

GENERAL INTRODUCTION TO THE ZOOLOGICAL SERIES OF REPORTS.

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FOR a general account of the objects of the exploring voyage of H.M.S. CHALLENGER, and the means by which these objects were carried out, I must refer to the first volume of this Report; the present introduction is to be understood to apply to the series of zoological volumes only. As, however, the CHALLENGER work in this department was of a very novel and special kind, it may be right to explain somewhat in detail the method and appliances used in procuring and storing the collections; and the general system under which these have since been made available for scientific investigation, and the results prepared for publication.

It was a primary object of the Challenger Expedition and one of our special instructions, to determine, as far as lay in our power, the biological conditions of the great ocean-basins. During the short cruise of H.M.S. LIGHTNING in the year 1868, Dr Carpenter and I had been able to place it beyond doubt that the use of the ordinary dredge might be carried with comparative ease to a depth of 600 fathoms, and that a numerous and varied fauna existed at that depth; and in the summer of the year 1869, during the second cruise of H.M.S. PORCUPINE, I found no special difficulty in sounding, dredging, and determining the temperature of the water at a depth of 2435 fathoms. Even at this great depth, under a pressure of two and a half tons on the square inch, with a temperature close on the freezing point, and probably in utter darkness, animal life was still abundant, and all the principal types of marine invertebrata were represented.

We were led to believe from previous observations that the average depth of the ocean was not much greater than that of our deepest dredgings, and we were thus forced to the conclusion that there was actually no depth limit to animal life, that the enormous area of the great ocean-basin—extending to over a hundred millions of square miles—had its own special fauna, and that the nature and distribution of that fauna might be brought with comparative ease within the limits of human knowledge.