

THE
VOYAGE OF H.M.S. CHALLENGER.

ZOOLOGY.

REPORT on the ACTINIARIA dredged by H.M.S. Challenger during the years 1873-1876. By Prof. RICHARD HERTWIG.

INTRODUCTION.

IN investigating the Anthozoa the majority of earlier naturalists were content to give the most exhaustive description possible of the parts which are externally visible in the living animal, and of the skeleton where such a structure existed; on the other hand, they only went slightly into more exact anatomical details, as the observation of these presented great difficulties. The majority of the Anthozoa are not sufficiently transparent to allow of the recognition of the form and arrangement of the organs in the living animal, whilst after death they are so contracted that all the parts become misplaced in many ways and pressed one against the other, and can only be demonstrated, with great care, by means of knives and scissors. Up to the present time the systematic survey and characters of the orders, families, and genera are founded upon external characteristics which are of less morphological importance.

In this way many errors arose, which have only become intelligible from the work of the last decades. Following the steps of Agassiz (*Contrib. to the Nat. Hist. of the United States*, vol. iii.), Moseley (*Phil. Trans.*, vol. clxvi. pt. 1, p. 91, 1876; vol. clxviii. pt. 2, p. 425, 1878) has shown in the most convincing fashion that many hydroid polyps which form skeletons have been long placed among the reef-forming corals, and that, moreover, in consequence of the skeletal formation alone having been taken into consideration, many Octocorallia have been disconnected from their natural systematic place, and united to forms entirely remote. It cannot by any means be asserted that