

the transverse apical food-groove, on the adoral side of the protuberance, and traces of the facets for the attachment of the arms are preserved. The presence of vertical plates belonging to the mesostereom is seen along the strongly weathered sutures between the plates. Several of the plates present very clear evidence of the arrangement of the pores, through the continuous exterior surface of the mesostereom, in pairs, and directly beneath the epistereom these pores evidently are elongated in a direction parallel to the narrow spaces between the mesostereom plates beneath.

23. *The structure of the thecal plates.*—A fuller knowledge of the plate structure of *Comarocystites shumardi* is presented by the specimens belonging to the Walker Museum, at Chicago University, and by the specimens belonging to the Illinois State Museum of Natural History (Plate IV, figure 3). The structure evidently is identical with that of *Comarocystites punctatus*. There is the same grouping of pores traversing the mesostereom. The thin epistereom is non-porous, but when weathered away the outer terminations of the pores traversing the mesostereom are seen to be arranged in more or less alternating pairs. Directly beneath the epistereom, each of these pores is connected with a semi-lunate pore parallel to the outer surface of the plate, the concave sides of each of the semi-lunate pores, belonging to the same pair, facing each other. As in *Comarocystites punctatus*, some specimens show no indication of the presence of these pairs of semi-lunate pores on their exterior surfaces; in others, their presence is indicated by low, short, semi-lunate ridges. The mesostereom consists chiefly of more or less vertical plates, from 6 to 9 in a width of 3 millimeters, intercepted by much narrower spaces apparently connected directly with the interior of the theca without the intervention of a hypostereom. Directly beneath the epistereom, however, the mesostereom forms a continuous sheet penetrated only by the pores connecting the narrow spaces between the vertical mesostereom plates with the semi-lunate pores immediately beneath the epistereom. The thecal plates appear to have grown from the margin outward, so that the pores originating at the sutures later were located in the more central parts of the plates.

24. *Horizon and Distribution of Comarocystites shumardi.*—From the preceding statements it is evident that *Comarocystites shumardi* is a typical representative of the genus *Comarocystites*. The so-called variety *obconicus* is founded, it is believed, upon individual characteristics, and the name should not be retained, even as the name of a variety.

Both *Comarocystites shumardi* and its so-called variety *obconicus* were described from the Kimmswick limestone at Cape Girardeau, Missouri. By Ulrich, this Kimmswick limestone is placed at the top of the Black river group beneath the Curdsville horizon at the base of