THE CRINOID GENUS *POLUSOCRINUS*
IN THE AMES LIMESTONE (PENNSYLVANIAN)
OF WEST VIRGINIA

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INTRODUCTION

The crinoid described in the following pages represents a new species of the inadunate genus *Polusocrinus*, and this paper constitutes the first report of that genus in the Pennsylvanian of the Appalachian region.

I am indebted to Director M. Graham Netting and Dr. E. R. Eller, of Carnegie Museum, for the privilege of describing this specimen from the Carnegie Museum collection of fossil invertebrates. I also wish to thank Mr. Calvin Colson and the Geology Department of Ohio University for the photographs used for the illustrations.

SYSTEMATICS

Family Ampelocrinidae Kirk, 1942
Genus *Polusocrinus* Strimple, 1951

*Polusocrinus wellsburgensis*, new species
Figures 1-3

**DIAGNOSIS:** A small species of *Polusocrinus* (width of dorsal cup about 17.5 mm); cup relatively low (form ratio about 0.54) and globe-shaped; base nearly flat and tips of infrabasals scarcely showing in lateral view of the cup; basals slightly wider than long.

**HOLOTYPE:** A dorsal cup, CM 4975.

**OCCURRENCE:** Ames limestone, Conemaugh group, upper Pennsylvanian.

**LOCALITY:** Painters Run (Painter Hollow) near Wellsburg, Brooke County, West Virginia (lat. 40° 15’ 45” N, long 80° 35’ 33” W).

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²Named for Wellsburg, West Virginia.

Issued December 24, 1971
DESCRIPTION: Some of the cup plates of the holotype specimen have been dislocated, but it is evident that the dorsal cup was definitely constricted at the summit and consequently globe-shaped. The height is slightly more than half the width. The plates are smooth and the sutures are not impressed. The base is flattened and the infrabasals are barely visible in the side-view of the cup.

The infrabasal circlet is star-shaped. The stem impression is pentagonal in outline, with each side of the pentagon bowed inward slightly. Within the impression there are slight traces of culmina, and the tips of the infrabasals curve downward from the lumen. The outline of the lumen is indistinct, but it appears to be pentolobate. The circlet is very mildly concave in the vicinity of the impression. The plates become tangent to the basal plane about halfway between their distal tips and the borders of the impression. Beyond that point they curve gently upward.

Figs. 1-3. Polusocrinus wellshurgensis, new species. Holotype, CM 4975, from the Ames limestone, Conemaugh group, Brooke County, West Virginia. 1. dorsal view. 2. posterior view. 3. ventral view. x1.

The five basals are moderately convex and hexagonal, except for the posterior, which is truncated for reception of the anal plate and is consequently heptagonal. These plates are a little wider than they are long, and none of them is as widely expanded as the infrabasal circlet.

The radials are slightly convex and a little more than two-thirds as long as they are wide. The length of an interradial suture is slightly more than half the greatest length of the plate. The greatest width of these plates is at the proximal lateral corners, where the distal extremities of the basals meet the interradial sutures. Although these plates are now displaced, their short widths at the summits indicate constriction of the cup distally.

In ventral view, the radials are broadly arcuate in external outline. The outer marginal ridge is also arcuate. The external ligament pit
extends as a relatively wide slit that occupies about one-fourth of the width of the articular surface, and is fairly deep. The transverse ridge is distinct, but (probably because of wear) shows no denticulations. The ridge is fairly straight and does not conform to the bowed external outline of the plate. In consequence it does not extend to the lateral margin of the radial.

The inner articular surfaces of the radials do not preserve much detail. They slope inward, which is characteristic of the genus, forming two low, slightly concave lobes separated by a V-shaped intermuscular notch and a shallow intermuscular groove. There are also indications of shallow oblique fossae.

The anal plate is relatively large, quadrangular, and slightly longer than it is wide. The greatest width is above the middle. The distal surface has been damaged, and the facets for articulation with additional anal plates are not preserved.

The left anterior first primibrach has fallen into the body cavity, but its articular surface is still in contact with that of the right anterior radial. The plate is quadrangular, more than 2½ times wider than it is long, and narrows distally. It is broadly arcuate in outline proximally, but becomes strongly convex from side to side in its distal reaches. There is a prominent outer ligament pit, corresponding to that of the radial, on the outer surface of the proximal articular facet. The distal articular face is smooth.

Linear measurements in millimeters of the holotype specimen of Polusocrinus wellsburgensis (C.M. 4975) are as follows:

Width (estimated) of dorsal cup ............................................. 17.5
Height (estimated) of dorsal cup ............................................ 9.5
Ratio of height to width ...................................................... ca. 0.54
Maximum width of infrabasal circle ...................................... 9.5
Width of stem impression .................................................... 2.8
Width of left anterior basal ................................................... 8.8
Length of left anterior basal .................................................. 8.1
Length of suture between basals .......................................... 4.5
Greatest width of left anterior radial .................................... 9.4
Width of left anterior radial at summit .................................. 8.1
Length of left anterior radial ............................................... 6.0
Length of suture between radials ......................................... 3.5
Width of anal plate ............................................................ 5.2
Length of anal plate ........................................................... 5.4
Width (estimated) of left anterior first primibrach .................. 7.5
Length of left anterior first primibrach .................................. 2.8
In general proportions the dorsal cup of *Polusocrinus wellsburgensis* resembles that of *Polusocrinus ochelataensis* Strimple, 1952. The ratio of height to width (about 0.54) approximates that of the holotype of Strimple's species. *Polusocrinus ochelataensis* is found in the Wann formation, upper Missourian, of Oklahoma. Most authorities tend to regard the Ames limestone, from which *Polusocrinus wellsburgensis* is derived, as also of upper Missourian age, but as somewhat younger than the Wann.

The Ames species differs from *Polusocrinus ochelataensis*, however, in being a smaller form, in showing basals that are slightly wider than they are long, and in having a flatter base. These characteristics, together with the slight exposure of the infrabasals in lateral view and the constriction of the cup at the summit of the radials should serve to distinguish *Polusocrinus wellsburgensis* from other species that have been attributed to the genus.

The holotype of *Polusocrinus wellsburgensis* is, to my knowledge, the only representative of the genus that has ever been collected from the Pennsylvanian of the Appalachian region. The specimen has been in the collection of Carnegie Museum for over forty years, and at one time (Burke, 1930) I identified it as *Graphiocrinus* sp.

**References Cited**

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