

whereas the number of tentacles and mesenteries is constant in the former order, it is most variable in the latter. In this respect the Antipatharia agree with other Zoantharia, at least to this extent that there is a variation in the number of mesenteries present in the various species already examined. This distinction has necessarily led to a difference in the characters selected as being of generic value in the two great sections of the Anthozoa. I am thus inclined to think that the method adopted by R. Hertwig in the classification of the Actiniaria will be likely to yield the most reliable results if applied to the Antipatharia also. The characters available for a classification of the Antipatharia are more limited than might be at first supposed. The sclerenchyma is apparently always chitinous, and is more or less spinose in all the species described, excepting *Savaglia lamarcki*, which constitutes the only known species of the Savagliidæ. The mode of branching has been generally admitted to give no characters of generic value, indeed, so far as can be made out at present, this feature is sometimes not even of specific value. For instance, in *Antipathes picea* and *Antipathes tanacetum*, described by Pourtalès, the two forms are said to be precisely similar in the mode of branching, the species being considered distinct on account of differences in the spines. The value of the mode of branching for generic purposes has already been partly discussed when considering the value of the genera proposed by Milne-Edwards. More need not be added at present. Further investigation may, however, show that some of the genera here defined (e.g., *Aphanipathes*) may bear subdivision, and that in this case distinct types of branching may yield characters of value. With regard to the form, size, and mode of distribution of the spines, it may be stated that three distinct types, viz., cylindrical, triangular, and knobbed, have been observed; their value as an aid to classification does not at present seem clear. Undoubtedly, as Pourtalès has already pointed out, the form of the polyp frequently bears a definite relation to the form of the spines, but this is not invariably the case, and the three types are closely linked together by intermediate forms. The cylindrical type may become compressed and shortened, whilst in the other direction *Antipathes filix*, Pourtalès, forms a link between those forms having simple cylindrical spines and others, such as *Aphanipathes pedata* and *Aphanipathes cancellata*, in which the knobbed feature is most marked. We have thus to fall back on the structure of the zooids and cœnenchyma to supply the chief characters, and these are precisely the features which have hitherto received the least attention.

The characters to be considered of ordinal value depend to a great extent on whether the Savagliidæ are to be included in the Antipatharia. Undoubtedly *Savaglia lamarcki* has little in common with the Antipathidæ beyond the possession of a continuous and branched horny sclerenchyma and a non-spiculate cœnenchyma. Its zooid has the typical Actinian structure, and the system of canals in the cœnenchyma are, so far as is known at present, without parallel in the Antipathidæ. A horny sclerenchyma, such as that of *Savaglia*, is by no means confined to the Antipatharia. The colonial