

The course of the alimentary canal is sufficiently explained by means of fig. 2.<sup>1</sup> The mouth (*m.*) is seen to be overhung by the large proboscis (*p.*), otherwise known as the epistome or buccal shield. The dorsal and ventral mesenteries are not visible, since the section is not exactly median. The third body-cavity (*b.c.*<sup>3</sup>) is very large, and contains the alimentary canal and ovaries. The anterior body-cavity (*b.c.*<sup>1</sup>) continues to form the lumen of the proboscis, whilst the relations of the collar-cavities are not quite those of the preceding figure. Dorsally the two halves of the body-cavity of the collar have extended forwards into the proboscis region, whilst ventrally they are to be found (apparently fused?) solely in the post-oral lamella or operculum. The cavities of the proboscis and of the collar (and more particularly of the latter) are to some extent obliterated by muscles and connective-tissue. The notochord (*nch.*) has, in the adult, the form of a slender bar, provided with a fine lumen, stretching forwards in the proboscis-stalk into the proboscis itself. It is continuous at its base, as in the young bud, with the epithelium of the alimentary canal.

The further relations of the notochord will be described in connection with fig. 4.

The central nervous system is developed on the dorsal side of the collar as a mass of ganglion-cells and nerve-fibres lying outside the basement-membrane of the epidermis. It is, however, continuous anteriorly with a similar development of nervous tissue situated on the dorsal aspect of the proboscis, and laterally with a well-developed nerve-layer on the dorsal sides of the lophophoral arms. In the young bud, in which the collar is represented by a region of the body separated by transverse grooves from the proboscis on the one hand and the trunk on the other, the condition of the central nervous system as a development of the collar is particularly well marked, although even at an early stage a thinner nerve-layer occurs on the proboscis. In the adult there is no sharp line between the nervous tissue of the collar and that of the proboscis. At about the level of the anterior end of the notochord, the nerve-layer is perforated by a pair of pores—apparently derivatives of the ectoderm, which pass from the exterior into the body-cavity of the proboscis (*p.p.*, fig. 2). These pores are disposed symmetrically with regard to the median plane of the animal, and are at no great distance from that plane.

In most species of *Balanoglossus*, it is well known that an asymmetrical proboscis-pore occurs on the left side, whilst in *Balanoglossus kupfferi*<sup>2</sup> two proboscis-pores are present. It is thus obvious that the proboscis-pores of *Cephalodiscus* are a further feature in support of the view that this animal is related to *Balanoglossus*, the disposition of these pores in *Balanoglossus kupfferi* being in this respect particularly noteworthy.

One of the two ovaries (*ov.*) is represented in section in fig. 2. The duct (*ovd.*) is

<sup>1</sup> A fold in the intestinal region of the alimentary canal, of the existence of which I have been informed by Professor M'Intosh, has not been inserted in the diagram.

<sup>2</sup> Vide Bateson, *Quart. Journ. Micr. Sci.*, vol. xxvi. p. 555.