ART. XVIII. THE CEPHALOPOD FAUNA OF THE CONEMAUGH SERIES IN WESTERN PENNSYLVANIA: SUPPLEMENT

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(Plates I, II)

Some five years ago we prepared a report on the cephalopods of the Conemaugh series in western Pennsylvania, and the Carnegie Museum honored us by publishing it. Since that time, Mr. L. R. Collins of Pittsburgh has loaned us a collection of cephalopods that he assembled from the same general horizon and locality, and Reverend G. H. Smith of New Knoxville, Ohio, has sent us a few Conemaugh cephalopods, along with a wealth of other material. These two collections contain three new species, and other specimens that add materially to the existing knowledge of several of the previously known forms; and they constitute the basis for the present supplement to our prior study.

The type and figured specimens from Mr. Collins' collection are to be deposited in the Carnegie Museum, whereas those secured by Reverend Smith have been donated to The State University of Iowa. The photographs which accompany this report were retouched by Mr. Howard Webster of Iowa City. Also, we wish to acknowledge our indebtedness to the Graduate College of The State University of Iowa for making the preparation of this report financially possible, and to the Carnegie Museum for publishing it.

SYSTEMATIC PALEONTOLOGY

Poterioceras curtum (Meek and Worthen)

The Collins collection contains two representatives of this species but unfortunately both of them are so incomplete that they do not merit illustration. However, their affinities are definite, for they retain the test and it shows the characteristic surface ornamentation. Although a study of these specimens has not added to our knowledge of the morphology of the conch, they are important for they come from localities at which the species was previously not known to occur.

Occurrence: Brush Creek limestone at (1) Witmer and (2) west end of Sewickley bridge, near Sewickley, Pennsylvania.


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Ephippioceras ferratum (Cox)

(Plate I, figures 7, 8)

The specimen represented by figures 7 and 8 on our Plate I is the best representative of this ubiquitous species that has so far been found in the Conemaugh of Pennsylvania. It has an overall length of about 42 mm., and near the junction of the phragmacone and the living chamber the conch is about 32 mm. wide and 18 mm. high. Along the venter on the internal mold there is a very distinct raised line. There are some twelve camerae in the outer volution of the phragmacone of this specimen. The adoral two of these camerae are somewhat shorter than the preceding one, which suggests that this specimen represents a fully mature individual. The sutures form the prominent narrowly rounded ventral saddle and broad shallow rounded lateral lobes that are so characteristic of this species.

Remarks: In addition to the individual described above, the Collins collection contains a poorly preserved specimen that we are referring to this species with question. It came from the same horizon and locality as the figured specimen and seems to have been of the same general size and shape. Inasmuch as we are unable to ascertain the nature of its sutures, we are very uncertain in regard to its affinities.

Occurrence: Brush Creek limestone in the McFetridge Brick Company quarry of Creighton, Pennsylvania.

Repository: Carnegie Museum, 25,788 (figured specimen) and 25,789 (specimen referred to this species with question).

Coelogasteroceras dubium, sp. nov.

(Plate I, figures 5, 6)


The holotype of this species (Pl. I, figs. 5, 6) is a well preserved almost complete internal mold, to which portions of the test adhere. The conch is moderately small, is subglobular in shape, and is expanded orad rather rapidly—the maximum diameter of the holotype measures about 28 mm. The whorls are low and broad, and, except in the adoral part of the living chamber of fully mature specimens like the holotype, they are broadly rounded ventrally and laterally and impressed dorsally. At the junction of the phragmacone and the living chamber of the holotype, the conch is about 17 mm. wide and 10 mm. high.
The preserved part of the living chamber of the holotype is about two-fifths of a volution in length. In the adoral half of it there is gradually developed a low broad shallow ventral groove or sulcus. The test is a little less than half a millimeter thick. Growth-lines on its surface form a moderately broad deep rounded ventral sinus and broadly rounded lateral salients. Also, on the internal mold there is a raised line along the venter.

The umbilicus is moderately large, the umbilical shoulders are fairly abrupt and distinct, and the umbilical walls are steep. The diameter of the umbilicus is equal to about a third that of the conch, and the maximum diameter attained by the umbilicus of the holotype (internal mold) measures about 9 mm.

The camerae are moderate in length, but the adoral two of the holotype are excessively short, suggesting that it is a fully mature individual. The adoral sutures of this specimen are distinctly sinuous, whereas the others are essentially straight and directly transverse. The sinuosity of the adoral sutures results in their forming a broad shallow ventral lobe and on either side of it a similar ventrolateral saddle. No trace of the siphuncle is visible on the holotype.

Remarks: The above description is based entirely on the holotype, but in addition we have available for study a rather poorly preserved para-type. This latter specimen does not retain the sutures, but it shows the general size and shape of the conch, the adoral ventral groove or sulcus, and the growth-lines. Also, as indicated by the synonymy, in 1942 we illustrated another rather poorly preserved specimen that may be conspecific.

We are somewhat uncertain in regard to the generic affinities of this species. Superficially it resembles typical *Liroceras*, but the ventral sulcus that it develops at full maturity suggests a relationship to *Coelogasteroceras*, of which the genotype is *Nautilus canaliculatus* Cox of the Lower Pennsylvanian of Kentucky. It seems to us that our species is more or less intermediate between these two genera, but, all in all, we believe that it is closer to *C. canaliculatum* than to any other genotype. Because of its uniqueness, little would be gained by detailed comparisons of *C. dubium* with other species.

Occurrence: Brush Creek limestone in (1) the Harvey Brick Company quarry near Glassmere (holotype and specimen referred with question to this species), and (2) an outcrop along the side of the highway west of the Sewickley bridge near Sewickley (paratype), Pennsylvania.

Types: Carnegie Museum, 25,790 (holotype) and 25,791 (paratype).
Metacoceras cornutum Girty
(Plate I, figures 9, 10)

It should perhaps be mentioned that the collections we are studying contain seven representatives of this species, which is exceedingly abundant in the Conemaugh. None of these is particularly well preserved, but that represented by figures 9 and 10 on our Plate I is the first to be recorded from the Ames limestone of southeastern Ohio.

Occurrence: Mr. Collins secured four specimens from the Brush Creek limestone near Creighton, Pennsylvania, and two from the Pine Creek limestone near Undercliff, Pennsylvania. Reverend Smith found the one illustrated in the Ames limestone near Trimble, Athens County, Ohio, in direct association with the smaller of the syntypes of Stenopoceras smithi, sp. nov.

Repositories: Carnegie Museum, 25,792-25,795 (Brush Creek specimens) and 25,796; 25,797; (Pine Creek specimens); and State University of Iowa, 8,173 (Ames specimen).

Metacoceras perelegans Girty

The Woods Run limestone has yielded relatively few fossils, and Mr. Collins obtained from it only a single cephalopod. This specimen, which is some 65 mm. in diameter, is poorly preserved and is crushed and distorted. However, its general physiognomy and particularly its ornamentation indicate clearly that it belongs in the genus Metacoceras, and inasmuch as it possesses both dorsolateral and ventrolateral nodes we are referring it to M. perelegans. That species, though not previously recorded from the Woods Run limestone, is fairly abundant in other portions of the Conemaugh of western Pennsylvania, having been found in the Brush Creek, Pine Creek, and Ames limestones.

Occurrence: Woods Run limestone along the Pennsylvania Railroad about a third of a mile southeast of Trafford City, Pennsylvania.


Tainoceras monilifer Miller, Dunbar, and Condra

For the sake of completeness, it should be mentioned that the collections under consideration contain a fragment of a conch that comes from a locality at which this species was not previously known to occur. This specimen represents part of a whorl some 36 mm. wide. It does not show
either sutures or siphuncle, but it possesses the rows of ventral and ventrolateral nodes that are so characteristic of *Tainoceras*, and all of its characters that can be ascertained seem to coincide well with those of *T. monilifer*, the only representative of the genus known from the Conemaugh.

*Occurrence:* Ames limestone in "the old brick quarry" at Blackburn, Pennsylvania.


**Stenopoceras smithi**, sp. nov.

(Plate II, figures 1, 2)

Two internal molds constitute the basis for this species. Both of them are only moderately well preserved. The conch is subdiscoidal in shape and is fairly large. The larger of the syntypes attains a maximum diameter of about 113 mm., and it is not completely adorally. The whorls, which attain a maximum width just outside the umbilical shoulders, are greatly flattened laterally, almost subangular ventrolaterally, and distinctly concave ventrally—the accompanying illustrations, particularly text figure 1, elucidate the details of their shape. The living chamber appears to be at least two-thirds of a revolution in length.

The umbilicus is closed (or nearly so) and is not very conspicuous. The
umbilical shoulders are low and broadly rounded and are, therefore, more or less indefinite.

The surface of the test bears numerous fine growth-lines. These form shallow broadly rounded ventral sinuses, but their course on the other zones of the conch can not be ascertained.

As shown by figure 1 on Plate II, the camerae are short. Each external suture forms a moderately shallow broadly rounded ventral lobe and on either side of it a small subangular ventrolateral saddle, a broad rather deep broadly rounded lateral lobe, a high subangular dorsolateral saddle (on or near the umbilical shoulder), and a rather deep lobe which appears to center on the umbilical seam. The shape of the internal sutures is not known, but almost certainly they do not differ materially from those of other congeneric forms. Neither of the syntypes reveals a trace of the siphuncle.

Remarks: This species is named in honor of Reverend G. H. Smith who collected the only known representatives of it and kindly made them available to us for study. It does not resemble very closely any of the other know congeneric forms except S. abundum Miller and Thomas of the Casper formation of Wyoming. These two species are very similar insofar as size, shape (particularly cross section), and ornamentation of the conch are concerned, but the sutures of our species form a relatively high and sharp dorsolateral lobe.

Occurrence: Both of the syntypes came from the Ames limestone near Trimble, Athens County, Ohio. The smaller specimen came from the same block of limestone as the large representative of Metacoceras cornutum Girty represented by figures 9 and 10 on Plate I.

Syntypes: State University of Iowa, 8,174.

Bactrites? collinsi, sp. nov.

(Plate I, figures 1, 2)

This species is being based on a single specimen, which represents the adoral camera of the phragmacone and the adapical portion of the living chamber. The conch is straight and is rather gradually expanded orad. In cross section it is subcircular but is very slightly compressed laterally. The overall length of the holotype measures some 30 mm., and at the junction of the phragmacone and the living chamber this specimen is about 39 mm. wide and 41 mm. high.

The test is thin, and its thickness measures distinctly less than half a
millimeter. On the surface of the test there are alternately elevated and depressed low flat transverse bands. The width of these bands is somewhat irregular but seems to average something like a millimeter.

The septa are simple saucer-shaped disks that are moderately convex apicad. The length of the single camera that is preserved measures about 11 mm. - inasmuch as this camera may well be the adoral one of a fully mature or senile individual, its length may not be very significant. The nature of the ventral portion of the sutures is not entirely clear, but on the dorsal and lateral zones of the conch they are straight and directly transverse. The siphuncle is small in size and is ventral and marginal in position, being in contact with the ventral wall of the conch. It appears to be composed of cylindrical segments, and at the adapical end of the holotype is about 2½ mm. in diameter.

Remarks: This species is named in honor of its discoverer, Mr. L. R. Collins. It resembles rather closely B.? cherokeesensis Miller and Owen of the Lower Pennsylvanian of Missouri and B.? mexicanus Miller of the Middle and Upper Permian of Coahuila. In all three of these forms the conch bears transverse markings, and at least those of the Missouri species (which is also known from only one specimen) are quite similar to those of B.? collinsi. Although these three species seem to possess all of the features that are generally regarded as characteristic of Bactrites, in general physiognomy they do not resemble typical representatives of that genus, for example, B. subconicus Sandberger of the Middle Devonian of Germany.

Occurrence: Brush Creek limestone in the Harvey Brick Company Quarry of Glassmere, Pennsylvania.

Holotype: Carnegie Museum, 25,800.

Pennoceras seamani Miller and Unklesbay

(Plate I, figures 3, 4)

This rare species is represented in the Collins collection by four specimens. Only one of these shows its sutures, but the general physiognomy and particularly the prominent transverse lirae of the others are sufficient to indicate their identity.

All four of the specimens under consideration are typical. They coincide well with the specific description we published in 1942, and they substantiate our statements in regard to the various morphological features of
the conch. One individual is particularly well preserved, and we are illustrating it.

**Occurrence:** Two of the specimens collected by Mr. Collins (including the one figured) came from the Brush Creek limestone in the Harvey Brick Company quarry near Glassmere; a third is from the same formation near the west end of the Sewickley bridge near Sewickley; and the fourth is from the Pine Creek limestone in the Pennsylvania Railroad cut near Witmer, Pennsylvania. The specimen mentioned last is the first one that we have seen from the Pine Creek, though, as we stated in 1942, Raymond's lists of 1910 and 1911 seem to indicate that this species occurs in the Pine Creek as well as in the Brush Creek.

**Repository:** Carnegie Museum, 25,801 (figured specimen), 25,802 and 25,803 (two unfigured specimens from Brush Creek), and 25,804 (Pine Creek specimen).

**References**

**Miller, A. K., Dunbar, C. O., and Condra, G. E.**

**Miller, A. K., and Owen, J. B.**

**Miller, A. K., and Unklesbay, A. G.**

**Raymond, P. E.**

EXPLANATION OF PLATE I

Figs. 1, 2. Bactrites? collinsi, sp. nov.
Lateral and apical (septal) views of the holotype, which came from the Brush Creek limestone near Glassmere, Pennsylvania, X 1.

Figs. 3, 4. Pennoceras seamani Miller and Unklesbay
Two views of a well preserved specimen from the Brush Creek limestone near Glassmere, Pennsylvania, X 3.

Figs. 5, 6. Coelogasteroceras dubium, sp. nov.
Lateral and ventral views of the holotype, which came from the Brush Creek limestone near Glassmere, Pennsylvania, X 1.

Figs. 7, 8. Ephippioceras ferratum (Cox)
Two views of a well preserved specimen from the Brush Creek limestone near Creighton, Pennsylvania, X 1.

Figs. 9, 10. Metacoceras cornutum Girty
Ventral and lateral views of a moderately large specimen from the Ames limestone near Trimble, Ohio, X 1.
EXPLANATION OF PLATE II

Figs. 1, 2. *Stenopoceras smithi*, sp. nov.

Lateral views of the two syntypes, both of which came from the Ames limestone near Trimble, Athens County, Ohio, × 1 (fig. 1) and 7/8 (fig. 2).

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