

*Remarks.*—But one specimen of this sponge is in the collection; it measures 11 by 7 mm. along two horizontal diameters, and 14 mm. in height. The single oscule at the summit is 0.8 mm. in diameter. The ectosome, which is about 0.32 to 0.4 mm. in thickness, consists of collenchyme, with a layer of fusiform cells (myocytes) beneath the outer epithelium, and beneath the myocytes numerous dispersed vesicular cells. They are oval in outline, 0.011 by 0.014 mm. in diameter, with colourless, not stained, sharply defined walls, a spherical nucleus, about 0.0026 mm. in diameter, also not stained, and colourless, or with only a slightly bluish tinge; radiating protoplasmic strands, or a protoplasmic network, of similar optical characters, surround the nucleus, and connect it with the wall of the vesicle.

Abundantly scattered through the ectosome, and generally present throughout the sponge, are oval clusters of what appear to be minute protophytes, each an elongated, ellipsoidal, or rounded cylindrical cell, about 0.0035 mm. in diameter and 0.0075 mm. in length. Nothing could be made out of the contents, which appear to be homogeneous and structureless, and though the shining appearance of the cell, due to the difference of its refractive index to that of the cellular elements of the sponge, led one to imagine the presence of a cellulose envelope, yet the application of Schulze's solution yielded no cellulose reaction. With iodine no indication of starch was obtained.

*Choanosome.*—The flagellated chambers vary from about 0.0276 to 0.035 mm. in breadth, and are usually about 0.0237 mm. long. The prosopyle varies from about 0.008 to 0.0158 mm. in diameter, and the apopyle from 0.012 to 0.027 mm. The choanocytes present a rounded, almost spherical base, about 0.003 in diameter, produced into a collum of about 0.004 mm. in length; from this a tubular collar, 0.008 in length, extends up to the fenestrated membrane of the chamber, into which it passes; the total length of the choanocyte, when extended, is thus about 0.015 mm.; when contracted, it is barely half of this, viz., 0.006 mm.

The spicules are many of them still invested in their scleroblasts, and afford excellent opportunities for determining the relative position of the scleroblastic nucleus; in the case of the oxeas two measurements were obtained, in one the nucleus was seated exactly midway between the two ends of the spicule, in the other it was found to be 0.197 mm. distant from one end and 0.257 mm. from the other; for the anatriænes also two measurements were obtained, in one the nucleus was found on the rhabdome, 0.71 mm. from the proximal end and 0.395 mm. from the cladome, in the other 1.065 mm. from the proximal end and 0.395 mm. from the cladome; in the case of the single orthotriæne, the nucleus was found to lie 0.257 mm. from the proximal end and 0.079 mm. from the cladome. If we regard the nucleus of the scleroblast as the morphological centre of the spicule, these results show that the cladome of the triænes is equivalent to or represents from one-third to one-half of the length of the rhabdome. The size of the scleroblastic nucleus, which is oval in outline, is about 0.02 mm. along one diameter,