

CLASSIFICATION.

It will be well to consider briefly the value of the present collection for a rearrangement of the Antipatharia. In the past, owing to the lack of information concerning the organisation of the zooids, it has only been possible to make use of skeletal characters, the mode of branching, and the size, shape, and arrangement of the spines in the definition of both species and genera. Even Pourtalès, who has figured the zooids of several of the West Indian forms, and recognised two or three distinct types, considered it premature to attempt any rearrangement of the group based on the information at hand. I consider, however, that the information brought forward in the present Report, although, undoubtedly, not sufficient for a complete reorganisation of the group, throws sufficient light on the subject to indicate at any rate the lines on which future classification must be based, and a partial revision has been attempted in consequence. This seems the more justifiable on account of the relatively large number of species of which I have been enabled to make a microscopical examination of the zooids. Including the species now described as new, and supposing the synonymy here adopted to be correct, the list of species referable at present to the Antipatharia may be fixed at 98, and of many of these we have at present only the most meagre information, so that in many cases it is impossible to decide whether the list might not be still further reduced. Previous authors have only given us information concerning the structure of the zooids in three species, viz., *Savaglia lamarcki*, *Antipathella subpinnata*, and *Parantipathes larix*. G. v. Koch has more recently given us a more detailed account of the structure of *Parantipathes larix*, including a more accurate description of the number and position of the mesenteries. The other two species have not been examined by subsequent investigators, and Lacaze Duthiers' account of *Antipathella subpinnata* is very incomplete. Of the 97 species referred to I have been enabled to study the structure of the zooids of 22, viz., 16 Challenger species, 4 from the Mediterranean (including *Parantipathes larix* and *Antipathella subpinnata*), and 2 in the British Museum collection. An examination of these species, the detailed results of which I hope to publish in due course, has led me to the conclusion that a proper arrangement of the Antipatharia can only be completed when we possess accurate information concerning the morphology of all the species. A marked contrast between the Alcyonaria and the Zoantharia is found in the fact that,