which occur irregularly at intervals of 5 to 15 mm. over the whole skin, roundish tufts of radially disposed, pointed spicules, 3 to 6 cm. or more in length, project. From the somewhat protruding oscular margin, there projects a continuous, cuff-like, annular fringe of (3 to 4 cm.) long pointed spicules, with slight outward curvature. The whole downward directed surface, which is markedly enlarged by the above described oblique flattening of the sponge, bears a thick basal tuft, 10 cm. in length by 20 to 24 in breadth, and composed of much felted spicules. As in *Pheronema annæ*, *Pheronema carpenteri*, and *Pheronema globosum*, this tuft is composed of numerous individual and separate bundles of spicules, springing from the whole of the lower surface (Pl. XLVI. fig. 1). The external surface of the skin, as seen between the laterally projecting tufts of spicules, appears to the naked eye very uniform and even. Here and there, through the somewhat thick covering of the subdermal cavities, the afferent canal system may be recognised (Pl. XLVI. fig. 3). The internal lining of the gastral cavity, which is also formed from a firm uniform layer, is penetrated by groups of pores, with the exception of a somewhat protruding thick zone, 2 cm. in breadth, close beside the oscular margin. The groups of pores consist of three to five roundish exit openings of the efferent canals, and are covered by a delicate gastral network (Pl. XLVI. figs. 1, 4, 10, 11).

The wall of the sponge, which measures 4 to 6 cm. in thickness, is penetrated by roundish lacunæ and ducts of the afferent and efferent canal system, which, in their widest portions, especially below the dermal and gastral walls, attain a diameter of 10 mm. and more (Pl. XLVI. fig. 2). Between these wider passages there are tolerably thick (up to 10 mm. and more) tissue layers, which are penetrated by much narrower canals, opening laterally with narrow apertures into the larger (Pl. XLVI. fig. 2).

The spicules which belong especially to the parenchyma are of the following main types:—first of all, numerous strong pentacts, usually with a greater radial ray, while the four others do not always lie quite in one plane, and therefore not exactly at right angles to one another, but are slightly bent in various ways. It seems as if these parenchymal pentacts were originally hypogastralia and hypodermalia, which became secondarily involved in the parenchyma proper (Pl. XLVI. fig. 7). A second form of skeletal element, occurring abundantly in the parenchyma, represent the small oxyhexacts. The straight, regularly disposed, moderately strong rays of these forms are beset with somewhat distant, longer or shorter spines, projecting somewhat transversely (Pl. XLVI. fig. 8). In the third place, there are in the parenchyma, and in special abundance near the outer skin, uncinates of various length. The shorter forms, 0·6 to 1·0 mm. in length, are comparatively thick, and furnished with strong compressed barbs. They occur in irregular distribution throughout the parenchyma, while the longer forms, some mm. in length, project radially in bundles to the outer skin, or penetrating the latter, pass into the tufts of the pleural prostalia. On these long uncinates there are numerous barbs all round, longer and more slender than on the shorter forms, and further closely