

section, so that the whole spicule comes sometimes to look like a many-rayed star. The principal ray is usually divided only into two, but not unfrequently three diverging terminals are thus produced, and less frequently more than three. Besides these oxyhexasters, there is a very abundant occurrence of various discohexaster forms, which are in part somewhat smaller than the oxyhexasters just described, but in part larger. These also exhibit short simple principal rays, and comparatively long divergent terminals, with small four- to six-toothed, transverse and somewhat recurved terminal plates. The number of terminal rays varies very considerably in the smaller forms; there are usually three to six or even more on each principal ray (Pl. LV. figs. 6, 15).

In the larger discohexasters, which are also rather divergent in form, the simple cylindrical principals are somewhat longer, and divide into from three to six S-shaped thin terminals, which are grouped together in a slender perianth-like bundle (Pl. LV. fig. 14). Carter has already noted this peculiar form of rosette as characteristic of the species. Of quite isolated and exceptional occurrence in the parenchyma is the small simple discohexact, figured in Pl. LV. fig. 8. It may possibly not belong to this sponge, but have originated as an intrusion from without.

The dermal skeleton includes, in the first place, medium-sized hypodermal oxyptentacts, in which the rays are for the most part smooth, and only roughened at the conically pointed ends. The four cruciate tangential rays are rarely disposed exactly in the dermal membrane, but are usually somewhat below it, or pushed out beyond, though in both cases parallel. In some cases the four tangential rays do not intersect at right angles, but are all pushed together to one side, as we shall afterwards have to note in regard to the pleural prostalia. In much closer connection with the dermal membrane are the small, finely spinose, autodermal pentacts. In these the four cylindrical tangential rays, which are tolerably straight, and at most gently incurved, with rounded or somewhat conically pointed ends, form a rectangular meshwork within the dermal membrane. The proximal radial ray, which has approximately equal length and similar characters, projects into the subdermal space (Pl. LV. figs. 2, 3). The undeveloped sixth distal radial ray is almost always represented by a rounded tubercle or knob. In rare cases, especially near the base, I found, between the pentacts, isolated cruciate tetracts of similar form and equal size (Pl. LV. fig. 4).

The gastral skeleton, which lines the inner surface of the gastral cavity, essentially resembles the dermal, but differs in this, that the finely spinous gastralria, whose tangential rays extend within the gastral membrane, are not pentacts, but well-developed hexacts (Pl. LV. fig. 5) in which the internal radial ray projects into the gastral cavity, and gives the internal surface that peculiar velvety appearance which we noted above.

The radial tufts of pleural prostalia, which project from the papillæ over the whole external surface of the body, consist of four to eight spicules which project for 1 to 2 cm.