

apical and secondary branches, which on examination were seen to have secreted a delicate horny sheath around the Gorgonid. The filamentous prolongations of the egg-capsule of Dog-fishes and Skate may be similarly invaded by the soft *Gerardia*, which later extends over the various filaments and secretes a chitinous sheath around them. These specimens, several of which are figured by Lacaze Duthiers, show clearly how a transition may have taken place from the malacodermatous to the sclerobasic type.

The polyps vary considerably in size, but are as well developed at the tips of the branches as at the base. They may be 1 cm. in diameter at the base and may elongate to 2 or 3 cm., while the tentacles reach a similar length in downwardly directed polyps. On the other hand, the whole polyp may so far contract as to form a mammiform tubercle on the sarcosome. The base of each polyp is irregularly polygonal. In various places buds are present, which give rise to new polyps,—these are less frequent on the main trunks, where the polyhedral character of the base is best seen.

The tentacles are twenty-four in number, and are arranged in two alternate rows of twelve each, the members of one row being slightly larger in living specimens. The mouth is oval and is surrounded by two thickened lips, which are an everted portion of the stomodæum. The mesenteries, twenty-four in number, bear reproductive organs as in the Actinaria, and have at the free margin a thickened convoluted ridge occupying one-quarter of its length.

The cœnenchyma is unimportant in bulk, there being only a narrow strip between adjoining polyps. It has, however, a structure which, so far as is known, is peculiar to the family. It is traversed by a series of canals communicating with the polyps at the base of each antimere, and by this means bringing all the blastozooids of a colony into intimate communication with one another. *Cirripathes*, amongst the Antipathidæ, appears to approach this genus most closely in the structure of its cœnenchyma. The colour of the soft parts is greenish yellow, but near the reproductive season the polyps become brick-red.

The spicules, &c., sometimes contained in the cœnenchyma are those of Pennatulidæ, Corals, Gorgonidæ, Sponges, Foraminifera, &c., all of which become agglutinated to the viscous ectoderm, but none are peculiar to it.

THE HOMOLOGIES OF THE MESENTERIES.

In the foregoing account of the general structure of the zooids of the various genera of Antipatharia I have purposely avoided any reference to a possible arrangement of the mesenteries in pairs, and the term "interseptal" has been applied to the space between any two mesenteries, and not in its technical and restricted sense as applied to Zoantharia generally. I have followed this course because the usual paired arrangement is not marked in any of the species examined, unless it be in the mesenteries situated at each