

strands at right angles to the sutures between the thecal plates. In order to bring *Comarocystites* in line with pseudo-pentamerous *Rhombifera*, the former presence of an anterior ray of the food-groove system is imagined.

Jaekel, in 1900, separated from the *Cystidea*, under the name *Carpioidea*, a considerable number of the genera included by Haeckel in his *Amphoridea*, adding also the genera *Malocystites*, *Canadocystites*, and *Amygdalocystites*, included by Haeckel under his *Cystidea*, in the restricted sense. The chief characteristics of the *Carpioidea* were supposed to be: a loose relation of the ambulacral organs to the theca leaving only slight traces on the latter; theca never pentamerous, often distorted, usually compressed dorso-ventrally, more or less symmetrical toward the right and left; ambulacra extending into two radii; the brachials bearing the ambulacral grooves uniserial as far as known; base tetramerous or trimerous. Those *Carpioidea* possessing biserial columnals Jaekel placed in the subdivision *Heterostelea*, and those possessing a single series of ring-shaped columnals he placed in the subdivision *Eustelea*. The *Eustelea* included *Malocystites*, *Canadocystitis*, *Amygdalocystites*, and *Comarocystites*.

It must be acknowledged that the four genera here listed form a very coherent group in which trimerism or pseudo-pentamerism seems never to have prevailed. Under Bather's term, *Malocystidae*, this group has been placed among the *Amphoridea* in the more recent editions of Zittel. The relationship between *Canadocystis*, *Amygdalocystis*, and *Comarocystites* appears especially close. All of these forms are bisymmetric with the main apical food-groove extending laterally from the mouth, the anal pyramid being on the right side of the theca. Both the brachials and pinnulars are arranged in uniserial order. When the arms are oriented so that the ventral side faces away from the observer and the distal side of the arm points upward, then, in all three genera, the pinnules are seen to form a single row on the right side of the arms. In *Comarocystites* the arms are free. In *Amygdalocystites* and *Canadocystis* the arms are twisted in contrasolar direction and are attached by their left sides to the theca, leaving the right side free for the pinnules.

In the structure of their thecal plates, however, all three genera differ greatly. In *Comarocystites*, the vertical plates of the mesostereom, as exposed on the inner side of the theca, suggest strongly the plates characterizing the pectinirhombs of the *Rhombifera*, although the spaces between these plates do not open at the top in slit-like pores, as in true pectinirhombs. In *Amygdalocystites*, the inner surface of the thecal plates is marked by radial ridges which in some specimens are sufficiently defined to be called short plates. One radial ridge always extends to each of the angles of the plate, and in some specimens another ridge extends to the middle point of each side. In some