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‘Island Life.’[1]

About four years ago we noticed at some length Mr. Wallace’s great work on the “Geographical Distribution of Animals;” the present volume, the author tells us, may be considered as to some extent a popular supplement to and completion of that work. Its main purpose is to show how the existing distribution of life on the islands of the globe has come about. But in order to be able to do this with scientific precision, Mr. Wallace has to go very far back indeed in the history of our earth, and to take a survey of the geological fluctuations of the entire land surface and the distribution of life thereon. He discusses some of the greatest problems that have recently engaged our men of science in cosmical physics, geology, and biology, and endeavours to solve some of the most burning scientific questions of our day. In several instances he boldly expresses his dissent from some of the most popularly accepted scientific theories, and even from scientific inquirers who have devoted their lives to special subjects. As an instance, we may state that he repudiates the theory that at one period or another in geological time all the land now under the sea must have been dry, and all the existing continental areas formed the ocean bed. He maintains that from the beginning of geological time all the great land masses of the globe must have been grouped pretty much as they are now, though undoubtedly within these general limits they must have been subjected to very great changes, and repeatedly broken up into archipelagos and inland seas and re-united, to such an extent that at different times all the land of our continents must have been under water, mostly shallow, for longer or shorter periods. This opinion he shows is essentially supported by such authorities as Mr. Darwin and Professor Geikie, and is absolutely necessary to account for the present distribution of life over the globe. Mr. Wallace discusses in an admirably clear and able manner the questions of geological climate and time; and while he follows the lines so well worked out by Dr. Croll, he differs in some important points from the conclusions of the latter. The subject of glacial epochs comes in, or course, for extended treatment, and here also Mr. Wallace ventures to maintain that opinions generally accepted require modification. As to the age of the earth, or rather the length of time that has elapsed since our sedimentary rocks began to be laid down, Mr. Wallace endeavours to reconcile the apparently irreconcilable demands of the physicist on one side and the biologist on the other—one demanding at least 500 millions of years and the other only conceding from 100 millions to 400 millions as the utmost limit. Mr. Wallace tries to show that as in the earlier periods of life on the earth its development must have been much more rapid than in recent periods, a mere matter of 200 millions of years is all that is really required for the developmental theories of the biologist. This, however, goes right in the face of the latest geological opinion as expressed in Professor Ramsay’s address at the British Association. The discussion of these and many other important points of the widest scientific bearing leads up to the subject of the second half of the volume, the nature and origin of the existing life on the principal islands of the globe. The remarkable phenomena of the distribution of animal or plant life in the globe can only be accounted for by tracing far back the changes that have taken place in the land-surfaces; and an explanation of the distribution of island-life has only been rendered possible since our deep-sea exploring expeditions gave collected accurate *data* as to the varying depths of the ocean. These *data* enable us to surmise what was the nature of the former connexion of continental islands with continents,

and to explain the resemblances and differences between the fauna and flora of different continental islands. These islands are often as varied in their geological formation as the neighbouring continents, while true oceanic islands, generally far from continents, are either volcanic or coralline, have no indigenous mammals or amphibia, but abundance of birds and insects, showing that they could never have belonged to any great continental area. Mr. Wallace does not believe in Mr. Sclater's submerged continent "Lemuria," the peculiar phenomena in Madagascar and neighbouring islands thus accounted for being accounted for by him through the changes in the existing continental areas. Such are only a few of the great problems discussed in this most instructive volume—a volume that ought to interest every thoughtful reader. While its theories are likely to meet with keen criticism from Mr. Wallace's fellow-scientists, his volume ought, more than any other we know of, to spread among the intelligent reading public a knowledge of and interest in some of the most momentous scientific problems of our time.

[1]"Island Life, or the Phenomena and Causes of Insular Faunas and Floras, including a revision and attempted solution of the problem of Geological Climates." By Alfred Russel Wallace. London: Macmillan and Co. 1880.

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