

ENDELOCRINUS KIERI IN THE PENNSYLVANIAN OF NEBRASKA¹

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ABSTRACT

The occurrence of the Pennsylvanian crinoid *Endelocrinus kieri* in the Raytown Limestone, Kansas City Group, in Cass County, Nebraska, is reported. Previous records of the species were confined to the Ames Limestone, Conemaugh Group, of Ohio, Pennsylvania, and West Virginia.

In the original description (Burke, 1966) of the inadunate crinoid *Endelocrinus kieri*, the species was reported to occur in the Ames Limestone of the Upper Pennsylvanian Conemaugh Group in Guernsey County, Ohio, Brooke County, West Virginia, and Allegheny County, Pennsylvania. Since then I have found a diminutive dorsal cup of *Endelocrinus kieri* from the Northern Midcontinent region in the collection of the Department of Paleobiology of the National Museum of Natural History, the specimen whose occurrence is reported here. This specimen was collected from the Raytown Limestone of the Upper Pennsylvanian Kansas City Group at the Old National Stone Quarry, Louisville, Cass County, Nebraska.

Endelocrinus kieri is a specialized representative of its genus and the dorsal cup is quite distinctive. Besides showing the characteristic *Endelocrinus* pits at the corners of the plates, it is characterized by (1) basal plates forming most of the wall of the basal impression, (2) very tumid radial and basal plates, and (3) radials with prominent flattened forefacets. Because of the specialized character of the species, I suggested in the initial description (Burke, 1966) that it might be of some value in stratigraphic correlation.

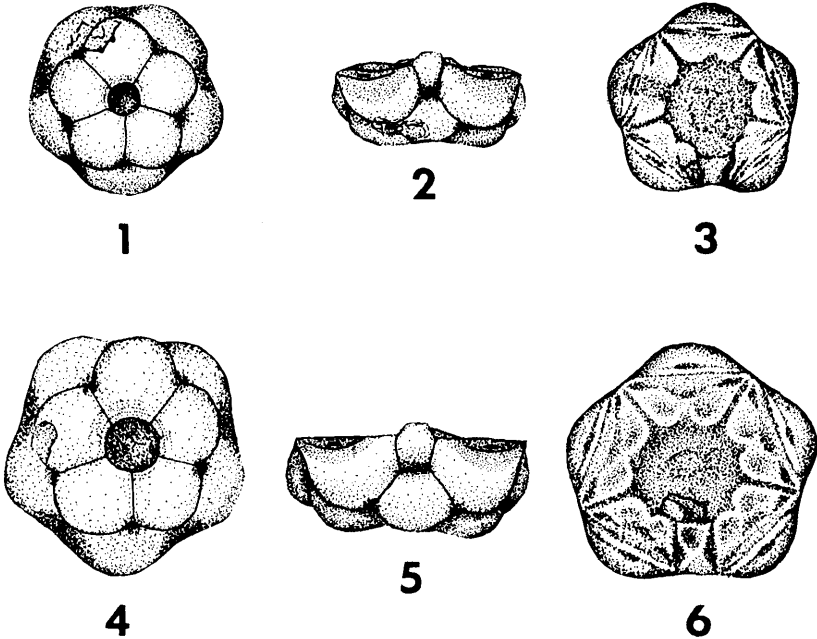
The Nebraska hypotype, USNM 174692, is illustrated in Figures 1-3, and for comparison, the holotype of *Endelocrinus kieri*, USNM 145620, is shown in figs. 4-6. The two specimens are quite evidently conspecific; most of the differences between them appear attributable to age. The Nebraska dorsal cup is smaller, its cup plates are less tumid, the width of its basal impression is relatively less, and the slopes of the radial forefacets are much steeper. The Nebraska hypotype differs from the holotype in showing an anal plate which is wedge-shaped in lateral view, and expanded in the direction of the body cavity in ventral view. Another specimen of *Endelocrinus kieri* from the collection of the Cleveland Museum of Natural History, CMNH 3843, which came from the Ames Limestone near Middlebourne, Guernsey County, Ohio, shows an anal X which is intermediate in these respects, so the variation evidently is not significant.

Linear measurements of the Nebraska hypotype, USNM 174692, in millimeters, are as follows: H 2.7; W 6.4; H/W ratio 0.42; LB 2.0; WB 2.1; LR 2.2; WR 3.4.

A comparison of the Nebraska specimen with Strimple's types of *Endelocrinus tumidus* and Moore's paratypes of *Endelocrinus parvus* in the collection of the National Museum of Natural History reveals that the plates of the dorsal cups of the Strimple and the Moore specimens are much less tumid than are those of USNM 174692, the Nebraska hypotype of *Endelocrinus kieri*. This is of interest in connection with the description (Strimple and Moore, 1971) of a specimen from

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the Missourian LaSalle Limestone of Illinois which is attributed to *Endelocrinus tumidus* Strimple. As illustrated by Strimple and Moore (plate 2, fig. 2), the plates of the cup of their crinoid appear definitely more tumid than do those of Strimple's species, and the cup shows a flattened forefacet similar to that of USNM 174692, the Nebraska specimen. Further study may demonstrate that the LaSalle Limestone crinoid is also a representative of *Endelocrinus kieri*.



FIGURES 1-3. *Endelocrinus kieri* Burke. Hypotype, USNM 174692, from the Raytown Limestone, Kansas City Group, at the Old National Stone Quarry, Louisville, Cass County, Nebraska. Fig. 1, dorsal view; Fig. 2, posterior view; Fig. 3, ventral view. $\times 4$.

FIGURES 4-6. *Endelocrinus kieri* Burke. Holotype, USNM 145620, from the Ames Limestone, Conemaugh Group, near Quaker City, Guernsey County, Ohio. Fig. 1, dorsal view; Fig. 2, posterior view; Fig. 3, ventral view. $\times 4$.

In the Appalachian region, *Endelocrinus kieri* is known only from the Ames Limestone. The possibility of its occurrence in Conemaugh marine beds younger than the Ames is remote, since no identifiable crinoid material appears to be present in those beds. However, now that the species is known to be present in sediments of Missourian age in the Midcontinent region, future collecting there may provide some vertical extension of its range.

I wish to thank Dr. Porter M. Kier, of the Department of Paleobiology of the National Museum of Natural History, for the privilege of studying these crinoids. The drawings from which the illustrations were taken are by Miss Barbara Gardiner, after photographs by Mr. Bruce Frumker, Staff Photographer, Cleveland Museum of Natural History.

LITERATURE CITED

- Burke, J. J. 1966. *Endelocrinus kieri*, a new crinoid from the Ames Limestone. Ohio J. Sci. 66: 459-464, fig. 1-12.
- Strimple, H. L., and R. C. Moore. 1971. Crinoids of the LaSalle Limestone (Pennsylvanian) of Illinois. Univ. Kansas Paleont. Contrib. Art. 55: 14, pl. 2, fig. 2.