

Article XXXVII. — NOTICE OF A REMARKABLE CASE  
OF REPRODUCTION OF LOST PARTS SHOWN  
ON A FOSSIL CRINOID.

By R. P. WHITFIELD.

PLATES XII AND XIII.

A somewhat remarkable case of the reproduction of lost parts has turned up in the arm of a rather fine specimen of *Barycrinus hoveyi* Hall sp., from Crawfordsville, Indiana, in the Museum collection.

The specimen has been in the collection of the Museum for many years (since June, 1880), but with only the calyx and base of a few of the arms showing outside of the block of stone in which it was imbedded, it having been left in this condition in consequence of a specimen of *Onychocrinus* lying obliquely across and above it, which prevented the clearing of the *Barycrinus* from the rock matrix. But in the progress of cataloguing it seemed desirable to separate the two specimens, being of different genera, in order to place them more nearly with their respective forms.

This being safely accomplished it then became possible to free the *Barycrinus* from the rock, in doing which the feature above mentioned was developed. This feature occurs on the middle branch of the right postero-lateral arm, which had been lost during life, above the eighteenth plate from the last true bifurcation of the ray on the upper side of an axial plate, where there would have been an armlet of the second grade produced in the natural course of the growth of the species, but which, together with the entire arm above this point, had been lost.

Upon each upper sloping surface of the axial plate, above mentioned, there has developed a new arm, giving off the usual ramifications, but of much smaller size than those of the broken arm below. The one following in succession to the broken arm plate has a trifle less than half the diameter of the last old arm plate, while on the axial side of the plate the new

production has more the features of the secondary armlets, resembling those below in their granulose-striate texture and in the more slender fimbriate character of the ramifications.

The enlarged figure of this part of the restored arm, accompanying this notice, will give a clearer idea of the feature than will a description.

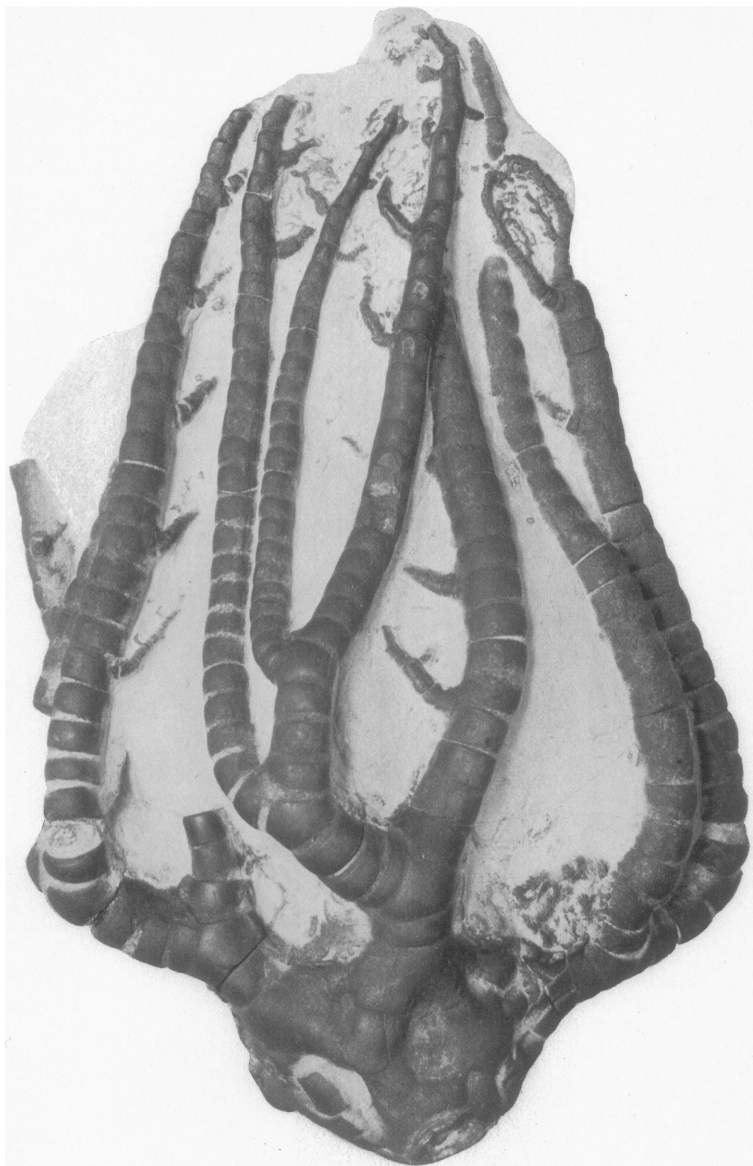
The specimen is from the Keokuk division of the Lower Carboniferous at Crawfordsville, Indiana, and was purchased by the Museum with a collection of fossils in June, 1880.

This feature, of replacing lost parts, is not extremely uncommon among fossil crinoids. I remember two or more instances of Actinocrinoids and Platycrinoids where many of the arms appeared to have been injured or perhaps destroyed, where a healing or reproduction had taken place and where the restored arms were much more slender above the injured point than below. One instance, an example of *Platycrinus striobrachiatus*, a specimen figured on photographic Plate II, distributed to some extent with copies of Professor James Hall's article in the Journal of the Boston Society of Natural History, Vol. VII, 1861, pp. 261-328, is now in the collection of the American Museum of Natural History, and shows a break or injury to many of the arms preserved on the specimen, the arms above the injured part being not only considerably smaller than below, but at the break are offset, as if they had been disjointed and had not grown in a direct continuation with the part below. Of twenty-four arms showing on the specimen there are at least ten of them which show something of this irregularity. It is rather a pleasing experience in developing specimens from the rock matrix to come across a feature of this kind, showing that these very ancient organisms possessed this reproducing vitality even as do the related animals of the present day, and that in the ancient seas the more sedentary animals were subjected to injury and reparation as their descendants are to-day.



## EXPLANATION OF PLATE XII.

The anal side of the specimen of *Barycrinus hoveyi*, showing on the upper right-hand side the reproduced part.



ILLUSTRATING REPRODUCTION OF LOST PARTS.





**EXPLANATION OF PLATE XIII.**

**The opposite side of the specimen shown on Plate XII.**





*BARYCRINUS HOVEYI* Hall.

