseptata*, sp. nov.**

(Pl. I, Figs. 8–9; Pl. II, Figs. 7–9)

*Description.*—Corallum simple, ceratoid, holotype measuring 43 mm in length with a maximum diameter of 33 mm. Exterior with typical interseptal ridges and fine growth annulations. Upper part of calyx wall missing, but calyx apparently shallow with a wide, relatively flat base. Septa thick with a distinct axial whorl. In transverse section of neanic stage septa moderately thick peripherally, thinning axially. In ephebic stage septa greatly thickened, forming an almost solid stereoplasmic mass except in the region of the cardinal fossula. Axial whorl just beginning to develop in section of ephebic stage. Septa about 90, all greatly thickened. Major septa contratinent axially, minor septa about one-third length of major, also contratinent. In longitudinal section tabulae very thin, incomplete, almost completely suppressed by the thick septa.

*Remarks.*—This is a very unusual species characterized by having both major and minor septa contratinent. It has no near relatives with which it may be compared.

*Occurrence.*—Middle Devonian, Traverse group, Potter Farm formation, locality 68.

*Types.*—Holotype No. 44597; paratype No. 44598.

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Journ. Paleontol., Vol. 13, Pt. 1.

*Manuscript Received February 27, 1962*



**PLATES**

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(All figures x 1)

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PLATE I

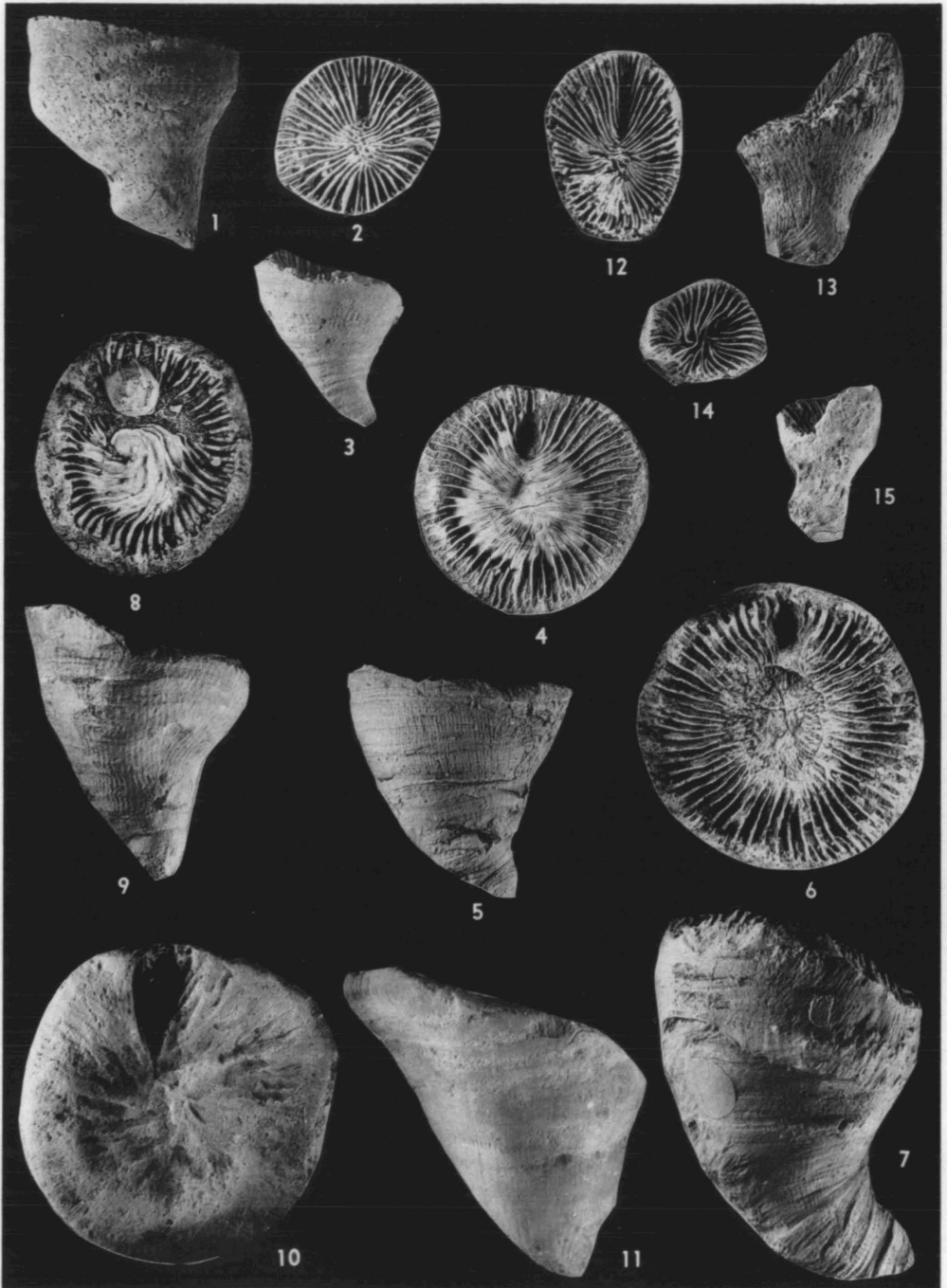
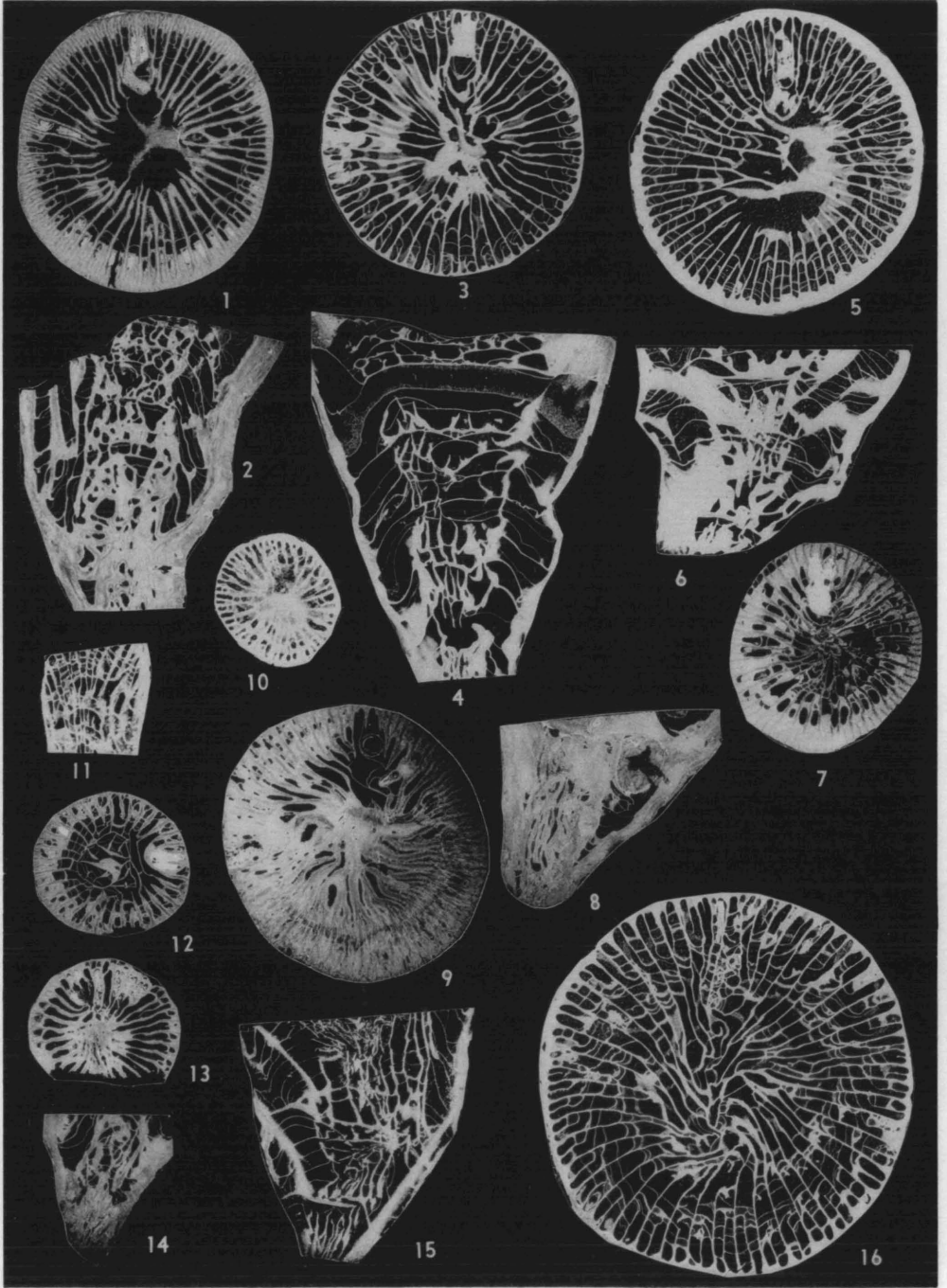


PLATE II



## EXPLANATION OF PLATE II

(All figures x 1½)

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