

## DESCRIPTIONS OF SOME NEW SPECIES OF DEVONIAN FOSSILS

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A study of materials recently collected from the Detroit River series of Michigan and from the Onondaga limestone of Ontario has revealed numerous forms that cannot be identified with known species. Some of these are too fragmentary to be worthy of description, although the genera are easily determined.

The most fruitful source of this material is the Amherstburg beds in the Stony Island Dry Cut. Here great heaps of the rock removed from this part of the river bed are piled high and are rapidly disintegrating under the weathering processes. In 1916 many of the specimens found were thus badly spoiled and each year is continuing the process to ultimate destruction. Grabau and Shimer<sup>1</sup> have described many of these forms, but there still remain a number of fragments that should be found in well enough preserved specimens for description. Attention has been called to some of the more common genera,<sup>2</sup> some of the species of which are described as follows:

### *Arachnocrinus ignotus* n.sp.<sup>3</sup>

PLATE I, FIG. 1

This is a medium to small sized species of *Arachnocrinus*. The calyx is too poorly preserved for description, or is too deeply imbedded in the matrix to be seen, but doubtless it is small.

Arms more or less uniform in size, uniserial, long, and showing frequent bifurcations. These bifurcations are not uniformly spaced on the different arms and one arm does not branch within

<sup>1</sup> *Mich. Geol. and Biol. Survey*, Pub. 2, Geol. Ser. 1, 1909 (1910), pp. 87-210.

<sup>2</sup> *Bull. Geol. Soc. Am.*, XXVII (1916), 73.

<sup>3</sup> To Dr. Stuart Weller is due the credit for the identification of the genus to which this specimen belongs.

the limits of the preserved specimen. It probably bifurcates farther out from the calyx. The cross-section of the arms is circular and the shape of the arm plates resembles a truncated cone with the base upward. It is not quite clear whether the number of arms is five or six because the branching in one or two cases begins so near the calyx. Dorsal canal extending throughout the arms.

*Horizon and locality.*—Onondaga limestone, north shore of Lake Erie, three and one-half miles east of Port Dover, Ontario.

*Poterioceras canadensis* n.sp.

PLATE I, FIGS. 2-5

Shell small, tapering both ways from the base of the chamber of habitation or last air chamber, and extending to a rather blunt point at the apex. Ventral side strongly curved, dorsal side nearly straight but curving slightly upward near the apex. Transverse section subcircular.

Chamber of habitation relatively large, being about two-fifths of the length of the shell, and more or less pear-shaped.

Air chambers regular, increasing slightly in thickness from the apex to the chamber of habitation. Septa smooth, thin, and concavity rather slight. Suture straight and horizontal.

Siphuncle small and marginal on the ventral side.

Aperture subtriangular. Hyponomic sinus well developed.

Surface of shell nearly smooth, marked only by fine lines of growth.

*Horizon and locality.*—Onondaga limestone. Hamilton's Quarry, Gorrie, Ontario.

*Rhipidomella intermedia* n.sp.

PLATE II, FIGS. 1 AND 2

Shell subcircular and more or less lenticular in transverse section. Hinge line equal to slightly more than half the width of the shell. Both valves are convex. The pedicle valve with a flattened area along the median line just in front of the middle and extending to the front margin, where it becomes a broad indistinct sinus. Over the corresponding surface of the brachial valve there is a broad convexity.

Cardinal area probably narrow and small. The cardinal process protruding into the pedicle foramen. Teeth large and conspicuous. The specimen found is an internal mold, but it shows that the surface of the shell was covered by numerous radiating striae which were crossed by concentric growth lines.

The interior shows a strongly impressed muscular impression on the pedicle valve. This resembles very closely the similar impression in *R. vanuxemi* but differs from it in the conspicuous divisions characteristic of that species. In the species here described this muscular impression extends slightly more than half the length of the shell and is divided by a prominent median ridge. The brachial valve shows a slight rounded median ridge which extends about a third of the length of the shell and is continued backward into the cardinal process. The muscular impression in this valve is poorly defined. The crural processes are prominent as in *R. vanuxemi*. While this form resembles closely *R. vanuxemi* it is somewhat intermediate between that form and *R. penelope*.

*Horizon and locality*.—Amherstburg dolomite, Stony Island Dry Cut in Livingston Channel, Detroit River, near Trenton, Michigan.

*Schizophoria prima* n.sp.

PLATE II, FIG. 3

Shell transversely elliptical or roundly quadrate, moderately convex. Hinge line approximately straight and equal to about half the width of the shell.

Brachial valve unknown. Pedicle valve with rather prominent umbonal region and sloping abruptly to the cardinal area and extremities. In other directions from the umbonal area the valve is more or less flattened (possibly accidentally) but abruptly curved downward at the margins. The front third shows a broad ill-defined sinus which makes but a slight impression on the front margin. Surface marked by fine radiating striae, which are poorly shown on the internal mold. Concentric growth lines are also visible.

The internal impression of the pedicle valve shows a rather small subquadrate muscular scar, which is bordered by a deeply impressed

margin and partially bisected by a prominent rounded ridge impression. This latter was apparently longitudinally striated while the muscular scars themselves were concentrically marked.

*Horizon and locality.*—Amherstburg dolomite, Stony Island Dry Cut, Livingston Channel, Detroit River, near Trenton, Michigan.

*Stropheodonta delicatula* n.sp.

PLATE II, FIGS. 4 AND 6

Shell semi-elliptical, somewhat wider than long. Cardinal extremities produced, hinge line usually greater than the greatest width of the shell.

The specimens found are chiefly brachial valves and of those only the external impression, with rarely a rather poor preservation of the shell. Fragments of the pedicle valve show that it was regularly convex and rather gibbous. The beak was small and slightly incurved and extending beyond the area as in *Stropheodonta demissa*. Brachial valve moderately to deeply concave, usually following rather closely the inside curvature of the pedicle valve, leaving scarcely a sixteenth of an inch as the probable thickness of the animal.

Area of pedicle valve arcuate and more or less triangular; area of the brachial valve apparently flat and uniform in width.

Surface of valves marked by strong radiating striae, rather distantly spaced, and between which are numerous fine striae. In the umbonal region the surface is marked by distinct ribs or costae, which seem to persist for half an inch or more from the beak and then are gradually lost. These radiating surface ornamentations are crossed by numerous growth lines which are occasionally aggregated into more conspicuous wrinkles. This species may be compared with *Stropheodonta galatea*.

*Horizon and locality.*—Amherstburg dolomite, Stony Island Dry Cut, in Livingston Channel, Detroit River, near Trenton, Michigan.

*Nucleospira livingstonensis* n.sp.

PLATE II, FIG. 6

Shell nearly circular in outline, rather gibbous and rounded oval in transverse section. Width and length nearly equal.

Hinge line about one-third the width of the shell. Cardinal area very narrow and inconspicuous.

Brachial valve not known. Pedicle valve showing a lightly impressed muscle scar and a distinct median septum, which latter is traceable about one-half the length of the shell.

Surface showing distinct growth lines and rather indistinct radiating markings. These latter can hardly represent the surface spines, but suggest them.

*Horizon and locality.*—Amherstburg dolomite, Stony Island Dry Cut, Livingston Channel, Detroit River, near Trenton, Michigan.

*Loxanena inculta* n.sp.

PLATE II, FIGS. 7 AND 8

Shell tapering gradually to a high spire; apical angle  $35^{\circ}$ . Six or more volutions which are moderately convex or somewhat flattened on the outer surface but rather abruptly curving on the lower side of the whorl. Aperture subelliptical. Surface marked by strong regularly elevated striae, which turn gently backward from the suture and then forward, completing the curve before the periphery of the whorl is reached and below which they have been preserved.

*Horizon and locality.*—Amherstburg dolomite, Stony Island Dry Cut, Livingston Channel, Detroit River, near Trenton, Michigan.

*Callonema perlata* n.sp.

PLATE III, FIGS. 1 AND 2

Shell depressed turbinate; spire low, consisting of five or more volutions which increase in size gradually and are oval in cross-section. Apical angle  $138^{\circ}$ . Umbilicus large and shallow. Suture moderately depressed and marking the outer margin of the preceding whorl.

Surface marked by medium to coarse striae of growth, which pass obliquely outward from the suture, continue over the periphery, from which they curve gently backward, and then disappear in the umbilicus. The coarseness of the striae increases with distance from the apex of the spire.

*Horizon and locality.*—Amherstburg dolomite, Stony Island Dry Cut, Livingston Channel, Detroit River, near Trenton, Michigan.

## DESCRIPTION OF PLATES

All figures are natural size.

Mr. G. S. Barkentin, delineator.

## PLATE I

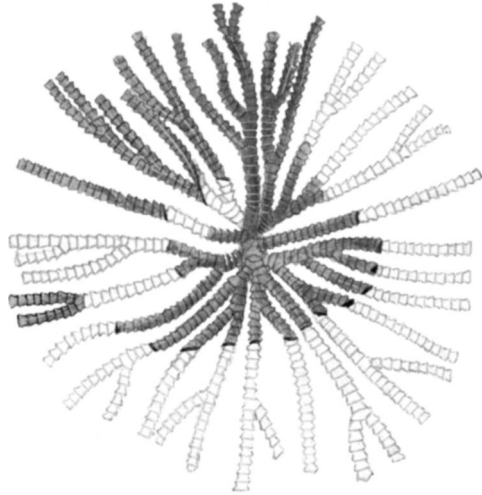
- Fig. 1. *Arachnocrinus ignotus* n.sp.  
1. Dorsal (?) view.
- Figs. 2-5. *Poterioceras canadensis* n.sp.  
2. Ventral view.  
3. Dorsal view.  
4. Lateral view.  
5. Posterior view of the last chamber preserved and showing position of siphuncle.

## PLATE II

- Figs. 1-2. *Rhipidomella intermedia* n.sp.  
1. Brachial valve.  
2. Pedicle valve of same specimen.
- Fig. 3. *Schizophoria prima* n.sp.  
3. Pedicle valve.
- Figs. 4-5. *Stropheodonta delicatula* n.sp.  
4. Impression of brachial valve showing impression of part of cardinal area of pedicle valve.  
5. Impression of brachial valve of another specimen.
- Fig. 6. *Nucleospira livingstonensis* n.sp.  
6. Pedicle valve.
- Figs. 7-8. *Loxonema inculta* n.sp.  
7. A small specimen showing surface markings fairly well preserved.  
8. A large specimen showing surface poorly.

## PLATE III

- Figs. 1-2. *Callonema perlata* n.sp.  
1. Lateral view showing character of surface markings.  
2. Apical view.



1.



2.



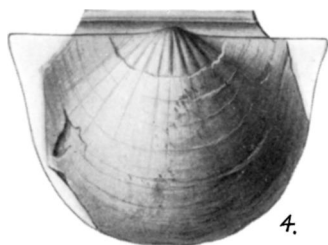
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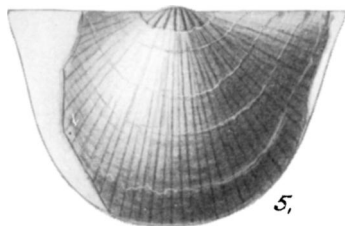
5.



4.



1.



5.



2.



3.



7.



8.



6.



