

specimens pores exist along the sutures between the plates, either a single pore at the middle of each side, or two pores along each side, close to the radial ridges extending to the angles of the plate. Half of each pore occurs on half of each of the adjoining plates. It has not been proved, however, that these pores are open in unweathered specimens. They may be covered by the epistereom, as in the case of the pores of *Comarocystites*. In *Canadocystites*, neither pores nor vertical mesostereom lamellae are present. This difference in plate structure in the three genera is remarkable in view of the close relationship suggested by the structure of the food-groove system. Owing to the entire absence of true pectinirrhombs, notwithstanding the suggestive structure of the thecal plates of *Comarocystites*, the separation of these three genera from the *Rhombifera* seems desirable. Regarding *Malocystites*, which appears related to *Canadocystis*, too little is known at present. The recumbent food-grooves extend over the upper surface of quadrangular plates arranged in uniserial order, but it is not known whether the pinnules were attached in a single row, and whether the pinnulars were arranged in uniserial order or not.

V.—ADDENDA.

27. *Notes on Caryocrinites ornatus* Say.—In *Caryocrinites ornatus* both the brachials and pinnulars are biserial in arrangement (Plate IV, figs. 4, 5). This was recognized by Hall (Pal. New York, 2, 1852, p. 219, pl. 49, figs. 1 i, k, m), although he did not get a clear idea of the structure of the pinnules from his specimens. Much better material is present in the collections of Frank Springer, in the U.S. National Museum, at Washington, and this material has been placed freely at the disposal of the writer. Compared with the length of the arms, the pinnules are very short. In a specimen, with a theca 30 millimeters in height, the pinnules attached to an arm 55 millimeters in length were 4 millimeters long. In another specimen, with a theca 12 millimeters in height, and with arms from 36 to 40 millimeters in length, the pinnules were only 3.5 millimeters long (Plate IV, fig. 4). In this specimen, each of the two series of pinnulars rests upon a separate brachial, the lower brachial of each pair being shorter. In other specimens, however, the shorter brachials occasionally are reduced to mere transversely elongated vestiges remaining between the horizontal sutures separating the larger brachials, and in those cases the two series of pinnulars rest practically against the same brachial.

Since typical crinoidal pinnules should present only a single row of pinnulars, it might be emphasized that these so-called pinnules of *Caryocrinites* are not homologous to the pinnules of crinoids, but to the brachioles of cystids. These brachioles, among the *Rhombifera* and *Diploporita*, are uniformly biserial, the individual ossicles alternating in position across the width of the brachiole. As a matter of fact, it is