



SMITHSONIAN INSTITUTION  
U. S. NATIONAL MUSEUM

Vol. 88

Washington : 1940

No. 3080

CESTOCRINUS, A NEW FOSSIL INADUNATE CRINOID  
GENUS

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IN 1934<sup>1</sup> I described the new crinoid genus *Corynecrinus*, for the reception of which and one other genus (*Leocythocrinus* J. Müller) I proposed the family Leocythocrinidae in the order Inadunata. Both genera are of Devonian age, one from Europe and one from the United States. I am now able to add another genus to this family, coming from the Mississippian (upper Borden) of Indiana.

CESTOCRINUS, new genus

*Genotype*.—*Cestocrinus striatus*, new species.

*Generic diagnosis*.—

Crown. Subcylindrical.

Dorsal cup. Campanulate to urn-shaped.

IBB. Five. Large, approximately one-third the height of the dorsal cup.

BB. Of medium size, except post B, which is very large, extending to the level of the arm bases and supporting two tube plates.

RR. Relatively small. Arm facets elevated above level of plates, horseshoe-shaped, and approximately one-half width of radial at that level.

Arms. Relatively slender, composed of subcylindrical, long Br.

Number of IBr variable: 3 in l ant R; 4 in r ant R; more than 4 in ant R in type species.

<sup>1</sup> *Corynecrinus*, a new Devonian crinoid genus. Proc. U. S. Nat. Mus., vol. 83, pp. 1-7, 1 pl., 1934.

Post IR. No anal plates in cup. The entire area of the post IR up to the level of the arm bases is occupied by the hypertrophied post B. Resting on the distal faces of this B are two large plates which can be considered only as tube plates.

Ventral sac. Judged from the proximal portion of the ventral sac as preserved, the tube was relatively slender, subcylindrical in shape, and composed of fairly large plates.

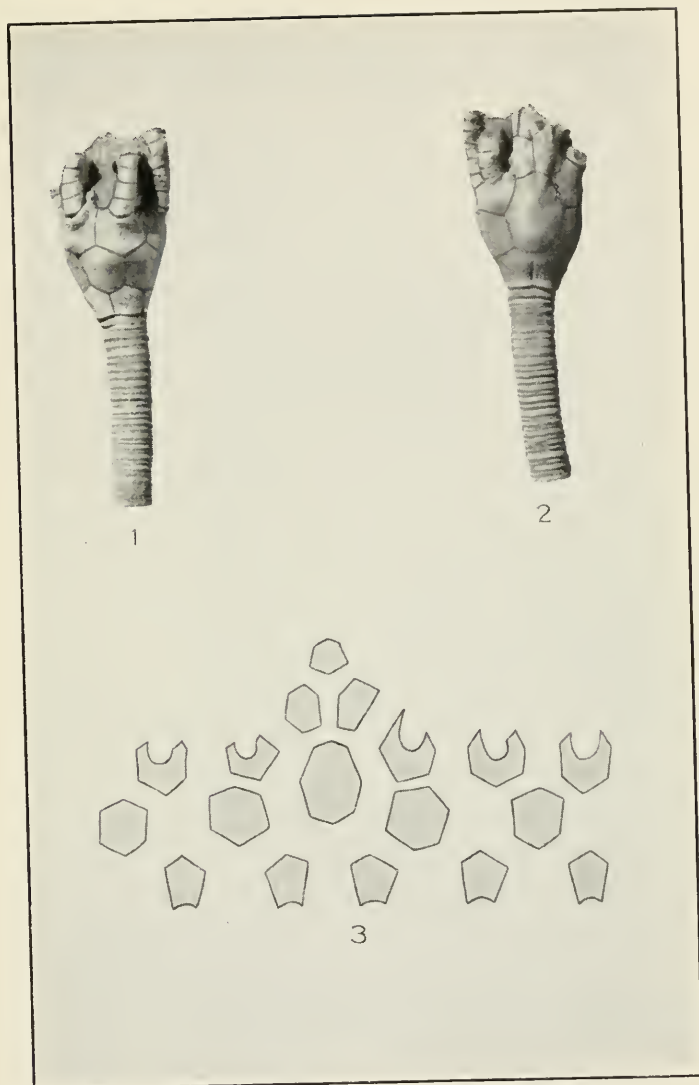
Column. Stout, circular in section, composed of alternate nodals and internodals. Lumen large, outline indistinct in polished section but apparently pentagonal.

Species. The only known species referable to *Cestocrinus* is the new species *C. striatus*, here described.

*Geologic and geographic distribution.*—The type species was found in the upper Borden (Mississippian, lower Carboniferous) of Indian Creek, Montgomery County, Ind.

*Relationships.*—The peculiar structure of the posterior interradius, together with similarities of arm structure and general resemblance, seems clearly to ally *Cestocrinus* with *Lecythocrinus* Müller and *Corynecrinus* Kirk. Of the two formerly described genera, *Cestocrinus* more nearly resembles *Corynecrinus*. The two genera differ in well-marked structural characters. In *Corynecrinus* the post B is but slightly larger than the other BB. In *Cestocrinus* the post B is very large, reaching to the level of the arm bases. In *Corynecrinus* the IBB are very small and scarcely visible in lateral view. In *Cestocrinus* the IBB are large, approximately one-third the height of the cup. The arm-bases in *Cestocrinus* are sharply elevated above the level of the RR and are relatively narrower than in *Corynecrinus*. As seen, there are many more IBr in *Corynecrinus* than in *Cestocrinus*. In *Corynecrinus* the two proximal tube plates lie well down in the cup, and the tube plates of the second range rest on the upper sloping shoulders of the r and l post RR. In *Cestocrinus* the pair of proximal tube plates have been raised above the level of the cup and rest on the upper sloping shoulders of the r and l post RR.

The persistence of this tenuous genetic crinoid line from the Middle Devonian well up into the lower Mississippian is very interesting. *Cestocrinus* shows no resemblance to any known Carboniferous inadumate genus, and one must cast back into the Middle Devonian to find like structural forms. At all times members of the family seem to have been exceedingly few in number. *Lecythocrinus* is represented by a few specimens. *Corynecrinus* is known from but a single specimen. *Cestocrinus*, also, is based on a unique specimen. Since many thousands of crinoids have been collected at Crawfordsville and Indian Creek, Ind., as well as from approxi-



CESTOCRINUS STRIATUS. NEW GENUS AND SPECIES.

- 1, Anterior view.
- 2, Posterior view.
- 3, Plate diagram.



mately equivalent horizons elsewhere, the form must be exceedingly rare. The lack of a known antecedent form in the great crinoid collections of the Burlington is significant.

CESTOCRINUS STRIATUS, new species

PLATE 31

The description is based on a perfect dorsal cup with the arms preserved in part to a length of 10 mm. and with about 25 mm. of column attached. The proximal portion of the ventral sac is also present. The specimen has been freed from the matrix.

The dorsal cup is narrowly campanulate in form and composed of fairly thin plates. The surface of the plates is finely papillose, the papillae tending to become confluent in linear series, thus forming striae normal to the faces of the plates. Low folds pass from radial to radial, radials to basals, and basals to infrabasals. The dorsal cup has a height to the arm bases of approximately 15 mm. and an average maximum diameter of about 14 mm.

The IBB are five in number, pentagonal in outline, with an average height of 4.3 mm. and an average maximum breadth of about 5 mm. The BB, with the exception of the posterior, are hexagonal in outline, having an average height of 7.3 mm. and an average maximum breadth of 6 mm. The posterior basal is octagonal in outline and has a height of 11.3 mm. and a maximum breadth of 7.8 mm. The distal point of the post B lies at approximately the plane of the arm bases. On its distal sloping faces the post B supports the two proximal tube plates. The RR are relatively small, having an average height of 5.2 mm. and an average maximum width of 6.3 mm. The arm facets are horseshoe-shaped, approximately one-half the width of the radials at that level, and stand out sharply above the surface of the plates.

The arms are proportionally slender and composed of relatively long, subcylindrical brachials. The primibrachs have an average width of 2.6 mm. In the r ant R there are four IBr and in the l ant R three IBr. In the ant R four IBr are shown without an axillary, which follows the common rule among inadunate crinoids that the ant R tends to carry more primibrachs than the other rays.

The ventral sac, judged from the proximal portion preserved, was subcylindrical in shape, proportionally slender, and composed of rather large, heavy plates. The proximal tube plates are very large, that to the right having a height of 7.5 mm. and that to the left 6.5 mm. The tegmen was composed of a flexible integument of small nodose and rugose plates.

The column is large, having a diameter in the proximal portion of 5.6 mm. This measurement allows for slight crushing. The stem lumen does not show clearly in the polished face of the column. It is large, having a diameter of approximately 2.3 mm. at a distance of 25 mm. from the cup. It seems to be pentagonal in outline. The column is composed of alternate wider and narrower columnals. These, in turn, are grouped into larger series of nodals and internodals which differ little from one another in size.

*Horizon and locality.*—The type and only known specimen was collected from the well-known locality on Indian Creek, Montgomery County, Ind., by Fred Braun in 1909. The horizon is upper Borden.

*Type.*—The holotype is in the Springer collection, U.S.N.M. No. S-4293.