

GENERAL MORPHOLOGY.

In the present section I propose to give a general outline of the structure of the various genera of Antipatharia, more especially with regard to the form of the zooid and the number and relative development of the mesenteries. On account of the previous want of information on the subject, it will also be interesting to consider generally the bearing of these preliminary observations on the relationship of the Antipatharia to other Zoantharia.

The Antipatharia are all colonial in habit, and the corallum is usually fixed by a dilated base to some foreign object. Some species are parasitic, and it seems probable that in the ancestors of the Antipatharia this feature was more frequent than in living types. The production of a colony from the original oozoid developed from an ovum has not been studied, but it is probable that this takes place by budding. The colonies consist of blastozooids united together by cœnenchyma, the whole of the soft tissues being supported on a central horny axis. The zooids of the Antipathidæ are all constructed on the same plan, but amongst the genera examined there is a gradual specialisation in one direction, corresponding to a physiological division of labour, and finally resulting in dimorphism.

In an ideal case the zooid is more or less rounded in outline, and consists of a short hollow cylinder projecting beyond the surface of the cœnenchyma for no great distance. The peristome usually bears a central conical projection, on the surface of which the mouth is situated. The tentacles are six in number; they are arranged radially in zooids with a rounded outline, but in many cases there is a more or less well-marked arrangement in longitudinal rows, due to elongation of the zooid in one direction. The body-wall is not separated from the peristome by a well-marked "margin," as in typical Actiniaria, and passes imperceptibly into the cœnenchyma. The oral cone often shows on its inner margin a number of crenate folds, which are partially everted portions of the stomodæum, each fold occupying the space between two mesenteries. In other cases the surface is quite smooth. The mouth leads through a short stomodæum into the cœlenteron. The