

series of meshes, basement-tissue of considerable thickness, and, lastly, the glandular coat, which fills the whole interior. The structure is now joined to the diminishing fundus of the body-cavity, but is wholly separated from the thick basement-tissue of the body-wall, which forms a continuous ring. The next section (Pl. II. fig. 4) presents a junction between the basement-tissue of the body-wall and that of the special organ now under consideration, and a lumen appears in the chamber of the latter. The channel then gets outside the basement-tissue of the body-wall, which is incurved to suit the circumstances, and presents, from the arrangement of the tissues, a somewhat reticulated appearance on each side of the latter just as it leaves the body-cavity. It then passes to the exterior at the tip of the body in the form of a duct, having an inverted  $\Lambda$  shape (Pl. II. fig. 5), the inner lining of the canal being smooth in section, from the closely arranged cylindrical epithelium, while the surrounding region is composed of the more lax hypoderm of the body-wall.

In longitudinal sections of those in which the reproductive organs are well developed, the strands of this apparatus lead to the posterior end of the alimentary canal, near which are the masses of the reproductive organs. No distinct lumen exists internally, but such may, of course, appear at intervals.

The exact nature of this remarkable organ is unknown, further than that it appears to be glandular, and in close relation with the reproductive system; and it presents a new character in the morphology of the group. Its position would correspond with the pit of the sac, the condition of which is so marked a feature during development (*i.e.* when the *Actinotrocha* becomes vermiform). It is possible that it may form an accessory channel for the issue of the ova. The hollow cup-like surface formed by the thickened hypoderm of this surface in some specimens would seem to indicate its use for fixation.

#### *Tentacles.*

The tentacles or branchiæ arise from the slightly enlarged cephalic end by a somewhat firm basal web which is entire ventrally, but is widely split dorsally (Pl. I. fig. 1), so as to present the aspect of a double fan, as in the Sabellidæ. Indeed, viewed from this surface, each fan or volution is supported on its own basis, which, moreover, is oblique—elevated in the centre, and sloping downward and outward externally. The basal web remains entire for about a third of the total length of the tentacular arrangement, and then breaks up into a multitude of simple slightly tapering filaments, which are pale throughout the greater part of their length, but tinted of a dark-brownish hue toward the tip. Externally the surface of each is densely coated with cilia, which are somewhat longer toward the tip of the process. As ordinarily seen in the preparations, the branchial fan performs about three volutions. The skeletal elements of the apparatus<sup>1</sup> commence on the sides of the anterior region of the body as a series of

<sup>1</sup> Professor Ray Lankester, in his article "Polyzoa" in the *Encyclopædia Britannica*, attributes the original description of these to Mr. Caldwell.