

varies from three in a length of one pinnular, to five in a length of two of these pinnulars.

17. *The absence of food-grooves on the brachials.*—In case of the right posterior arm of *Comarocystites*, one of the branches of the transverse apical food-grooves rises for a short distance along the ventral side of the first brachial, but disappears before reaching the top of this brachial. There are reasons for believing that the absence of food-grooves on the arms of *Comarocystites* is secondary and not primitive. The small quadrangular covering-plates along one side of the pinnules, as described above, suggest the former presence of a food-groove. As a matter of fact, no trace of an actual food-groove has been noticed so far on any pinnular, but analogy with *Amygdalocystites* demands that they should be present.

In *Amygdalocystites* the food-groove follows one of the narrower sides of the pinnule, the pinnulars being compressed laterally, and the food-groove faces the mouth. In a similar manner the few covering plates found so far on the pinnulars of *Comarocystites* are on the side facing the mouth, and the sides of these pinnulars are even more compressed than in *Amygdalocystites*. Originally, a food-groove must have followed that side of the pinnule supporting the covering-plates, and a second series of covering-plates must have existed along the same side, but beyond the food-groove. Formerly the food-groove on the pinnulars must have connected with one of the brachials, thus reaching the transverse food-groove along the apical side of the theca, if the analogy between *Comarocystites* and *Amygdalocystites* and *Canadocystis* is as great as here suspected. It should be noted, however, that the facets supporting the pinnules of *Amygdalocystites* are distinctly indented on the side where the branch from the food-groove on the arm passed on the base of the attached pinnule. In *Comarocystites*, however, the facets supporting the pinnules are circular, and show no such indentation. Evidently the absence of a food-groove extends to the lower pinnulars at least.

18. *The column or stem.*—The column or stem is cylindrical, with no evidence of pentamerism either exteriorly or interiorly. The segments or columnals are very thin, alternating in thickness, about 20 occurring in a length of six millimeters in the column attached to that Billings type-specimen which retains the arm. This column has a diameter of four millimeters. The surface of the column is ornamented by minute granules, seven in a width of one millimeter, arranged quincuncially, in diagonally intersecting rows. The lumen equals about one-fourth of the diameter of the column. The flat surfaces of the columnals are striated radially. The only known complete column is attached to the specimen discovered and described by Sir James Grant, and figured by him in the Transactions of the OTTAWA FIELD-NATURALISTS' CLUB, in 1880. In this specimen the