

upper region of the zooid and in the hypostome, of elongate ovoid cells, with an inflated appearance, very transparent, each containing a small nucleus. These cells, as is well seen in transverse sections (Pl. X. fig. 1, G), are packed side by side to form the endodermal lining of the zooid, with their longer axes directed inwards, radially, towards the axis of the zooid, except towards its uppermost region where the direction of these cells is modified by the peculiar rectangular form assumed by the zooid. These elongate cells are closely similar to those occurring in a similar situation in other Hydroids, and there can be little doubt that they are gastric in function. It will be observed that they do not occur in the endoderm of the mouthless dactylozooids. Towards the base of the zooid cavity, these cells become shorter and shorter in length, until in the deepest regions they become mere small globular transparent cells, like those composing the endoderm of the dactylozooids. Towards the base of the zooid they are further overlaid by a layer of the pigmented endoderm cells, which form the endodermal lining of the general cœnosarcal meshwork. The lining of the cœnosarcal canals thus becomes continuous with that of the zooid cavity (Pl. III.).

The calcareous style projecting up into the cavity of the zooid has reflected over it from its base a covering of ectoderm, and over that it is protected within the zooid cavity by a layer of ordinary pigmented endodermal cells (Pl. III. *St*).

The tentacles of the alimentary zooid of *Sporadopora dichotoma* were the only ones amongst those of all the Stylasteridæ which I was able to observe in the fresh condition, and time did not allow of more than a cursory glance at these even. It sufficed, however, to show that the tentacles are, as in the case of *Millepora*, knobbed at their tips (Pl. X. fig. 4), and that their stems display the usual characteristic transverse segmentation of the endoderm.

The knobs of the tentacles are ovoid in form and are densely beset with nematocysts of the smaller variety. The ectodermal layer of the stems of the tentacles contains few or no nematocysts.

*Gonophores*.—Although the soft parts of at least three different colonies of *Sporadopora dichotoma* were examined, these specimens proved all to be male. In all the specimens gonophores were very abundantly present. They occupy the ampullar chambers in the calcareous cœnosteum already described (Pl. II. fig. 1, G). The male gonophores are ovoid bodies with their long axes directed at right angles to the surface of the coral. Sometimes only one such body is present in an ampulla, sometimes two or three. The outer extremities of the gonophores are sometimes drawn out into a short tail-like prolongation (Pl. III. G). The bodies vary considerably in dimensions. Often a gonophore which is fully mature and just ready to discharge its contents at the summit of its ampulla (as seen in Pl. III. G) has beneath it in the deeper part of the same ampulla an immature gonophore, around which latter the ampulla is less dilated.