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CORALS OF THE DEVONIAN TRAVERSE  
GROUP OF MICHIGAN  
PART I, *SPONGOPHYLLUM*

BY

GEORGE M. EHLERS and ERWIN C. STUMM



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CORALS OF THE DEVONIAN TRAVERSE GROUP  
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INTRODUCTION

**T**HE Traverse group of rocks is widely known for the abundance of remarkably well-preserved corals which it contains. Many of these corals have been identified, but many more remain to be described.

Alexander Winchell (1866, pp. 83-97) described several species of corals from the Traverse group of the Little Traverse Bay region. The exposed rocks of this group were assigned by Pohl (1930, p. 5) to three units which in ascending order he designated the Gravel Point stage, the Charlevoix stage, and the Petoskey formation.

Carl Rominger (1876, pp. 1-155) described many species of Traverse corals in a monograph on the fossil corals of Michigan, but the exact stratigraphic position of many of his species is yet to be determined.

G. M. Ehlers and T. E. White (1932, pp. 93-100) assigned Alexander Winchell's *Cyathophyllum panicum* to the genus *Cylindrophyllum* and noted its occurrence in the Petoskey formation of the Little Traverse Bay region and the Potter Farm formation of Alpena County in northeastern Michigan. They also described a new species, *Cylindrophyllum hindshawi*, from the Potter Farm formation of Alpena County.

Mildred A. Fenton (1937, pp. 115-18) described two new species of *Aulopora*, *A. michiganensis* and *A. socialis*, from the Gravel Point

stage and redescribed three of Winchell's species, *Aulopora aperta*, *A. cyclopora*, and *A. conferta*.

L. L. Sloss (1939, pp. 52-73) described several new species of *Tetracoralla* from the Traverse group of the Little Traverse Bay region and redescribed some of the species previously defined by Winchell and Rominger.

David H. Swann (1947, pp. 235-318) described species of the *Favosites alpenensis* lineage, collected from many outcrops in the belt of Traverse rocks extending westward from Alpena County to the Little Traverse Bay region.

Some of the conditions under which the corals of the Traverse group lived and the reefs which they produced have been discussed by A. W. Grabau (1903, pp. 338-40), E. C. Case (1927, pp. 420-29), and M. LeCompte (1938, pp. 11-17).

This paper, which initiates a study of new species of Traverse corals and of known species in need of revision with respect to zoological classification and stratigraphic position, describes two new species of *Spongophyllum*, a genus heretofore unreported from the Traverse and other Devonian rocks of Michigan. The Rockport Quarry limestone and Potter Farm formation, from which the new species were collected, have been described by Warthin and Cooper (1943, pp. 580-81, 590-93) in their paper on the Traverse group of the Thunder Bay region.

#### SYSTEMATIC DESCRIPTIONS

#### Phylum COELENTERATA

#### Class ANTHOZOA

#### Subclass TETRACORALLA

#### Family Columnariidae

#### Subfamily Spongophyllinae

#### Genus *Spongophyllum* Edwards and Haime

*Spongophyllum* Edwards and Haime, 1851, p. 425.

*Genotype*.—By monotypy, *Spongophyllum sedgwicki* Edwards and Haime, 1851, p. 425; 1853, p. 242, Pl. 56, Figs. 2, 2a-e. Devonian; Torquay, Devonshire, England.

*Generic description.*—Coralla cerioid or subcerioid, of hemispherical or subhemispherical form, and composed of polygonal or subpolygonal corallites. Corallites with thin, closely annulated epithecae on the proximal side of the corallum and in places where not in contact. Calyxes deep with flat bases and erect, never reflexed walls. Septa radially arranged and of two orders, major and minor. Major order long or short and minor very short. In many species minor septa lacking or irregularly developed. Septa always thin and in many forms separated from the peripheral walls by an irregularly developed lonsdaleioid dissepimentarium. In some forms lonsdaleioid dissepimentarium wide and complete; in others narrow and present only on one side of a corallite; and in still others not present. These variations present in different coralla of the same species or in different corallites of the same corallum. Tabularia composed of tabulae, which are typically complete and horizontal. In some corallites, complete tabulae interspersed with incomplete tabulae and in others replaced by distally arched tabellae. In most forms dissepimentaria composed of a single series of large, steeply inclined, elongate dissepiments, each partly or completely overlapping the one previously formed. In some parts of the corallites, dissepimentaria discontinuous so that tabulae touch peripheral walls; in other parts dissepiments may increase in number axially so as to restrict tabulae, over a short vertical distance, to the axial parts of corallites. All these variations may occur in the same species and in different corallites of the same corallum.

*Geologic range.*—Middle Silurian to Upper Devonian.

**Spongophyllum romingeri** Ehlers and Stumm, sp. nov.

(Pl. I, Figs. 1-3)

*Description.*—Known from four incomplete, cerioid coralla showing no external structures. Coralla roughly hemispherical. Corallites pentagonal or hexagonal in outline and 4 to 12 mm. in diameter, with the majority approximating 10 mm.

In transverse section, polygonal walls thin and curved or straight. Septa range from 32 to 36 in majority of corallites. Major septa

long in some corallites, extending from periphery or from inner margins of lonsdaleioid dissepimentaria to points two-thirds of distance to axes; major septa in other corallites very short. Minor septa almost as long as major in some corallites and very short in others. In a few corallites septa very short and only on one or two sides. Lonsdaleioid dissepimentaria very narrow and intermittently developed; present only in a minority of the corallites and, where present, not on all sides of the corallites.

In longitudinal section, tabularia composed of complete or incomplete, horizontal or distally concave tabulae interspersed with distally convex tabellae. Dissepiments rare in earlier growth stages. In later stages a few large elongate, steeply inclined dissepiments, often difficult to distinguish from the tabellae, present along peripheral walls. Just beneath calyxes dissepiments more numerous, increasing to four or five rows occupying as much as one-third diameters of corallites. In these areas dissepiments smaller and less steeply inclined.

*Remarks.*—This species is transitional between typical species of *Spongophyllum* and the genus *Tabellaephyllum* Stumm (1948, p. 41). In *Tabellaephyllum peculiaris* Stumm (1948, p. 41, Pl. 12, Figs. 1-2, 9, 11), the monotypic genotype species, no septa are present, and the interior is filled with distally convex tabellae.

*Occurrence.*—Middle Devonian, Traverse group, Rockport Quarry limestone; Presque Isle County, Michigan.

*Type.*—Holotype No. 24832, Museum of Paleontology, University of Michigan.

### ***Spongophyllum alpenense* Ehlers and Stumm, sp. nov.**

(Pl. II, Figs. 1-4; Pl. III, Figs. 1-7)

*Description.*—Coralla cerioid, growing in large hemispherical masses. Most corallites pentagonal or hexagonal in outline and 10 to 18 mm. in diameter; immature corallites tetragonal in outline and 4 to 8 mm. in diameter. Corallites on proximal sides of coralla subcylindrical apically with very thin, annulated epithecae not obscure-

ing peripheral edges of septa. Calyxes 4 to 8 mm. in depth in corallites of mature size and with erect walls and moderately flattened bases. About one-half the corallites with small axial boss.

In transverse section, walls moderately thick and either straight or curved. Septa thin and 40 to 52 in number in larger corallites. Major septa long, extending from walls or from inner margins of lonsdaleioid dissepimentaria to axes or to points two-thirds distance to axes. Minor septa very short. Lonsdaleioid dissepimentaria wide and continuous in about one-half the corallites, and narrow, intermittently developed, or absent in remainder. In many corallites septa composed of ridges on the walls, reappearing as discontinuous crests on inner margins of lonsdaleioid dissepimentaria.

In longitudinal section, tabularia wide and composed of closely set, complete or incomplete tabulae, horizontal in some parts of the corallites and in other parts horizontal axially, depressed periaxially, and horizontal peripherally. Dissepimentaria very irregularly disposed, typically consisting of a single row of elongate, steeply inclined dissepiments, each overlapping the one previously formed. In parts of some corallites dissepiments absent, tabulae being attached to peripheral walls, and in other parts dissepiments increasing locally to two or three rows.

*Remarks.*—This species is a very distinctive form. It can be distinguished easily from *S. brevisseptatum* Stumm from the Upper Devonian Martin limestone of Arizona by its larger corallites, long major septa, and closely set tabulae. *S. alpenense* is very similar to an undescribed species from the Callaway limestone of Missouri.

*Occurrence.*—Middle Devonian, Traverse group, Potter Farm and Beebe School formations; Alpena and Cheboygan counties, Michigan.

*Types.*—Holotype No. 24829; paratypes Nos. 18809, 18811, 18868, 23898, 24830, 24831, and 25579, Museum of Paleontology, University of Michigan.

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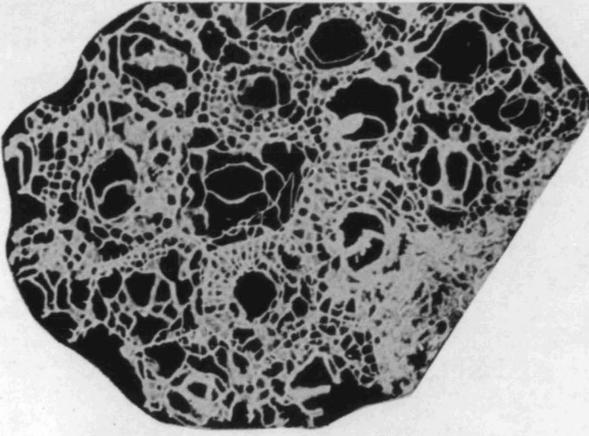
PLATES AND DESCRIPTIONS

## EXPLANATION OF PLATE I

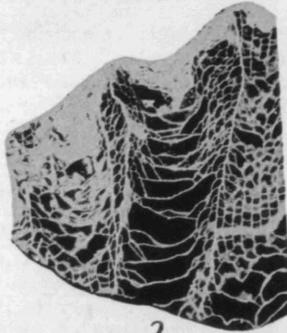
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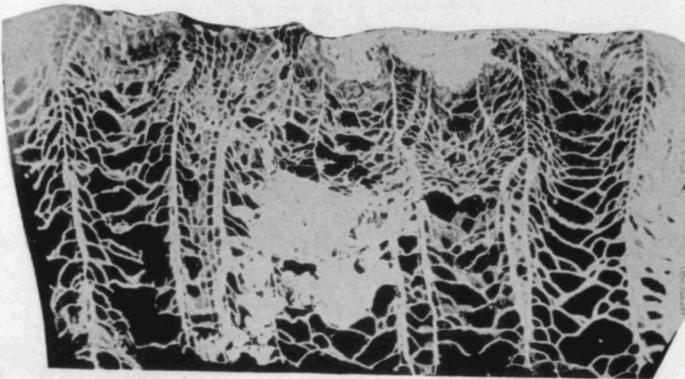
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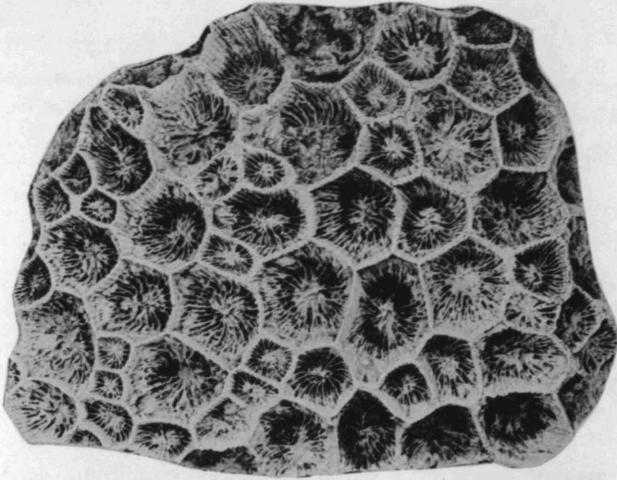
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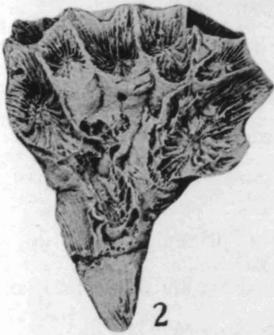
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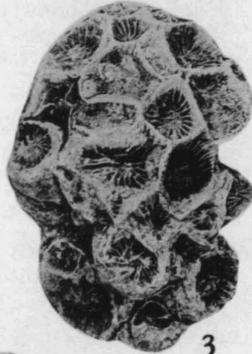
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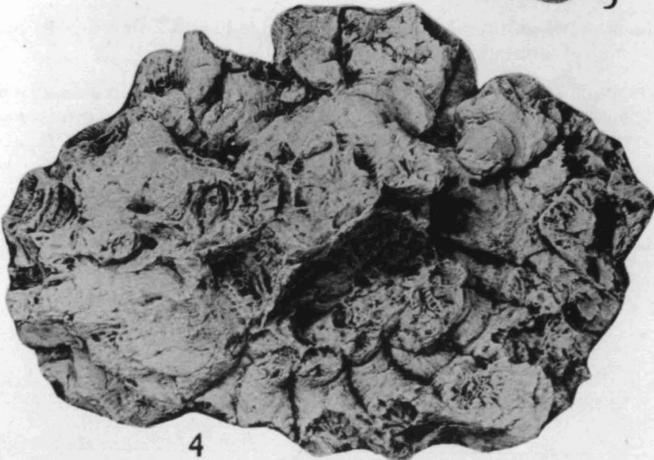
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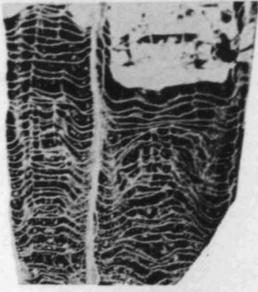
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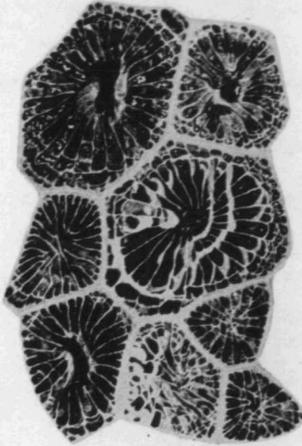
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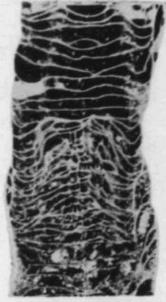
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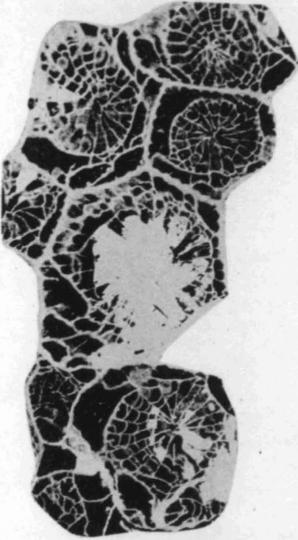
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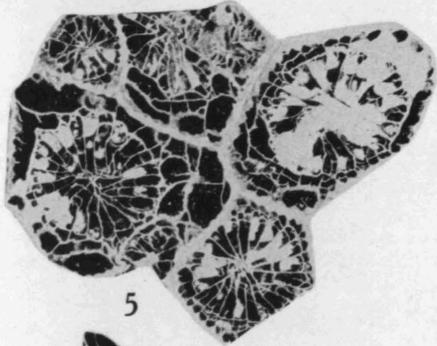
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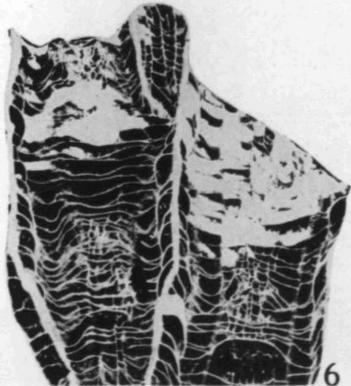
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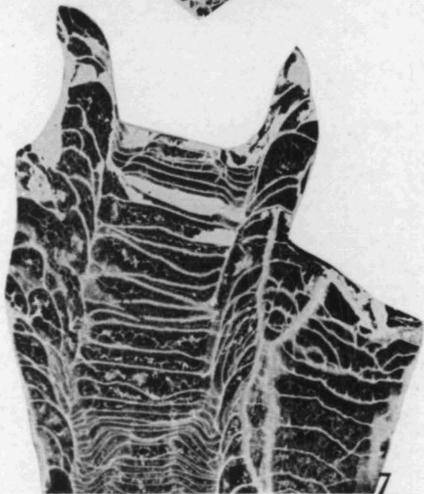
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