

dermal skeleton consists, according to Sollas, of numerous rough oxypentacts. No uncinates or scopulæ were found.

2. *Dactylocalyx subglobosus*, Gray (Pl. XCIX.).

Through the kindness of Professor O. Schmidt I obtained the half of an unfortunately much injured and partially macerated dried specimen of that sponge which Gray described in 1867 under the title *Dactylocalyx subglobosus*, and figured in the Proceedings of the Zoological Society of London, 1867, pl. xxvii. fig. 1. I was thus able to study the skeletal structure of this form. While I can, without further comment, simply corroborate the results of Gray and O. Schmidt as to the general form and macroscopic features, I have been led to some divergent conclusions as to the minuter structure. To these I must therefore briefly refer. Like Gray's specimen, and that figured by O. Schmidt in his *Spongien des Meerbusens von Mexico* (Taf. iv. fig. 8), the specimen lent me for examination, and represented from a photograph in the outer view in Pl. XCIX. fig. 1, exhibited a deep, thick-walled, pear-shaped cup, with a comparatively broad basis. The wall consists of a much folded plate. The clefts and furrows of the internal surface are narrower and more longitudinal than the more irregular cavities and furrows on the exterior.

While former investigators have seen in the folded plate, which forms the entire wall of the goblet, only a compact mass traversed by small round canals, I find it to be composed of a fine network of anastomosing tubes, 0.3 to 0.5 mm. in transverse diameter. The main direction of the tubes forming the framework is indeed radial to the surface of the entire sponge, but so many lateral branches of equal width are given off in every direction, anastomosing with adjacent tubes, that the whole appears as a thick and irregular felt-work. The cavities and interjacent spaces which occur between these anastomosing tubes, and, of course, communicate with one another in all directions, have the same diameter as the tubes. While I found this intercanalicular system of cavities closed on the inner gastral surface by a reticulated plate, I saw their free apertures here and there on the outer dermal surface. Here too, however, they are doubtless covered over by the delicate porous dermal membrane. The water streaming in from outside must find its way first into these interstitial spaces, then through the walls of the tubes into their lumen, and thence into the large gastral space, and perhaps also to the exterior by the dermal terminal apertures which are probably present during the life of the sponge. In fig. 2 of Pl. XCIX. I have given a diagrammatic representation illustrating my conception of the structure.

The dictyonal framework supporting the wall of these narrow tubes exhibits moderately strong irregularly tuberculate beams, with square, triangular, or round meshes without any definite regularity. The parenchyma includes, besides simple