The choanocytes are well preserved; all the details of their well-known structure, except the collar, being clearly displayed. The fenestrated membrane is preserved in some of the chambers only, and when present the flagella are not visible. On the other hand, when the flagella are preserved the fenestrated membrane cannot be traced. The length of the body of a collencyte is about 0·004 mm., of the flagellum 0·016 mm.

The mesoderm of the choanosome is a collenchyma; it varies considerably in relative abundance, amongst the chambers it is frequently very poorly developed, the walls of these often lying nearly in contact with each other, but in other places it attains considerable thickness, and is subject to extensive modification; thus it forms a proper wall to the water canals, which are furnished with vela, usually provided with sphinctrate apertures, and it follows the spicular fibres in their course, and then contains numerous fusiform cells which usually lie parallel to the length of the spicules.

Genital products.—Sperm masses are abundantly present, occupying cavities in the mesoderm. They arise from finely granular cells, about 0·018 mm. in diameter, with an evident oval nucleus 0·007 mm. in diameter, and a spherical nucleolus 0·003 mm. in diameter; similar but smaller cells occur in the mesoderm, down to 0·008 mm. in diameter. By segmentation of the mother cell the sperm mass is produced. It is not enclosed in a cover-cell, but the cavity of the mesoderm in which it lies is lined by so-called endothelium, surrounding which is the usual collenchyma, without any special accumulation of collencytes. The developing sperm clusters occur in cavities of from 0·04 to 0·05 mm. in diameter, but the mature sperm occupies cavities of much larger size, from 0·1 to 0·175 mm. in diameter. The ripe spermatozoa present an oval head, about 0·001 mm. long, from the side of which, near one end, the "tail" arises and attains a length of about 0·01 mm. or more.

Skeleton.—The spicular fibres are spirally arranged, in a manner which will be found more precisely described under the species *Cinachyra barbata*, where a similar arrangement obtains.

Spicules.—The triænes begin to appear within the choanosome, just below the ectosome; the youngest forms are found at a distance of about 2·25 mm. below the outer surface, and between these and the exterior a series of cladomes of gradually increasing size occur.

The cladomes of the triænes lie on the exterior of the spicular fibre, and it would appear to be owing to the pressure exerted against them, when they come in contact with other spicules, that one or more cladi are sometimes suppressed, or, if not suppressed, forced into an irregular mode of growth, by which they become deformed, one or more cladi of an anatriæne, for instance, pointing forwards instead of backwards, or, if retaining their usual direction, losing the usual regular curve and becoming crooked.

Associated with these variously deformed spicules are others in which a fourth cladus is developed, but this more frequently happens with the anatriænes than the protriænes.