

is frequently very feebly developed (Pl. LXXXIV. fig. 2). In addition to the uncinates, the parenchyma contains hexasters of various form and most irregular distribution. Sometimes one has to search long for one of these hexasters in a section, while in other cases the whole preparation appears to be permeated by them. Perfectly regular oxyhexasters, in which each of the principals runs out into four strong and moderately long, diverging, secondary rays, are comparatively rare. Usually one finds one or more principal rays terminating in simple points, while others run out into three or four terminal rays. In another frequent form the two principal rays belonging to one axis are very strongly developed, and divide into four strong, diverging terminals, while the four remaining rays, which are cruciately disposed, and belong to the two other axes, run out into perfectly simple points, or are only partially divided into two terminal rays (Pl. LXXXIV. fig. 7). These latter spicules seem to be related to the forms characteristic of *Aphrocallistes beatrix*, Gray, and represented in Pl. LXXXIV. figs. 9, 10, while, on the other hand, small discohexasters sometimes occur, which agree in form and size with certain discohexasters, which occur very frequently in *Aphrocallistes vastus*. These have a diameter of 0.03 mm., and each of the short principal rays bears four to six somewhat curved diverging terminals, each of which is tipped by a small end plate, or merely by a spherical terminal knob (Pl. LXXXV. figs. 8, 9).

In regard to the soft parts, I may state that the structure of the dermal and gastral membrane hardly varies from the ordinary Hexactinellid type, and the same may be said of the trabecular network which extends between these two membranes and the chamber layer. It is different, however, with the chamber layer itself. The most important peculiarity has been already referred to in the generic diagnosis; it claims, however, more attention, especially since I was able to investigate carefully some comparatively well-preserved specimens.

In each of the honeycomb-like hexagonal spaces, which are quite open on both sides in the macerated skeleton, and penetrate the wall in a radial direction, there is a peculiar system of chambers, which opens on the gastral surface through a single wide round aperture above the lattice-work of the gastral membrane. Into the wide, canalicular space above this aperture there open laterally a number of thimble-shaped chambers of medium size, in the form of simple, closely-apposed diverticula, while from the dermal surface, three to five large blind diverticula also open into the same. These latter diverticula closely surround the wall of the tubular skeletal space, and are laterally so closely apposed to one another, that they form between them a wide, median, funnel-shaped space. The inner wall of the large diverticula which surround this funnel-shaped space is simply smooth, while their external wall adjacent to the surrounding skeleton is distended into chamber-like diverticula, just as we previously saw on the surface of the wide general excurrent space (Pl. LXXXIV. fig. 1). In this way a funnel-shaped membrana reticularis is so stretched in the hexagonal honeycomb space, that the