

The thick lines indicate those mesenteries which are well developed in the respective genera, the thin lines those which are not so important. It will be seen that in *Madrepora durvillei* (fig. 15) and *Seriatopora* (fig. 17) six mesenteries are well developed, but that according to Fowler the arrangement in the one genus is precisely the reverse of that in the other. In *Madrepora* numbers 2, 4, 6, 7, 9, and 11 represent the strongly developed mesenteries, and of these numbers 4 and 9 extend lower down into the cœlenteron than the other four, and are the only ones which bear reproductive organs. In *Seriatopora*, numbers 3 and 10 are the longest. The reproductive organs were not observed in this genus, but in *Pocillopora*, which has the same arrangement without such a distinct division into three series of different lengths, apparently all the mesenteries may bear reproductive organs. In *Leiopathes* (fig. 16) I have not ascertained which is the "axial" and which the "abaxial" extremity of the stomodæum, possibly the reverse of the arrangement shown, but for my present purposes it is not important. Here the

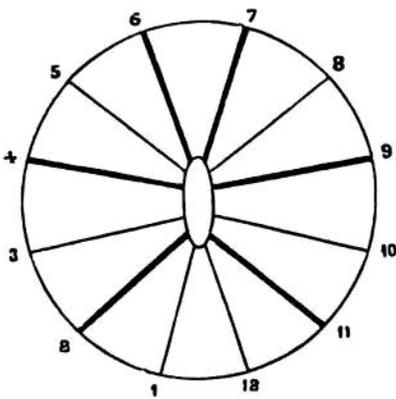


Fig. 15.

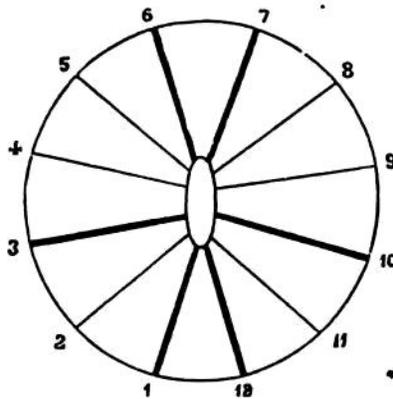


Fig. 16.

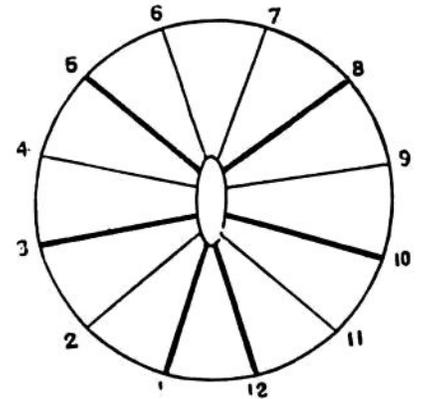


Fig. 17.

FIG. 15.—Diagram of the arrangement of mesenteries in *Madrepora durvillei*. Nos. 6 and 7 are the axial, Nos. 1 and 12 the abaxial directives.

FIG. 16.—Diagram of the arrangement of mesenteries in *Leiopathes glaberrima*. The thicker lines indicate the primary mesenteries.

FIG. 17.—Diagram of the arrangement of mesenteries in *Seriatopora*. Nos. 6 and 7 are the axial, Nos. 1 and 12 the abaxial directives.

mesenteries numbered 1, 6, 7, 12 and 3, 10 (or 4, 9) are the primary ones. Of these 3 and 10, as in *Seriatopora* (or 4 and 9 (?) as in *Madrepora*), are the longest, and are the only ones which bear reproductive organs. The four mesenteries numbered 3, 4, 9, 10 are precisely those which show an inter-relationship. One pair remains as the transverse mesenteries, the others are the earliest to disappear. A very short way down the oral cone the four have become reduced to two. Thus if we suppose a combination of figures 15 and 17, accompanied by a replacement of the two pairs of mesenteries bordering the transverse axis by one pair situated in the transverse axis, we get precisely the arrangement of primary mesenteries in the Antipathidæ. This does not necessarily imply a close phylogenetic relation, but is interesting as showing a similar behaviour of mesenteries 3, 4, 9, and 10 in Antipathidæ and certain Madreporaria.