

acquires its narrow firm texture even before taking the forward curve along the dorsal wall. The gut forms a somewhat large canal, which proceeds along the dorsal wall above the stomach to terminate on the anterior prominence of the body in the anus, which lies considerably above the region of the plumes, and, indeed, the area in which the large pigment-spots are situated intervenes. There is thus a decided difference when the anal region is contrasted with that in *Rhabdopleura*, in which the anus is situated close to the base of the tentacular arms on the dorsal side of the animal, that is, on what Sars terms the posterior region. Lankester, however, in his figure¹ shows the anus elevated on a rectal cone, with a depression between it and the base of the lophophoral region; and, moreover, on the lateral and ventral faces of this cone isolated blackish pigment-corpuscles are present. No rectal cone is present in *Cephalodiscus*, for the prominent anterior end of the body carries the anus on its summit. It has the form of a more or less elliptical aperture, often of considerable size. The minute structure of the wall of the intestine differs considerably from that of either gullet or stomach by its well-defined boundary-line—both externally and internally. The external consists of the firm basement-layer, which ventrally invests the stomach, and which at each side of the usually elliptical or transversely elongated gut (in section) runs into a thinner basement-layer bounding the canal dorsally within the proper wall of the body. The granular glandular coat which follows is narrow, and is limited internally by a remarkably definite margin in section, so that the canal is at once distinguished in the preparations. In Professor Lankester's section² of the intestine in *Rhabdopleura*, no such compact and definite wall is observable, the gut apparently being enclosed by a somewhat moniliform layer of cells. This divergence in structure doubtless indicates difference in function, probably in relation to the free and the fixed conditions of the respective animals. The terminal region of the gut (or rectum) frequently shows considerable dilatation, the indigestible debris being probably sent out at intervals in a stream, and it is this deposit which is occasionally found in certain crevices of the cœnœcium.

Food.—A survey of the fine muddy debris found in the alimentary canal, and especially in the intestine, shows that the currents—set up in the surrounding water by the plumes, and conveyed towards the oral aperture by the ciliated surface of the post-oral lamella and the great buccal disk—carry inward, amongst indigestible sponge-spicules and sand-particles, many Diatoms, bodies resembling minute Thalassicollidæ and other Radiolarians, as well as organic particles of various kinds. When large forms like the Ascidians flourish on a diet composed largely of Diatoms, it is evident that this minute type is amply cared for in this respect. The honeycombed condition of the cœnœcium,

¹ *Op. cit.*, pl. xxxviii. fig. 2, *b*, and pl. xl. fig. 11, *e*.

² *Op. cit.*, pl. xli. fig. 13, *h*.