

2 ADDITIONAL NOTES ON PREVIOUSLY DESCRIBED DEVONIAN CRINOIDS

BY

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Through the courtesy of Fred Wattles, an amateur collector of Buffalo, N. Y., and Irving G. Reimann, of the Buffalo Museum of Science, the writer has had the opportunity of studying a small collection of crinoids which has afforded new facts for previously described species.

Craterocrinus schoharie Goldring

Figures 23 (6), 24

The original description of this species (Goldring, 1923, p. 189, pl. 20, fig. 9) was based on a single dorsal cup in the collection of the New York State Museum, accompanied by a label stating that it was collected from the New Scotland limestone at Schoharie. The only other species of this genus, *C. ruedemanni* Goldring, comes from the Onondaga limestone, Cherry Valley, N. Y. The preservation of the specimen of *C. schoharie* did not seem to be what should be expected in the New Scotland shaly limestone, but there was no rock attached and the formation was accepted as designated.

In the collection under study are two crushed dorsal cups, from the Onondaga of the Williamsville quarry, Erie county, that unquestionably belong to *C. schoharie* and show the same kind of preservation as is seen in the type. The writer, therefore, feels sure that the type also was collected from the Onondaga limestone.

In the two specimens under discussion the primary interbranchials are 12-sided in the regular interradii, 14-sided in the anal interradius. In each half-ray on the inner side there are four tertibrachs before the arm becomes biserial, the first large, the next three very short; on the outer side two tertibrachs, the first one comparatively large. The larger specimen, though poorly preserved, shows at least one division of the stout arms above the tertibrachs, giving 40 arms in all. The column in the smaller specimen shows a five-lobed central canal.

Horizon and locality. Onondaga limestone, Williamsville quarry, Erie county.

Gemmaecrinus similis Goldring

Figure 23 (1 and 2)

This species (Goldring, 1935, p. 358, 359, pl. 26, figs. 7, 8) was based upon a single, partially preserved cup, in the collection of Percy R. Powell, of Niagara Falls, N. Y., which, however, showed enough distinctive characters to assure future identification of the species. In the collection of Mr Wattles is a nearly complete dorsal cup of a younger specimen of this species, which permits fuller description.

In each radial series the primibrach is followed by two secundi-brachs in each half-ray. In the right posterior ray only are more than two tertibrachs preserved. Here in the left half-ray both the outer and inner divisions of the arm become biserial after the fourth tertibrach. The inner arm is preserved undivided for a quarter of an inch more. No statement can be made as to the total number of arms, but it would appear that there are fewer than 30.

In the anal interradius the plates have the succession 1, 3, 5, 7 (?); in the regular interradii 1, 2, 2.

EXPLANATION OF FIGURES

Figure 23

Gemmaecrinus similis Goldring

- 1 Posterior view of calyx $\times 1\frac{1}{2}$.
Hamilton: Ludlowville shale (Pleurodictyum beds); Cazenovia creek at Gebaurer's farm, between Ebenezer and Springbrook, Erie county, N. Y.
2 Basal view of same, $\times 1\frac{1}{2}$, showing well the basal projections and the anal interradius

Gilbertsocrinus spinigerus (Hall) var.

- 3 Lateral view of calyx, right postero-lateral interradius, $\times 2$.
Hamilton: Ludlowville, Tichenor limestone; near Springbrook, Erie county, N. Y.
4 Tegmen of same, $\times 2$, showing numerous spiny nodes
5 Basal view, $\times 2$

Craterocrinus schoharie Goldring

- 6 Basal view of type ($\frac{4123a}{I}$ in New York State Museum). Left anterior interradius; posterior interradius at lower right.
Onondaga limestone; Schoharie, N. Y.

Figure 24

Craterocrinus schoharie Goldring

- 1 Basal view of dorsal cup from inside. Left posterior interradius at top; posterior radius at left.
Onondaga limestone; Williamsville quarry, Erie county, N. Y.
2 Basal view of larger dorsal cup, exterior; posterior interradius at top
Onondaga limestone; Williamsville quarry, Erie county, N. Y.
NOTE. Types, except as otherwise indicated, in the collection of Fred Wattles, Buffalo, N. Y.

Photographs by E. J. Stein, New York State Museum

Figure 23

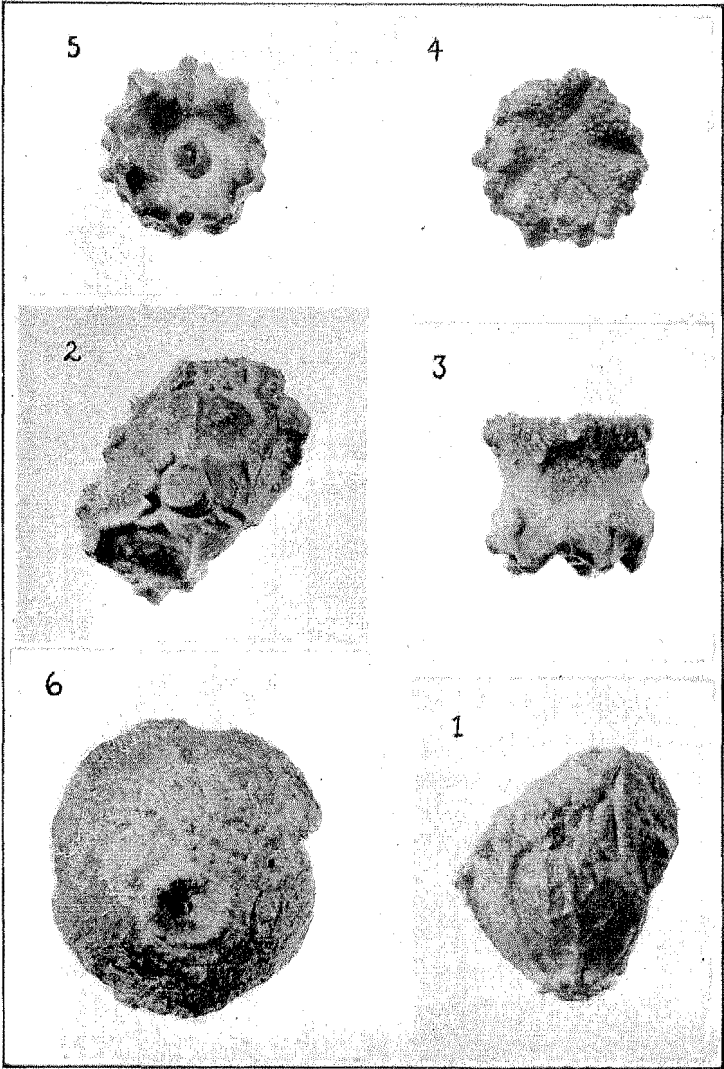
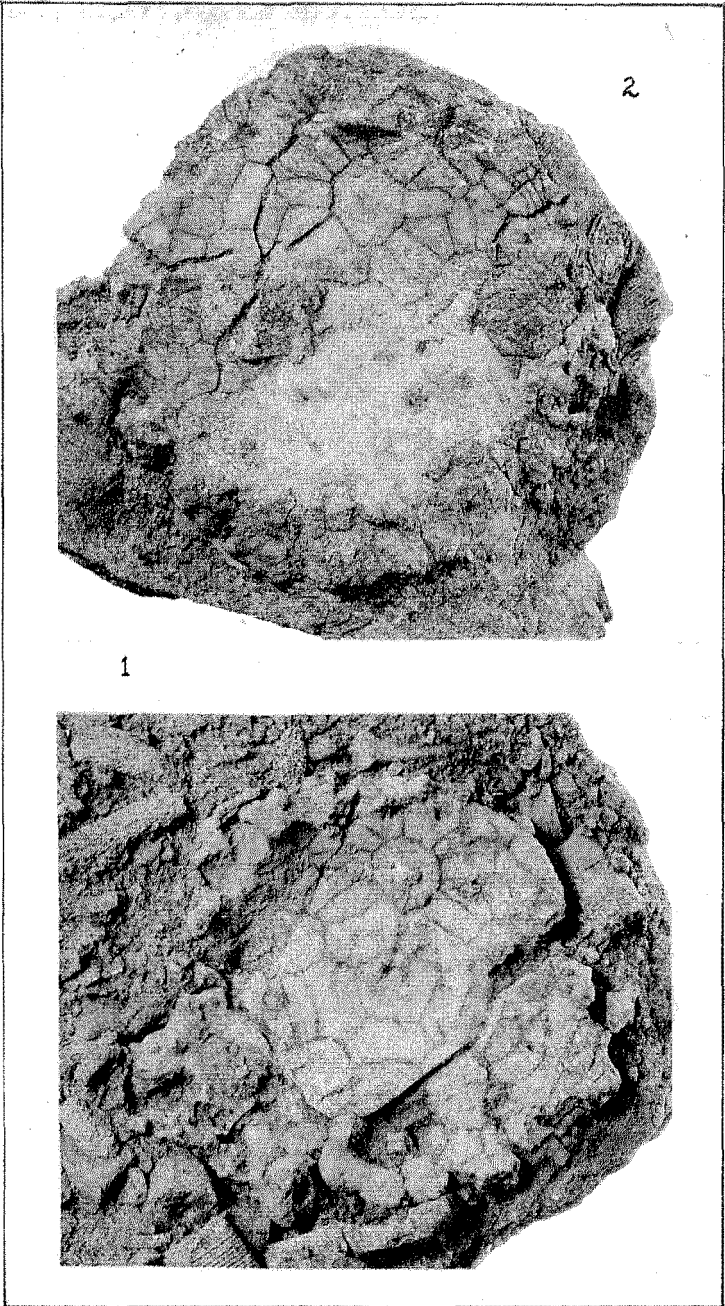


Figure 24



The reticulated character of the surface is distinct, but not so well shown as in the more mature specimen and in places tends to be granulose. The projecting basals show the tuberculated margins. The left-hand ridge from the center of the first anal to the basal ends in an additional tubercle giving four to this basal. An incipient ridge on the basal represents the right-hand ridge from the first anal. Otherwise the pattern of the ridges is the same as in the mature specimen. The six-sided figure formed by the ridges extending from center to center of radials and first anal is quite distinct. A more prominent ridge extends up the anal series of plates. In the anal interradius there is a prominent node at the center of each plate with well-developed connecting ridges. The nodes at the centers of the plates of the regular interradii are less prominent and the connecting ridges are indistinct or interrupted. The ridges traversing the radial series are strong and the low nodes at the centers of all plates, together with the depressions where the ridges cross the sutures, give a beadlike effect. This is true much less distinctly of the ridges in the interradiial areas.

Horizon and locality. From the Hamilton beds (Ludlowville: Pleurodictyum beds), Cazenovia creek, at Gebaurer's farm, between Ebenezer and Springbrook, Erie county.

Remarks. This species has been compared with *G. peculiaris* Goldring. It is found to differ also in having two secundibrachs in each half-ray, fewer plates in the second and third ranges of the regular interradii (anal interradius not preserved in *peculiaris*), fewer intersecundibrachs and the presence of radiating ridges above the first primibrachs and first interbrachials.

Gilbertsocrinus spinigerus (Hall) var.

Figure 23 (3-5)

G. spinigerus was originally described and figured by Hall (1862, p. 128; 1872, pl. 1a, fig. 9) and more recently by the writer (1923, p. 96-99, pl. 3, figs. 1-6) with full synonymy. The types from the Hamilton (Moscow) of New York are rather crushed, but better preserved material from the Hamilton (Ludlowville) of Erie county in the collections of Percy R. Powell, of Niagara Falls, and the Buffalo Museum of Science (Irving G. Reimann, coll.) has more recently been studied by the writer. All these specimens, as well as the types from Clark county, Indiana (*Ibid* figs. 3-6; Springer

collection, U. S. Nat. Mus.) show a low tegmen made up of numerous small plates of rather irregular arrangement, nodose in the ambulacral areas and oral region; with depressed interambulacral areas.

In the Wattles collection is a single well-preserved calyx that shows a variation from the types and other material studied. The nodes on the tegmen are more numerous and more strongly developed, almost spiny in places, and they are found on all plates, except those in the deepest parts of the interambulacral depressions. A small central node or tubercle occurs on the higher interradiial plates; also on the first intersecundibrachs, sometimes on the others. Some of these plates show in addition a granular surface. A distinct ridge, not so prominent as that of the radial series follows the anal series of plates. The spines are equally developed on the radials, first primibrachs, primary interbranchials and first anal. The first intersecundibrach is followed by the series 2, 3, 2, 1, where the plates are distinguishable.

The variation in the more extensive development of tubercles or nodes on the tegmen and certain plates of the cup is the only respect in which this specimen differs from the types, and this is not sufficient to justify a varietal name, particularly when there is only one specimen. Another species of this genus, *G. greenei* Miller & Gurley, has been found to show some variability (Goldring, p. 186, 1934).

Horizon and locality. From the Hamilton (Ludlowville: Tichenor limestone) near Springbrook, Erie county, N. Y.

Remarks. After this paper was handed in for publication Mr Wattles submitted a second specimen from the Ludlowville shale (Wanakah member, Pleurodictyum beds), Athol Springs. The specimen is imperfect but shows the same characters as the type.

Edriocrinus pyriformis Hall

This species was originally described by Hall (1862, p. 115, 116) from the "limestone of the Upper Helderberg group" (Onondaga limestone) south of Utica, as stated by the writer in the discussion of this species in the Devonian Crinoids of New York (1923, p. 452). Specimens from this locality are listed from the Onondaga limestone in the old locality catalog of the New York State Museum and in the type catalog of the American Museum of Natural History. The specimens in the Springer collection, originally in the Lyon collection, were obtained by exchange from Hall and were similarly labeled. Mr Springer, in his discussion of the horizon and locality

of this species (1920, p. 21), points out what he believed to be an error in citation, interpreting the quarry from which the specimens came as the Eastman's quarry "located ten or twelve miles southeast of Utica, in the region of Litchfield, where the Coeymans limestone of the Helderbergian is well developed." This correction was cited by the writer (*ref. cit.* p. 452).

E. pyriformis is also recorded in the New York State locality book from the Onondaga limestone of Babcock hill, Bridgewater, Oneida county, where there is no chance of confusion with the Coeymans limestone; and in Mr Wattles' collection are a number of specimens collected from the Onondaga limestone at Williamsville, Erie county. There is some variation among the Williamsville specimens, but only what might be expected in such an abnormal form. The base or peduncle sometimes has the appearance of a short, stout column as in the type; again, it is somewhat contorted. In some specimens the slender base appears to be attached to a short swollen column with a constriction at the point of attachment. There is no doubt that these specimens represent the same species as the type of *E. pyriformis*. Crinoid species, as a rule, appear to have only a short range, and it would be very strange to have such an abnormal type repeated in the Onondaga. Hall knew his formations very well, and this taken with the known Onondaga occurrences of the species suggests to the writer that the original citation from the quarry south of Utica is correct and that this species occurs only in the Onondaga limestone.

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