

squamous epithelium. The cells are large, and have centrally placed round nuclei which stain brightly with carmine. On the internal longitudinal bars the cells become modified (Pl. IX. figs. 5 and 6). Towards the front or most internal part of each bar, the cells begin to become smaller in superficial area, but deeper, and with larger nuclei. This increases till they come to a series of cubical or short columnar cells, with large distinct nuclei, forming a band down the front of each bar. These columnar cells I expected to find ciliated, and probably they were so when living; I have searched for the cilia carefully, but in vain. The nuclei of all these cells stain brilliantly with carmine, and under a moderately high power where the outlines of the cells are not distinguishable, an internal longitudinal bar in profile presents a curious appearance (Pl. IX. fig. 5). The whole surface is scattered over with red dots, which are larger and very much more closely placed towards the internal free edge, while further out they diminish in size and are more distant.

The chief peculiarity about this branchial sac is its open network. The meshes formed by the intersection of the transverse and internal longitudinal bars (Pl. VIII. fig. 3, *mh.*) are perfectly patent, and are not filled up by any other structure, the entire system of fine longitudinal or interstigmatic vessels so generally present in the branchial sac being here completely absent; so that, strictly speaking, no stigmata are present, or, better still, the stigmata coincide with the meshes.

*The Endostyle* is a very conspicuous organ in this species. It is of considerable size, and has the edges of a bright opaque white colour, so that it is seen at once on looking into the branchial sac. As usual it has the form of a deep groove extending along the ventral edge of the branchial sac, and bounded laterally by raised pads. The bottom of the groove is of a rich brown hue, but the prominent edges are of a chalky white colour.

When a small piece of the endostyle is cut out and laid on a glass slide, the edges fall down outwards and leave the bottom of the groove exposed (Pl. VIII. fig. 4). One notices then that the central brown part (Pl. VIII. fig. 5, *c.b.a.*) consists of several narrow longitudinal bands along the middle, and two darker and broader bands at the sides (*l.b.b.*), all outside the latter being either transparent (*t.a.*) or chalky white (*w.e.*). The central narrower bands are of various tints of brownish yellow, but none are so dark as the lateral bands. Outside these lateral bands is a broad translucent space (*t.a.*), and outside that comes the prominent white border (*w.e.*) which is now seen to owe its colour to a series of quadrangular white patches placed side by side, and of which every alternate patch is considerably brighter than the intermediate ones (Pl. VIII. fig. 4). In some parts of the endostyle the lateral brown pads are further from the centre than usual, and they then lie on the translucent area immediately inside the white edges.

A microscopical examination shows that the white colour of the patches forming the edges of the groove is due to the presence of a large number of calcareous spicules matted