

(b) The Choanosome.

According to Schulze¹ the ectoderm of the larval sponge furnishes not only the epithelium clothing the surface of the sponge, but also the epithelial lining of the canal system from the pores on the surface to the inhalent apertures of the flagellated chambers; while the endoderm furnishes the collared cells and also the epithelial lining of the canal system, from the exhalent apertures of the flagellated chambers to the margin of the osculum; the remainder of the sponge is mesodermal.

If this view be correct, all three germinal layers, viz., ectoderm, mesoderm and endoderm, take part in the formation of the choanosome.

Nevertheless the choanosome presents us with much less variety in histological structure than does the ectosome; a fact which is probably to be accounted for by the circumstance that it does not come into such direct contact with external conditions, and is hence less subject to modification. All the different histological elements (viz., stellate, amœboid, flagellated, pavement and fibrous cells) which take part in the formation of the choanosome in the Monaxonida, are, with the exception of the flagellated cells, found also in the ectosome, and we may, accordingly, dismiss this part of our subject very briefly. The extent to which the ground substance, in which the flagellated chambers are embedded, is developed varies much. In the *Clavulina* there is, at any rate as a general rule, very little indeed, and the flagellated chambers are packed very closely together (*vide* Pl. L. fig. 1*b*). In the *Halichondrina* (e.g., *Esperella murrayi*, Pl. XLVIII. fig. 2*d*, and *Axinella* (?) *paradoxa*, Pl. XLIX. fig. 2) there is commonly more, and the chambers lie further apart from one another. It is moreover sometimes stated that there is a distinction between these two groups in the character of this fundamental tissue; that in the *Clavulina* it is finely granular, while in the *Halichondrina* it is clearer and more gelatinous. That there is some difference of this nature there can be no doubt, but it has probably also been somewhat confounded with the difference already mentioned, viz., the much smaller total amount of ground substance present in the *Clavulina* as compared with the *Halichondrina*.

We have, in short, no new facts to add concerning the histological structure of the choanosome, except with regard to the fibrous tissue accompanying the bands of spiculo-fibre, and this has already been fully dealt with in treating of the skeleton.

Special Structures.

We may conveniently describe in this place certain very remarkable and quite unique structures present in an abyssal sponge, *Cladorhiza* (?) *tridentata*, nobis. The shape of

¹ *Zeitschr. f. wiss. Zool.*, Bd. xxxiv. p. 438.