

further subdivided by the interposition of another pair of mesenteries, giving six in all. It therefore appears as if, within the family, three pairs represent the more primitive arrangement, and that those genera possessing five pairs, as well as *Leiopathes* with six, have been elaborated from it. This view appears also to be supported by our knowledge of the ontogeny of the Hexactiniæ. Neither *Sagartia dohrnii* nor *Savaglia lamarcki* appear to offer any assistance in a solution of the question. The former has been shown by Andres to be a true Actinian. The fact that *Sagartia dohrnii* secretes a horny basal membrane, which may become tubular, appears to have no phylogenetic value. Many true Actinaria have the same power. *Savaglia* has nothing in common with Antipathidæ beyond the possession of a branched lamellate sclerenchyma, which, however, is always primarily parasitic, as in Amphianthidæ, but which may extend beyond the limits of the foreign basis. The zooid, so far as its structure is known, belongs to the true Actinian type, and has no similarity whatever to the zooid of Antipathidæ. The only essential point on which it differs from colonial Actinaria appears to consist in the fact that the cœnenchyma possesses a series of interzooidal canals, one of which opens into the base of each interseptal chamber. It appears probable that some such communications must also exist between the zooids of certain Zoanthidæ (e.g., *Epizoanthus stellaris*, R. Hertwig).

The spinose horny axis, which, excluding *Savaglia*, is peculiar to the Antipatharia, is related through *Dendrobrachia* to that of certain Gorgonacea. In certain portions of the axis of *Dendrobrachia* the sclerenchyma is rugose, with a spinose margin. In *Acanthoisis*, Wright and Studer, the axis consists of short calcareous nodes and more elongate horny internodes. The internodes are rugose with a dentate margin, giving an appearance very similar to the axis of *Dendrobrachia*. In *Gorgonella*, Val., the axis is horny and rugose, but without the dentate margin. Thus whilst the spinose sclerenchyma of Antipathidæ appears to be linked to that of Actinaria through *Savaglia*, it on the other hand is linked to that of certain Gorgonacea through *Dendrobrachia*. The sclerenchyma of *Leiopathes glaberrima* too, the stem and main branches of which are always smooth and glossy, appears intermediate between that of normal Antipathidæ on the one hand and *Savaglia* on the other. On this account it appears probable that a truer knowledge of the systematic position of the Antipathidæ is more likely to be obtained by a study of the zooids than by a study of the sclerenchyma.

Finally, a few points in which the Antipatharia resemble certain other Zoantharia may be indicated; some of them have been already mentioned.

A general resemblance between *Savaglia* and Zoanthidæ is most marked, but it is as yet uncertain whether their mesenteries are arranged on the same plan. The arrangement in Zoanthidæ is most peculiar, and a renewed study of the arrangement in *Savaglia* is very desirable.

The Amphianthidæ, as R. Hertwig has already pointed out, bear a general resemblance