

by 0.0513 mm.; and a long slenderer variety, anisoactinate, with the maximum diameter nearer the distal than the proximal end, which is frequently attenuated to a filiform extremity, 3.5 by 0.0237 mm.

2. *Orthotriæne* (Pl. XIV. fig. 11); rhabdome conical, slightly constricted below the cladome, almost cylindrical for the first distal fifth of its course, and then attenuating rapidly to an almost filiform, sharply pointed extremity; cladi conical, diverging from the rhabdome outwards and forwards, and suddenly reflected close to the pointed end, so as to become horizontal or bent backwards; one of the cladi may occasionally, but rarely, bifurcate past the point of retroflexion. Rhabdome 2.36 by 0.079 mm., cladi 0.254 mm. long.

II. Microsclere. 3. *Chiaster* (Pl. XIV. figs. 12, 13), varying from a smaller form with a distinct centrum and short actines to a larger without a visible centrum and longer actines, actines in both forms usually tylote, in the larger sometimes much reduced in numbers, roughened and thickened; smaller form about 0.012, larger 0.016 to 0.0197 mm. in diameter.

*Colour*.—Greyish-white.

*Habitat*.—Bahia, September 1873; depth, 7 to 12 fathoms.

*Remarks*.—There are two complete specimens of this sponge in the collection; the largest measures 37 mm. in height and 40 in width by 32 in breadth. The single oscule is 5 mm. in diameter, and the cloaca, which enters the sponge very obliquely, running almost parallel with the surface, is nearly 20 mm. in length. Its roof for a considerable part of its course is furnished by the membrane of the oscular margin. The ectosome (Pl. XIV. fig. 14) is a cortex of variable thickness, depending on the size of the subcortical canals, and usually ranging from 0.8 to 1.0 mm. It is widely excavated by the ectochones, which are of various sizes, their roof is perforated by the short canals of numerous pores. The ectochones often communicate below, several together, with a common canal, which runs parallel to the surface, and appears to represent the endochones and subcortical crypts of other corticate sponges. Beneath the outer epithelium and its associated chiasters lies a thin layer of fusiform cells variously orientated parallel to the surface; on the inner face of this numerous oval vesicles, about 0.008 mm. long, are scattered; they contain a darkly stained protoplasmic body, which about half fills them, and appear to be prolonged into two darkly stained fibrils, one proceeding from each end; in many cases they lie with their long axis pointing at right angles towards the outer epithelium up to which the fibril from the outer end extends, while the other fibril descends into the general tissues and becomes lost to view. Next succeeding is a layer of tissue, consisting partly of fusiform cells, partly of collenchyma, the former predominating, but not always to the same extent; the fusiform cells of this layer wander in tangential, radial, and intermediate directions, and frequently run parallel to the sides of the ectochones. This layer