

which I describe here as *Cannopilus* (Pl. 114, figs. 7-13). All these peculiar forms may be derived from the simple annular pieces of skeleton, which are aggregated in great numbers in the calymma of *Mesocena*. The pieces of the skeleton of these Dictyochida never assume the form of slender, cylindrical, tangential tubules which is characteristic of the Cannobelida.

A third subfamily of Cannorrhaphida, the Catinulida, is represented by the remarkable new genus *Catinulus* (Pl. 117, fig. 8). The single pieces of the skeleton, scattered in hundreds or thousands throughout the calymma, are here not composed of hollow rods, as in the two former subfamilies, but are solid hemispherical caps, or small, more flatly vaulted dishes, with a peculiar radial striation. All the complete specimens of *Catinulus* which I could examine possessed four equal central capsules, united in one spherical calymma.

The common character which unites the three rather different subfamilies, the Cannobelida, Dictyochida and Catinulida, into a single family, and which separates this family, the Cannorrhaphida, from the other ΠΛΕΟΔΑΡΙΑ, is to be found in the composition of the rudimentary skeleton from numerous single pieces, which are loosely scattered either on the surface of the calymma, or throughout its jelly-mass, and which are never arranged radially, and never touch the central capsule, as is always the case in the closely allied Aulacanthida.

The slender spicula of the Cannobelida are cylindrical or spindle-shaped, tubular, scattered in variable numbers, but always in a tangential direction on the surface of the calymma. Usually they are 0.2 to 0.5 long, and 0.005 to 0.03 broad; either straight or slightly curved; smooth and simple in *Cannobelos*, spiny or branched in *Cannorrhaphis* (Pl. 101, figs. 3-5). Their wall is thin and fragile, their diameter sometimes equal throughout their whole length, at other times tapering towards both ends. Their cavity is filled by jelly, and seems to be open at both ends, since the purified and dried spicula constantly become filled by air.

The peculiar pieces of silica which compose the skeleton of the Catinulida are not hollow, like the rods of the other Cannorrhaphida, but concave hemispherical cups or more flatly vaulted little dishes, the thin flinty wall of which is slightly thickened at the circular margin, and radially striped above it. In all three species of *Catinulus* observed they were scattered throughout the calymma in hundreds or thousands (Pl. 117, fig. 8). Their relation to the Dictyochida is doubtful. Perhaps the small cups of *Catinulus* may be derived from the simple rings of *Mesocena*, by development of an operculum on one side of the ring.

The skeleton of the Dictyochida is much more developed and possesses a higher morphological interest; the numerous different forms, however, which its pieces here assume, may be all derived from the simple circular ring of *Mesocena*. This ring is formed by a thin, hollow, cylindrical, or prismatic rod, sometimes circular or elliptical, at