

indispensable to the completion of the work. The reef is formed mainly by the accumulation of solid materials from a variety of animals and a few plants. The relations of these animals and plants to one another while alive, in and upon the reef, ought to be studied more fully than has been the case heretofore, in order to determine with certainty the share they have in the formation of these immense submarine walls so dangerous to navigation. The surveys, as they have been made thus far, furnish only the necessary information concerning the present form and extent of the reef. But we know that it is constantly changing, increasing, enlarging, spreading, rising in such a way and at such a rate, that the surveys of one century become insufficient for the next. A knowledge of these changes can only be obtained by a naturalist, familiar with the structure and mode of growth of the animals. The survey I made about fifteen years ago, at the request of your lamented predecessor, could only be considered as a reconnaissance, in view of the extent and importance of the work. I would, therefore, recommend you to organize a party specially detailed to carry on these investigations in connection with, and by the side of,