Island Life. By ALFRED RUSSEL WALLACE. Macmillan and Co.

The title of this book will scarcely convey to the popular mind an adequate idea of its varied and comprehensive character; for there is no important question within the domain of the naturalist which it does not touch. Indeed, one is struck with nothing more than the versatility of the author, and the fresh light which he is able to throw upon every part of his many-sided subject. At the same time one is conscious here and there of an inequality of treatment; and, generally speaking, we may say at the outset, that the second part is that which will probably be regarded as the more satisfactory. Here the subject treated is that of 'Insular Faunas and Floras,' with which Mr. Wallace can claim a more wide and profound acquaintance than almost any other living writer. Nevertheless, we feel instinctively drawn rather to the first part, because in it, although the author is on less firm ground, the questions discussed are so very interesting, not only to the naturalist, but to all students of science. Two points, especially, are handled with great ability, the 'Permanence of Continents,' and the 'Causes of Glacial Epochs.' Mr. Wallace has in several previous works pronounced strongly in favour of permanence, and here he may be said to have summed up all the evidence in order to a decisive re-statement of his opinions. The old, and still generally received, theory, that our present continents and our

present ocean have changed places, seems to him untenable on various grounds. For instance, the components of the stratified rocks which are in the heart of our continents, sandstone, shales, &c., are, the author believes, such as 'must have been deposited within a comparatively short distance of a sea-shore.' Again, there is the fact of the general occurrence of fossil remains of birds, insects, and mammals, in parts of the earth which, according to the received theory, must have been formerly in the depths of the sea. These and other considerations in favour of permanence are pressed home with much skill and force. We are bound to say, however, that there are still awkward objections to his theory which are constantly presenting themselves. Even while we write, we come across a reference in the 'Geological Magazine' to the fact that 'Professor Alexander Agassiz has described the dredging up from over one thousand fathoms, fifteen miles from land, in the Gulf of Mexico, of masses of leaves, pieces of bamboo, &c., which he says would, if found fossil in rocks, be taken by geologists to indicate a shallow estuary surrounded by forests.' (Paper by Mr. M. Reade, 'Geological Magazine' for September.) Beyond and above such objection, there is also the wider one drawn from the continuity of life as seen in similar forms existing on either side of the sea.

Mr. Wallace devotes a large section of his book to the consideration of the Causes of Glacial Epochs. He gives a general assent to the theory of Dr. Croll, upon which, however, he makes several modifications; and here we note particularly the significant distinction between the influence upon climate of water, when in the form of rain, and its greater influence when in the form of snow, rain having a comparatively small modifying power. It would be impossible for us to state at length the views of Mr. Wallace upon this subject; enough to say that he finds in geographical causes the primary secret of climatic changes, while allowing also for modifications arising from astronomical causes. A brief chapter is devoted to the consideration of 'the earth's age,' and here the author renders a signal service by showing the instability of the ground upon which the most extended theories are based. He shows the readiness with which present conditions of change, climatic and other, have been founded upon, whereas there is abundant reason for thinking that, in former ages, the processes of growth and decomposition were carried out much more speedily than now.

To the second portion we have incidentally referred. It is full of interest, apart even from its bearing on the theories of which we have spoken, because of the large body of important facts which it sets forth. The part which will demand most careful study is that which deals with the New Zealand Flora, and its relations to that of Australia. Mr. Wallace believes that at a former period Eastern and Western Australia were separate islands, and upon this view he bases some important conclusions with reference to the curious anomalies which are presented by a comparison of the forms of life, animal and vegetable, in New Zealand and Australia.

We can but further refer to the charming style in which the book is written: it is not indeed often that science is made so attractive as it is in these pages. The taste displayed in the binding of the volume must also be mentioned with exceptional commendation.