

SELECTION OF NEOTYPE SPECIMEN FOR *CHITON CARBONARIUS* STEVENS (MOLLUSCA, POLYPLACOPHORA)¹

R. D. HOARE

Department of Geology, Bowling Green State University, Bowling Green, Ohio 43403

ABSTRACT

HOARE, R. D. Selection of neotype specimen for *Chiton carbonarius* Stevens (Mollusca, Polyplacophora). Ohio J. Sci. 75(5): 223, 1975.

Chiton carbonarius Stevens [= *Pterochiton carbonarius*] is a common form in Pennsylvanian molluscan faunas. Since Steven's original specimens cannot be located a neotype specimen, collected from the original locality near Danville, Illinois, is designated, described and illustrated to prevent misidentification with other species. The neotype is in the repository of the Field Museum of Natural History, Chicago, Illinois, No. UC-57331.

Chiton carbonarius Stevens [= *Pterochiton carbonarius* (Stevens)] is a common form in the Pennsylvanian faunas of eastern North America. Since the original specimens have been found missing after a search of all likely repositories and it is possible that two or more species have been included under this specific designation by subsequent authors, it is necessary to select a neotype to stabilize this species to avoid further taxonomic confusion.

Stevens (1858) originally described *Chiton carbonarius* from the roof of the Danville coal (No. 7 coal) at Danville, Illinois but did not provide illustrations. The description, though brief, includes head, intermediate and tail valves but gives no indication whether these are of an articulated specimen or of several disarticulated valves. Meek and Worthen (1873) subsequently illustrated, but did not describe, separate head, intermediate and tail valves of *Chiton carbonarius* Stevens from the roof of the Danville coal at Danville, Illinois. These illustrations fit closely the description of Stevens (1858).

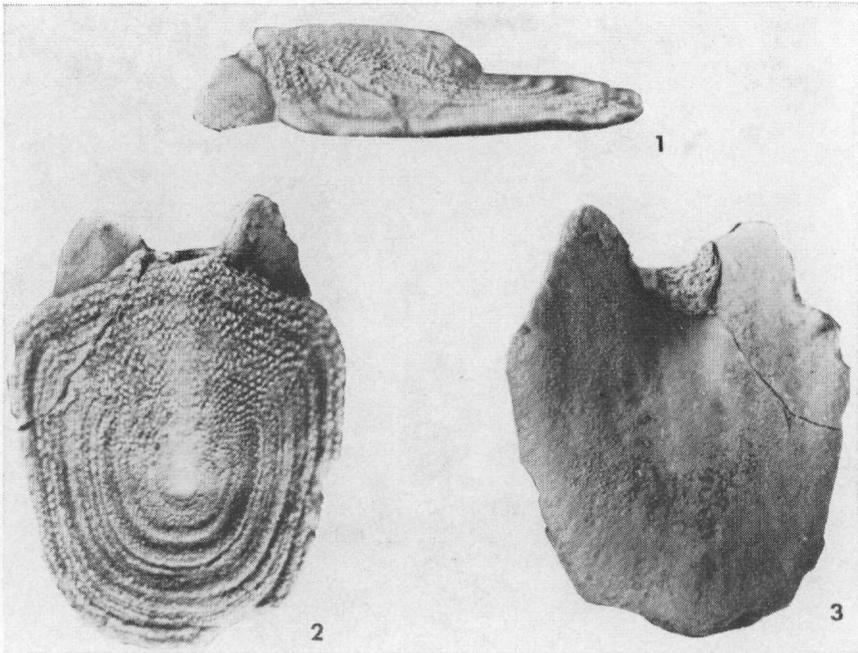
More recently, Raymond (1910, 1911) Shimer and Shrock (1944) and Hoare, Sturgeon and Hoare (1972) illustrate and/or describe specimens of this species under the designations *Glaphurochiton carbonarius*, "*Chiton*" *carbonarius* and *Pterochiton carbonarius*, respectively.

In the process of reviewing all extant specimens of Pennsylvanian polyplacophorans in North America a considerable amount of variation was evident in the shape and ornamentation of specimens which have been placed in the species *carbonarius*. Variations in valve shape, such as length-width ratios appeared to be normal growth variations within the species. Some variations in surface ornamentation of fragmental specimens younger than those described by Stevens (1858) may lead to confusion of specific designations in the future.

It has been possible to locate specimens in the Field Museum of Natural History, Chicago, Illinois, which were originally collected by W. F. E. Gurley from the roof of the Danville coal (no. 7) at Danville, Illinois, that closely approximate the illustrations of Meek and Worthen (1873). Isolated representatives of one head, intermediate and tail valves are present in the collection. Since the valves are not articulated, only the tail valve has been selected as the neotype specimen.

The neotype, a tail valve, is well preserved and nearly complete including the sutural laminae. The specimen is cracked at the left anterolateral corner and chipped slightly along the posterior and right lateral margins (figs. 1-3). A small amount of matrix is adherent along the anteroventral margin. The valve has a broadly rounded posterior margin, nearly straight lateral margins which converge slightly posteriorly, and an obtusely angled anterior margin. The central keel is broad anteriorly, terminating in a low, ventrally curved mucro posterior to mid-

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FIGURES 1-3. Lateral, dorsal and ventral views of the specimen, a tail valve, selected as the neotype of *Pterochiton carbonarius* (Stevens), $\times 4$.

length. Lateral areas of the keel are strongly sloped. Lateral and posterior margins of the valve are nearly flat. The dorsal surface of the valve is marked by strong growth varices, more so on the lateral and posterior portions, and has a surface sculpture of small nodes arranged in concentric rows. The ventral surface is smooth and concave with smooth and slightly upturned lateral and posterior margins. The sutural laminae are well developed, wide and broadly pointed.

The neotype and two other valves, one head and one intermediate, were collected from the roof rock of the No. 7 coal, E $\frac{1}{2}$ sec. 7, T. 19 N., R. 11 W., Danville Quadrangle, Vermillion County, Illinois. This locality is the same or in the near vicinity as that from which Stevens collected the original specimens, and is the type locality for the species and coincides with the type locality for the No. 7 coal (Wanless, 1956). The specimens are in the repository of the Field Museum of Natural History, Chi-

cago, Illinois. The neotype is no. UC-57331 and the two associated specimens are nos. UC-57329 and UC-57330.

LITERATURE CITED

- Hoare, R. D., M. T. Sturgeon and T. B. Hoare. 1972. Middle Pennsylvanian (Allegheny Group) Polyplacophora from Ohio. *Jour. Paleontology* 46: 675-680, pls. 1-3.
- Meek, F. B. and A. H. Worthen. 1873. Fossils of the Coal Measures. *Geol. Surv. Illinois* 5: 530-619, pls. 24-32.
- Raymond, P. E. 1910. A preliminary list of the fauna of the Allegheny and Conemaugh Series in western Pennsylvania. *Carnegie Mus. Ann.* 7: 144-158, pls. 24-28.
- 1911. Pennsylvania Topographic and Geological Surv. Rept. 1908-1910: 81-98, pls. 3-6.
- Shimer, H. W. and R. R. Shrock. 1944. *Index Fossils of North America*. 837 p., 303 pls. John Wiley and Sons, Inc. New York.
- Stevens, R. P. 1858. Descriptions of new Carboniferous fossils from the Appalachian, Illinois, and Michigan coalfields. *Amer. Jour. Sci.* 25(74): 258-265.
- Wanless, H. R. 1956. Classification of the Pennsylvanian rocks of Illinois. *Illinois State Geol. Surv. Circ.* 217, 14 p.