maximum height, was brought up on a fishing line used from the shore; it is now divided into two parts by a transverse section, but no part is missing. The surface is more or less incrusted with foreign bodies; on the upper surface these are chiefly small fragments of shell, on the sides and lower surface small pebbles, which are attached by strong fibrous bands.

There are as many as six large oscules on the upper surface, the largest measuring 12 by 8 mm. Each opens through a thick membranous margin into a large cloacal cavity, within which a species of Ophiurid is sometimes found. The walls of the cloaca are produced into ridges and thick membranous partitions, between which the excurrent canals open by round or oval apertures, which are spanned over by a fibrous network with large oval meshes.

The ectosome, as in other species of *Pilochrota*, extends further inwards than in most corticate sponges, in so far as it surrounds the canals, which in other sponges would be known as the subcortical crypts; its total thickness varies from 1·1 mm. to 1·6 mm.; the distance from the surface to the homologues of the subcortical crypts is 0·5 mm. to 0·65 mm. on an average. Beneath the outer epithelium is a layer of chiasters, followed by a darkly stained fibrous felt, usually about 0·16 mm., but sometimes reduced to 0·03 mm. in thickness; this passes into a layer of collenchyme 0·24 mm. thick, containing numerous fusiform cells; oval vesicular cells 0·012 mm. in diameter, and apparently empty except for a very evident nucleus, 0·004 mm. in diameter; and faintly or not at all stained granule-cells, which occur singly or in groups of from two or three to a great number, forming oval or round clusters 0·06 mm. to 0·1 mm. in diameter. These last cells, when occurring singly, are oval in outline, and about 0·012 mm. to 0·016 mm. in diameter. The component granules are spherical and of very uniform size, about 0·002 mm. in diameter; they appear to be stained at the edges, but not in the middle, an appearance which may be due to the presence of an intracellular protoplasmic network. An oval granular space, about 0·004 mm. in diameter, is sometimes present amidst the granules, and is often more deeply stained than they are; it may represent a nucleus. When aggregated in clusters the cells become polygonal by appression, and are sometimes separated from each other by thin deeply-stained partitions, which form a kind of intercellular framework. Though most abundant in the outer half of the cortex, these cells and cellular aggregates are not confined to it, but occur generally throughout the sponge, and are especially noticeable in the walls of the larger water canals. Occasionally they spread out immediately below the lining epithelium of a canal in a single layer, which has somewhat the appearance of a layer of granular epithelial cells, like those figured by Poléjaeff in his Report on the Calcareous Sponges.[1]

The middle collenchymatous layer of the cortex passes into an inner fibrous felt, 0·24 mm. thick, and beneath this lie the intercortical canals, which are homologous with

[1] Poléjaeff, Zool. Chall. Exp., part xxiv. pl. viii. fig. 8.