PLATES OF FOSSILS AND EXPLANATIONS.

PLATE 1.

Figs. 1A-1D. STRICKLANDINIA NORWOODI, nov. sp.

A, C, D. Views of natural casts of pedicle valves.

B. Cast of brachial valve.

A and C show the characteristic, very faint, bilaterally divergent wrinkles; D shows the very faint radiating wrinkles. In C, the anterior outline is not preserved and the original specimen may have been longer. The anterior outline of D is restored also. B shows the slight median elevation of the brachial valve. There is a corre- sponding slight median depression in the pedicle valves, not well shown in any of the figures.

Oldham limestone, near the top; Silurian; found along the road to Vienna, five and a half miles south of Indian Fields, near the home of J. T. Elkins, in Madison county, Kentucky.

Fig. 2. PENTAMERUS OBLONGUS, Sowerby.

Pedicle view, showing the long septum (which supports the spondylium in this genus).

Dayton limestone, overlying the rock identified as Clinton in Ohio. Found along the railroad, two miles west of Peebles, in Adams county, Ohio.

Figs. 3A-3F. WHITFIELDELLA SUBQUADRATA, Foerste.

A. Internal cast of shell near the hinge; cast of brachial valve in upper part of figure, cast of pedicle valve in lower part. The latter shows the cast of the deep muscular depression and the strong corrugations of the shell on both sides of this depression; these features are seen als0 in 3B and 3D.

B, E, F. Views of the casts of the pedicle valves.

C. Cast of the brachial valve.

D. Lateral view of cast; with pedicle valve on right, and brachial valve on left.

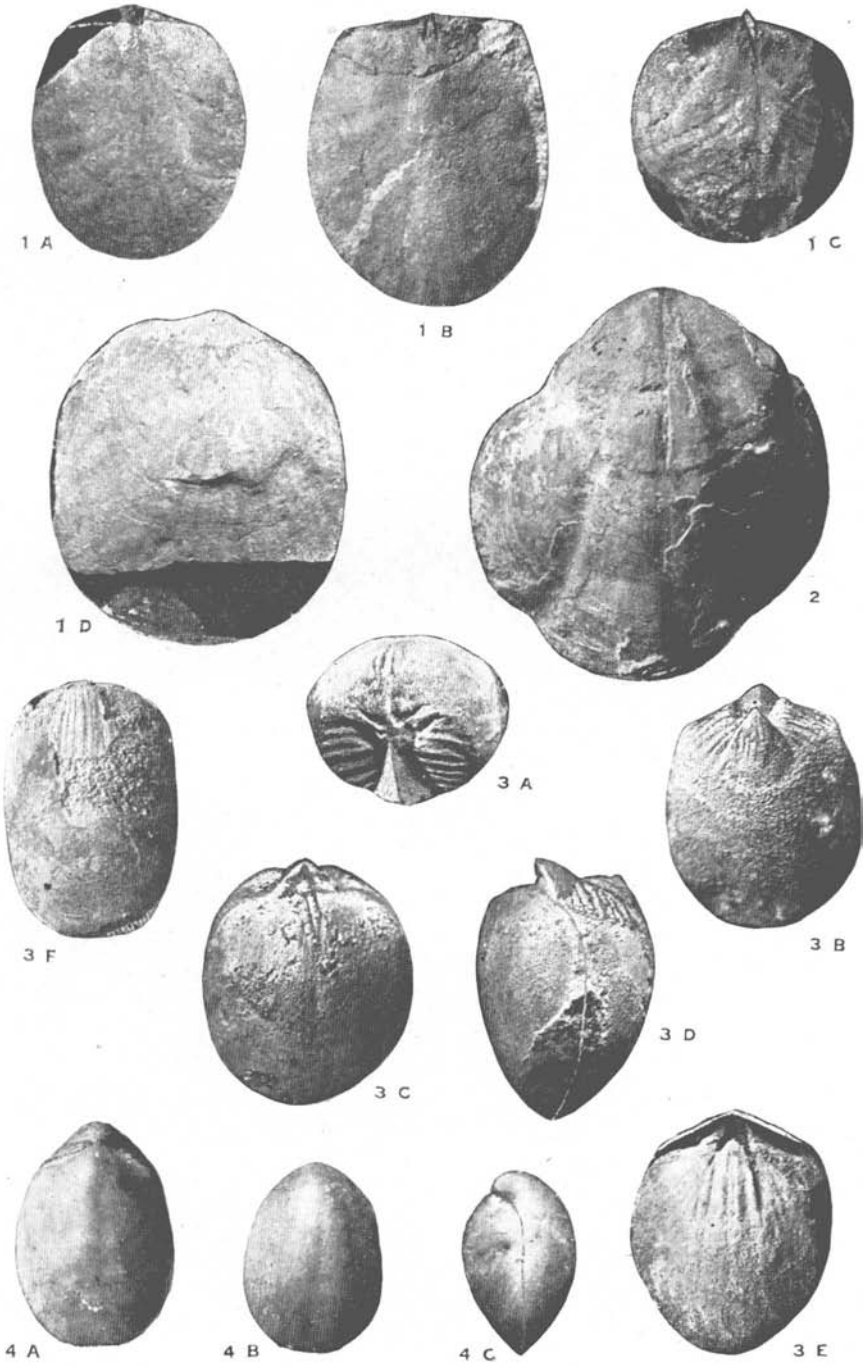
Found at base of Indian Fields formation, Silurian; on Rocky branch, four miles west of Berea, Ky.

Figs. 4A-4C. WHITFIELDELLA QUADRANGULARIS, Foerste.

A. Brachial view.

B. Pedicle view.

C. Lateral view, with pedicle valve on right. Found 38 feet above the base of the rock identified as Clinton in Ohio; northeast of Duncansville, in Adams county, Ohio.



Silurian Brachiopods

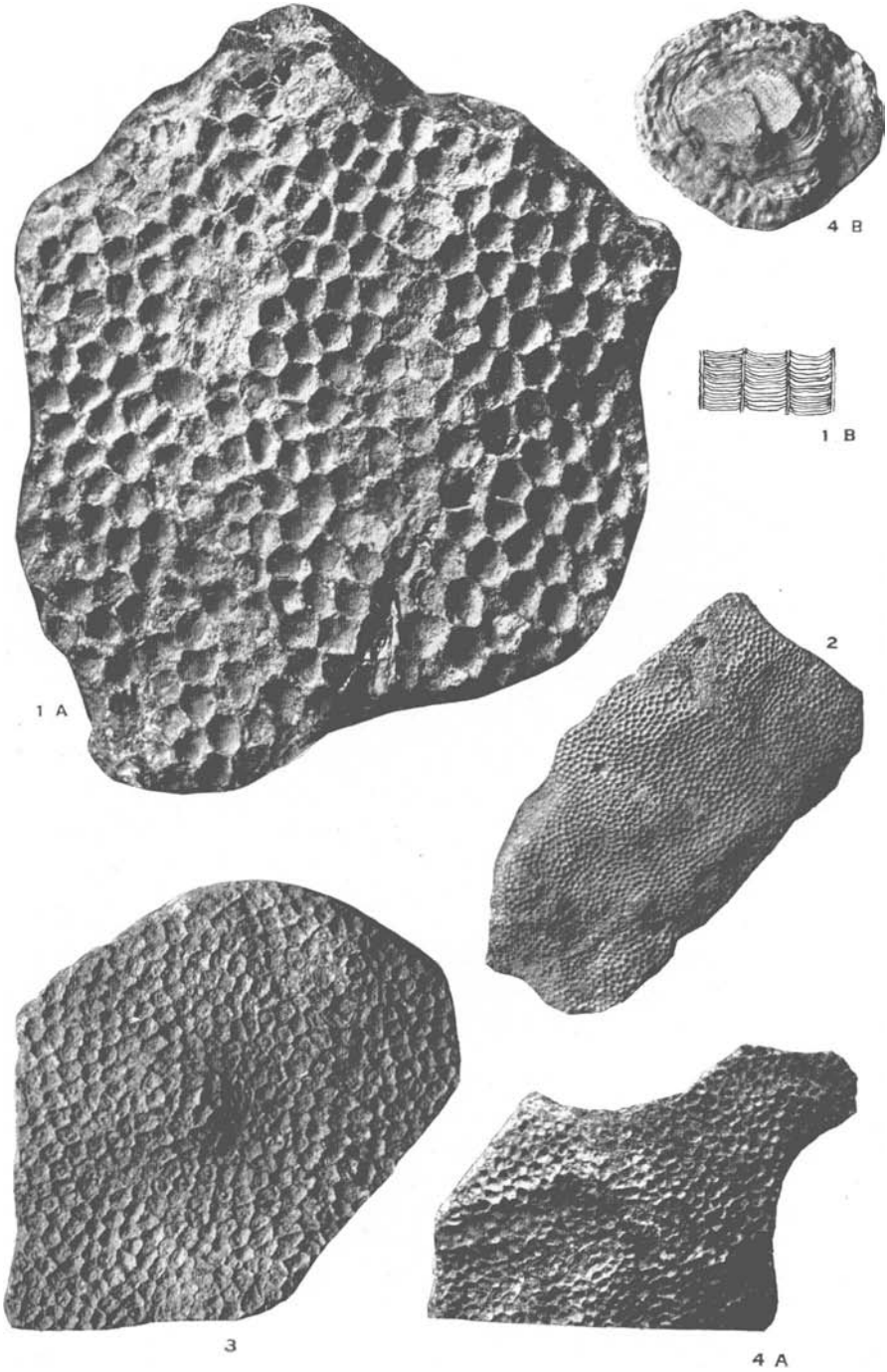
PLATE 2.

Figs. lA-1B. FAVOSITES GOTHLANDICA, Lamarck.
A. Upper surface
B. Vertical section, showing numerous tabulæ.
Waco limestone, Silurian; Irvine, Ky.

Fig. 2. FAVOSITES HISINGERI-APLATA, nov. var.
Waco limestone, Silurian; Irvine, Ky.

Fig. 3. SYRINGOLITES HURONENSIS. Hinde.
Waco limestone, Silurian; Tipton Ferry, Ky.

Figs. 4A-4B. FAVOSITES DECLINATA, nov. sp.
A. Upper surface.
B. Lower surface, with epitheca.
Waco limestone, Silurian; Irvine, Ky.



Silurian Corals

PLATE 3.

Fig. 1. ARACHNOPHYLLUM (STROMBODES) GRANULOSUM, nov. sp.
Waco limestone, Silurian; near Waco, Ky.

Figs.2A-2C. ARACHNOPHYLLUM (STROMBODES) MAMILLARE-DISTANS, nov. var.
A, B. Crater at top of cone-shaped prominences sharply defined.
C. Crater rounding off into sides of cone.
Waco limestone, Silurian; 2A, 2C, Panola, Ky.; 2B, Brownlow Bruner locality, Kentucky.

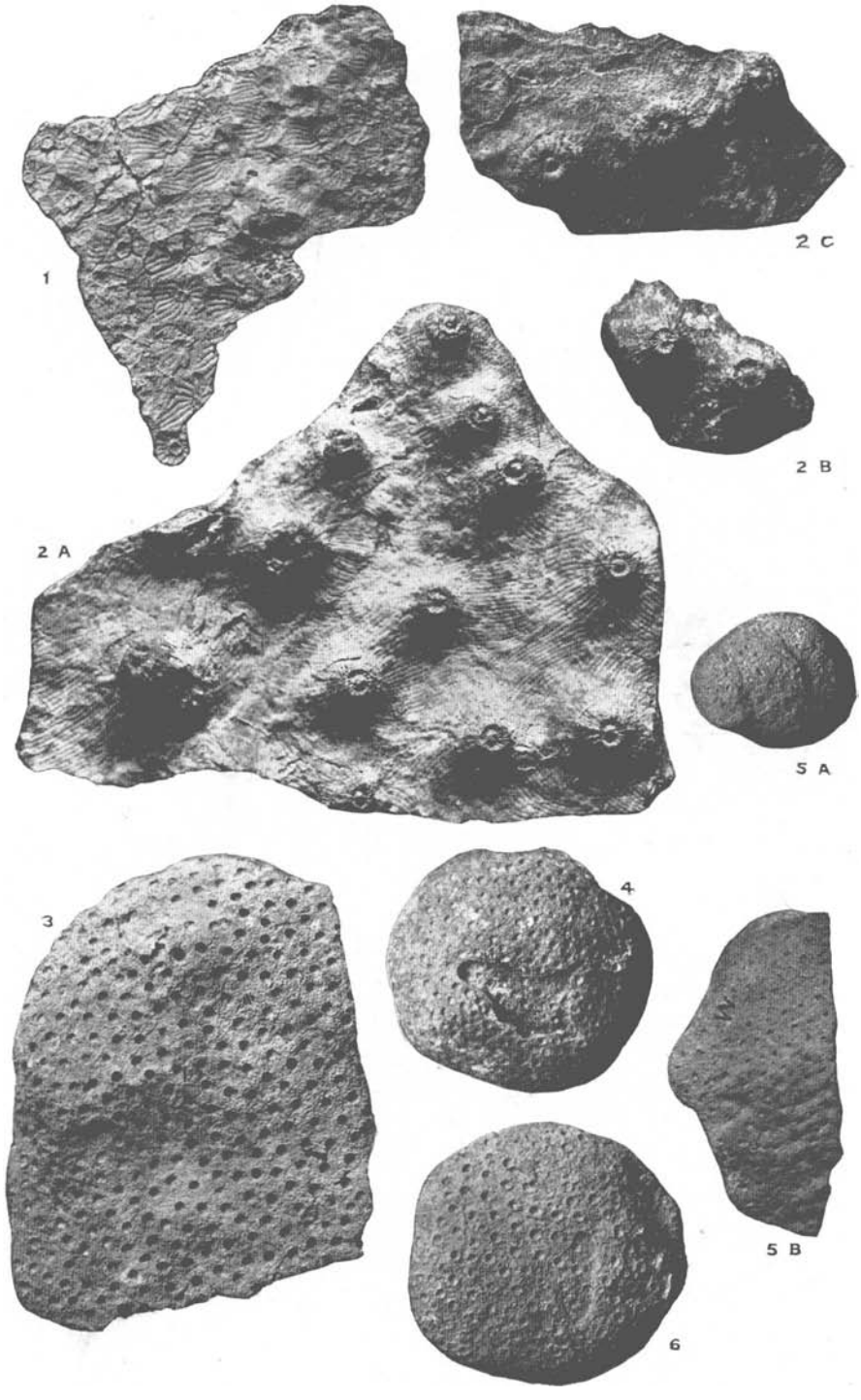
Fig. 3. HELIOLITES SPONGIOSA, nov. sp.
Waco limestone, Silurian; along road north of Estill Springs, near Irvine, Ky.

Fig. 4. HELIOLITES, sp.
Waco limestone, Silurian; road north of Irvine, Ky.

Fig.5A. HELIOLITES SUBTUBULATA-NUCELLA, nov. var.
Waco limestone, Silurian. A small form, increasing in height without much lateral expansion, from Irvine, Ky.

Fig. 5B. HELIOLITES SUBTUBULATA-DISTANS, nov. var.
A flat, explanate form, from the Waco limestones, half a mile east of Waco, Ky.

Fig. 6. LYELLIA EMINULA, nov. sp.
Waco limestone, Silurian; along road north of Estill Springs, north of Irvine, Ky.



Silurian Corals

PLATE 4.

Fig.1. LYELLIA sp.
Flat variety, possibly distinct from Lyellia eminula.
Enlarged 3 diameters. Same specimen as plate 5, figure 4.
Waco limestone, Silurian; east of Waco, Ky.

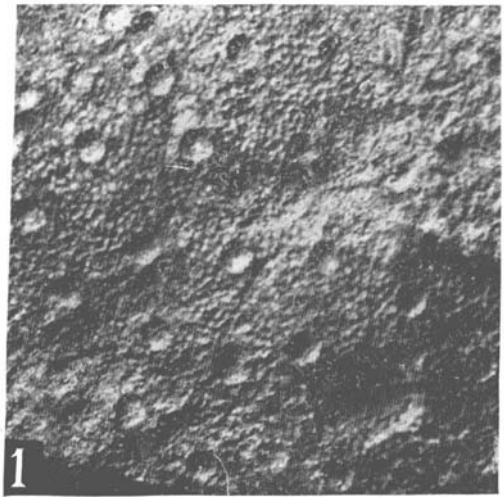
Fig. 2. SYRINGOLITES HURONENSIS, Hinde.
Enlarged 3 diameters. Same specimen as plate 2, figure 3.
Waco limestone, Silurian; Tipton Ferry, southwest of Clay City, Ky.

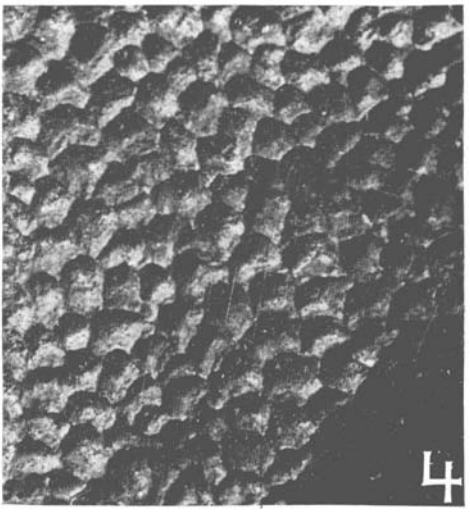
Fig. 3. LYELLIA EMINULA, nov. sp.
Enlarged 3 diameters. Same specimen as plate 3, figure 6.
Waco limestone, Silurian; north of Irvine, Ky.

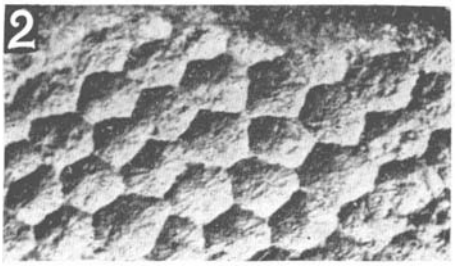
Fig. 4. FAVOSITES DECLINATA, nov. sp.
Enlarged 3 diameters. Same specimen as plate 2, figure 4A.
Waco limestone, Silurian; along road north of Estill Springs, north of Irvine, Ky.

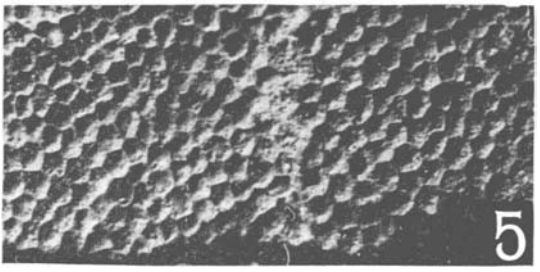
Fig. 5. FAVOSITES HISINGERI-APLATA, nov. var.
Enlarged 3 diameters.
Waco limestone, Silurian; along road north of Estill Springs, north of Irvine, Ky.

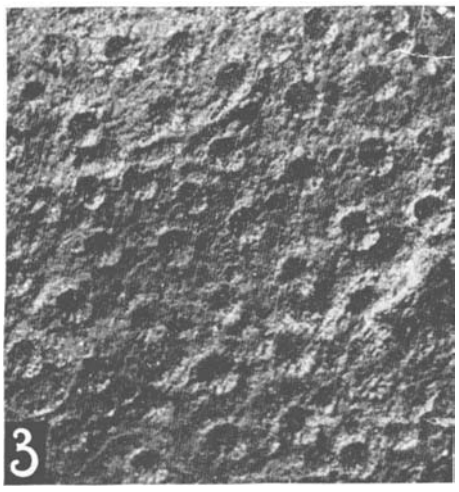
Fig. 6. HELIOLITES SPONGIOSA, nov. var.
Enlarged 3 diameters. Same specimen as plate 3, figure 3.
Waco limestone, Silurian; north of Irvine, Ky.

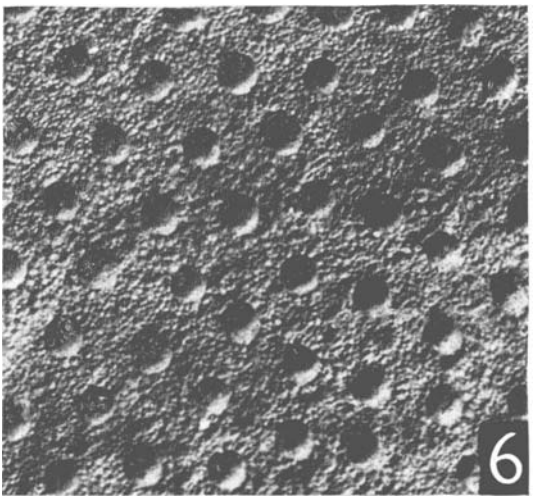












Silurian Corals

PLATE 5.

Figs. 1A-1K. CYSTIPHYLLUM SPINULOSUM, nov. sp.

A, B, C, G. Specimens showing the general form of the corallum.

A, D, F. Specimens showing the large vesiculose plates or dissepiments with the vertical septal ridges.

A, H, J, K. Specimens showing the septal ridges on the exterior of the epithecal covering.

E. Specimens showing the papillose upper surface of the vesiculose plates. In the best preserved specimens these are preserved as short spines.

Waco limestone, Silurian. All except 1C are from the road north of Estill springs, north of Irvine, Ky.; 1C was found half a mile east of Waco, Ky.

Figs. 2A-2F. LINDSTROEMIA LINGULIFERA, nov. sp.

A, B, D. Views of base of calyx; margin of calyx not preserved.

C. Lateral view, showing linguliform process.

E, F. Lateral and posterior views.

Waco limestone, Silurian; 2A, 2B, from Panola, Ky.; all other specimens from along road north of Estill Springs, north of Irvine, Ky.

The linguliform process of this species resembles that of *Lindstroemia dalmani,* Edwards and Haime, from the Upper Silurian of Gotland, Sweden.

Figs. 3A-3E. POLYOROPHE RADICULA, nov. sp.

A, B. Enlarged views of a specimen showing the septal rows of granules on the upper surface of the tabulæ. Specimen cylindrical, the conica1 appearance due to the angle at which it was photographed.

C, D, E. Lateral views of typical specimens.

Fig. 4. LYELLIA, sp., flat variety, possibly distinct from Lyellia eminula.

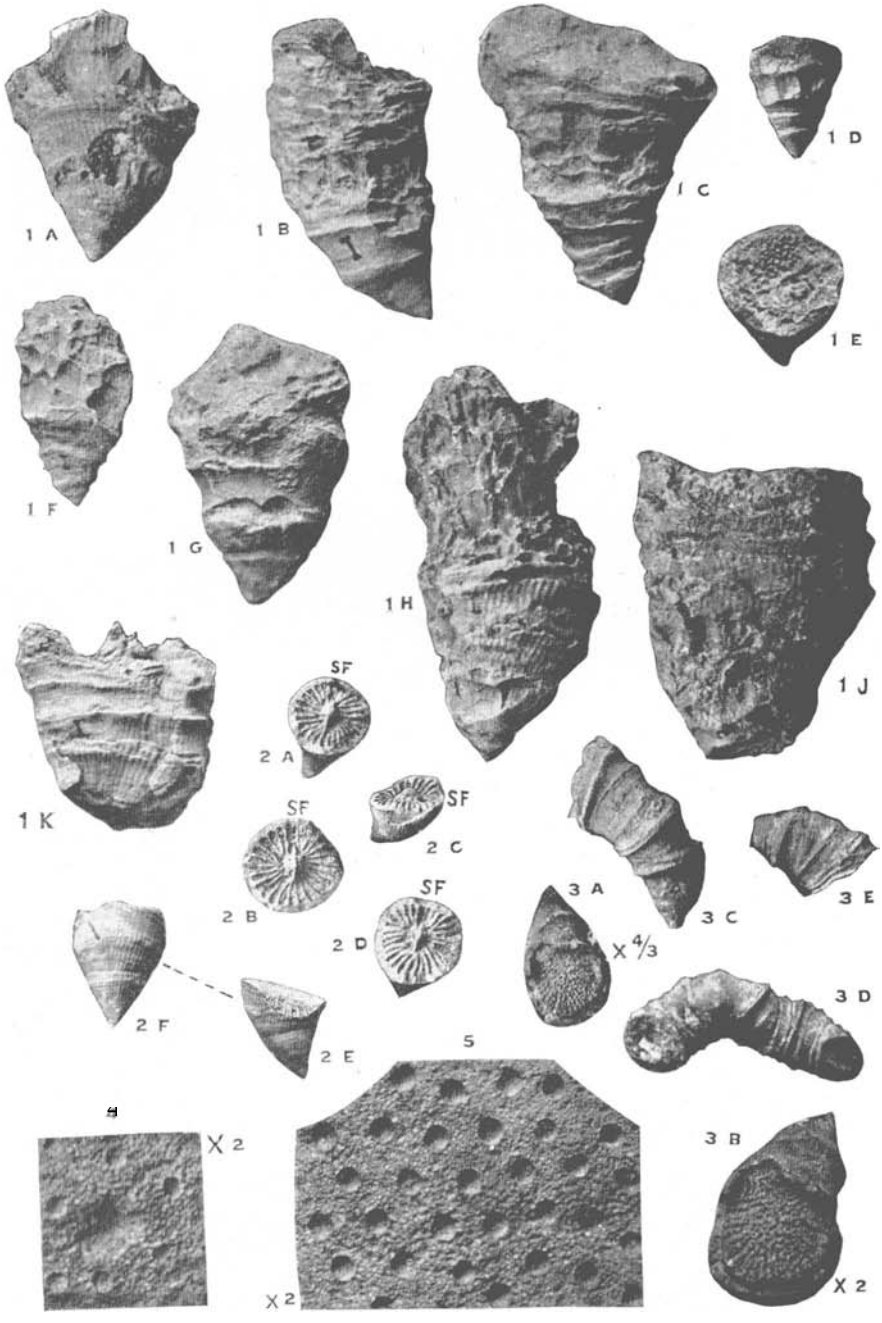
A small part of the upper surface, enlarged.

Waco limestone, Silurian; half a mile east of Waco, Ky.

Fig. 5. HELIOLITES, SPONGIOSA, nov. sp.

A small part of the type specimen (plate 3, figure 3), enlarged.

Waco limestone, Silurian; north of Irvine, Ky.



Silurian Corals

PLATE 6.

Figs.1A-1B. MEEKOPORA BASSLERI, nov. sp.

A. The usual form of the fragments found, four-thirds of natural size.

B. A branching frond, with the sides of the branches not showing the usual parallel outlines.

Waco limestone, Silurian; along the road north of Estill Springs, north of Irvine, Ky.

Figs.2A-2F. CYATHOPHYLLUM DENSISEPTATUM, nov. sp.

A, B, C. Views of typical specimens.

D, E, F. Possibly young specimens of the same species.

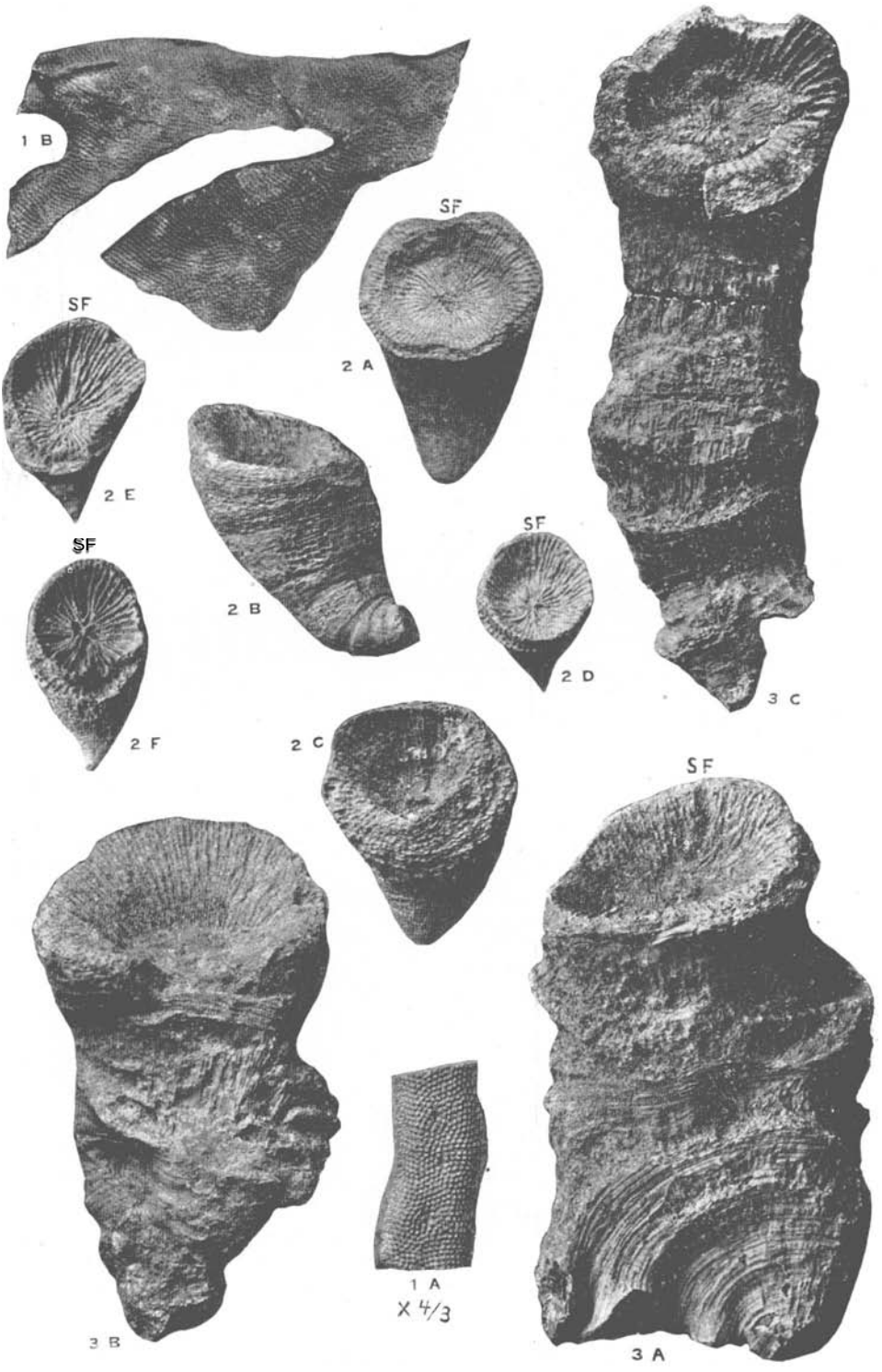
Waco limestone, Silurian; all specimens except 2E were found along the road north of Estill Springs, north of Irvine, Ky.; 2E was found immediately east of Panola, Ky.

Figs. 3A-3C. CYATHOPHYLLUM SEDENTARIUM, nov. sp.

A. The typical form, showing the radiciform extensions of the epitheca where attached to a horizontal object; these radiciform extensions sometimes are more strikingly developed.

B, C. Specimens showing broad dissepiments striated vertically by septal striæ or ridges, the septa being absent. This structure is characteristic of the parts nearest the epithecal surface.

Waco limestone, Silurian; on the road north of Estill Springs, north of Irvine, Ky.



Silurian Corals

PLATE 7.

Figs.1A-1B. ZAPHRENTIS INTERTEXTA, nov. sp.

A. View of calyx.

B. Lateral view.

Waco limestone, Silurian; along road north of Estill springs, north of Irvine, Ky.

Fig. 2. CHONOPHYLLUM SOLITARIUM, nov. sp.

View of calyx; margin of specimen imperfectly preserved.

Waco limestone, Silurian; road north of Estill Springs, north of Irvine, Ky.

Figs.3A-3G. CALOSTYLIS SPONGIOSA, nov. sp.

A, B, C. Views showing calyx.

D, E, F, G. Lateral views showing epithecal surface.

F, G. Attached by broad bases to other fossils.

Waco limestone, Silurian; road north of Estill Springs, north of Irvine, Ky.

Figs.4A-4E. ZAPHRENTIS CHARAXATA, nov. sp.

A, D. View of calyx, and lateral view of same specimen; margin of calyx preserved only along the septal fossette.

B, C. Views, of base of calyx, sides not preserved.

E. View of exterior, showing the characteristic markings of the surface when slightly worn.

Waco limestone, Silurian; along road north of Estill Springs, north of Irvine, Ky.

Figs. 5A-5B. ZAPHRENTIS INTERTEXTA-IRVINENSIS.

A. View of base of calyx, sides not preserved.

B. Lateral view, walls of calyx not preserved.

Waco limestone, Silurian; road north of Estill Springs, north of Irvine, Ky.

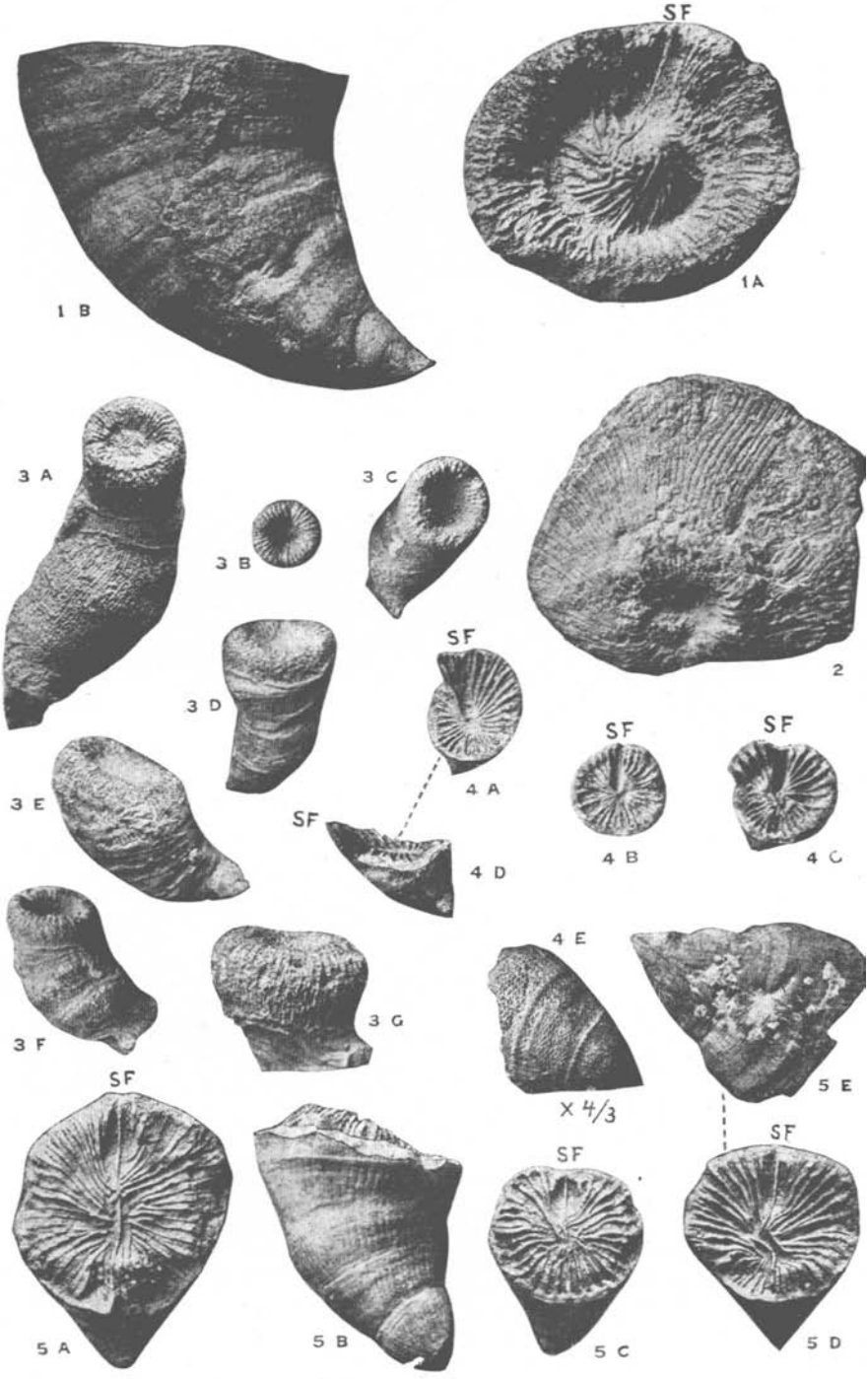
Figs.5C-5E. ZAPHRENTIS INTERTEXTA-JUVENIS.

C, D. Views of calyx, walls not preserved.

E. Posterior view of D, showing numerous transverse striæ crossing the low vertical ridges.

Waco limestone, Silurian; north of Irvine.

The position of the septal fossette is indicated by SF.



Silurian Corals

PLATE 8.

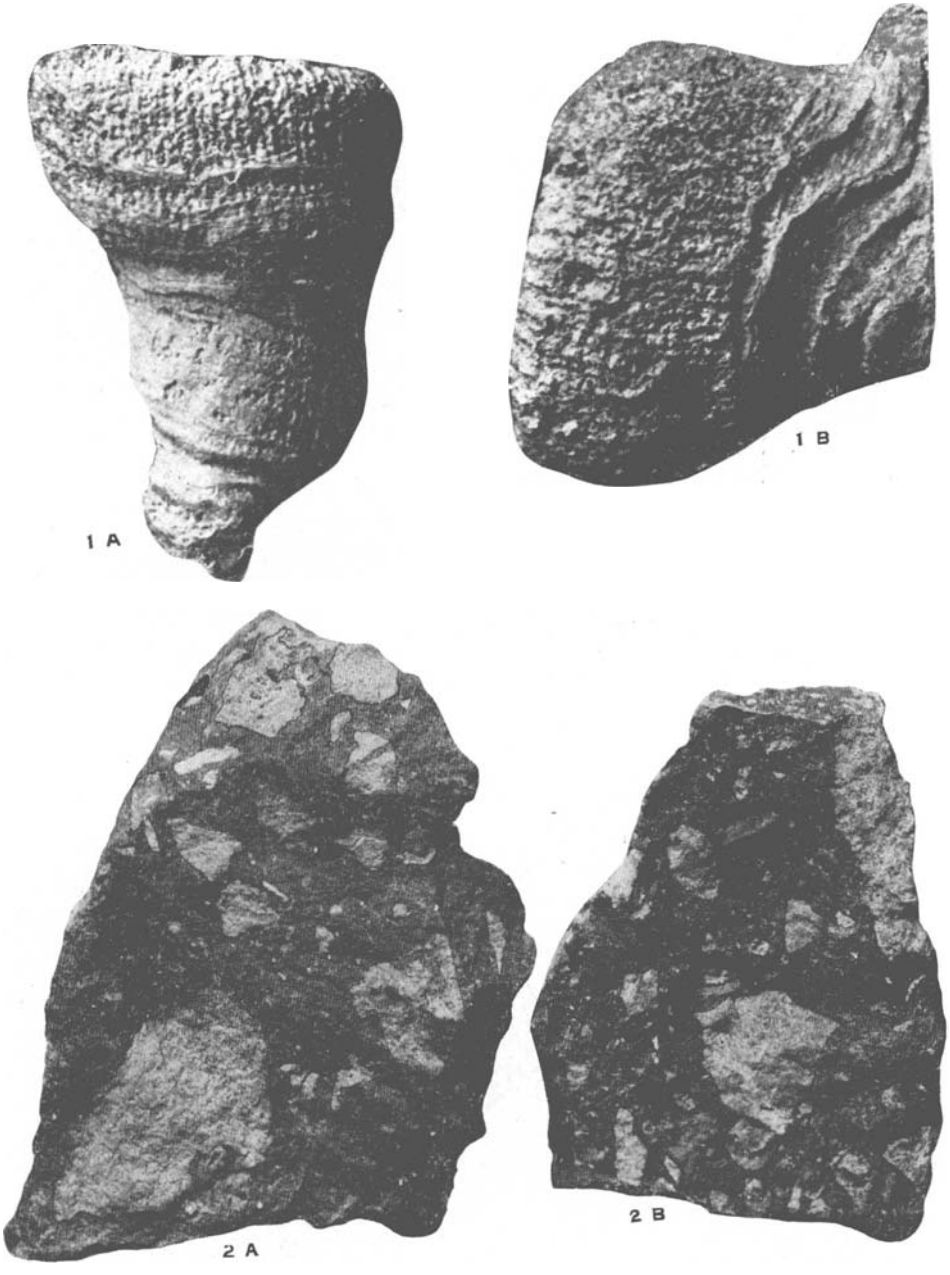
Figs. lA-1B. CALOSTYLIS SPONGIOSA, nov. sp.

Enlarged 3 diameters. 1A, same as plate 3, figure 3D; the porous structure produced by the junction of the synapticula from adjacent septal plates is shown in the upper part of the figure, between 25 and 35 millimeters toward the left of the upper right hand corner of the figure. 1B, same specimen as plate 3, figure 3G; synapticula are well shown 21 millimeters below the top of the figure, and 28 millimeters from the right; others are shown along a septal ridge 30 millimeters below the top; synapticula are present also elsewhere in the figure, but their relation to the septal plates is not well brought out owing to the angle at which the specimen was illuminated.

Waco limestone, Silurian; north of Irvine, Ky.

Figs. 2A-2B. Duffin limestone, showing the brecciated appearance characteristic of this rock at numerous exposures in central Kentucky.

A small part of the metric scale used by scientists in making measurements of fossils and other objects is here added. The smallest divisions indicated are millimeters. Each group of 10 millimeters forms a length called one centimeter. The centimeters of this scale are numbered.



Silurian Corals. Duffin Rock— Devonian.