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### ‘Wallace’s Work on “Island Life”—An Apostle of Evolution.’

Wallace’s “Island Life.”

The cause of evolution can count no more zealous and able apostle than Mr. Alfred Russel Wallace, whose latest and most important work, “Island Life; or, the phenomena and causes of insular faunas and floras, including a revision and attempted solution of the problem of geological climates” now lies before us. (Harper & Brothers, publishers.) While there is nothing elementary in this work there is at the same time nothing that is out of the reach of the intelligent reader, for it is written to attract the attention of the layman interested in the physical and biological history of the world, as well the professed scientist. To both, indeed, it opens up the result of a lifetime of minute research and wide observation co-ordinated with wonderful acumen by pure, logical methods and presented with consummate clearness and skill. Mr. Wallace wastes no words on preliminary argument as to the origin of species, natural selection, or what is generally included in the doctrine of evolution. He assumes all that as understood, and proceeds with his work. The usefulness of the mass of facts concerning island life which he marshals depends upon the clear comprehension of a set of causes which involve for their demonstration a consideration of the early condition of the entire globe. Thus, before Mr. Wallace can tell us about the present marsupials of Australia and America, the wingless birds of New Zealand, the bullfinch of the Azores or the fresh water fish of England, he finds it necessary to consider first the great question of the permanence of continents and oceans. It is his opinion, based on knowledge which we need not cite, that three great continents running down from the North Pole have existed from exceedingly remote times. It is true that almost every portion of these continents has been at one time or another submerged, but he holds that even when partially submerged these great continental bosses have existed entirely distinct from the great separating oceans—Atlantic, Pacific and Indian. Islands are, roughly, of two kinds—continental, or formed near continents with which they were once connected, such as Great Britain, Madagascar and so on, or oceanic, as the Azores, Bermuda, St. Helena and the Sandwich Islands. The continental islands exhibit in their faunas and floras the same general characteristics as those of the continents they formerly joined, but modified by environment. Their age as islands is determined by their animals and plants as well as by their geology. The islands wholly of oceanic origin are also dependent on the nearest continents for their animal and vegetable life, but since there never was a bridge of land for plants to spread over or quadrupeds to walk over, insect and vegetable life must come in seeds and eggs and spores on the winds or the waves, while birds are blown thither in storms. In special cases like Australia and New Zealand the question of antiquity becomes of the first moment to account for the animals and birds there found, and here Mr. Wallace’s theories are especially bold and striking. He divides the globe into six zoological regions, namely—the Palæarctic region (including all Europe, the greater part of Asia and a strip of Northern Africa), the Nearctic (including North America), the Neotropic (including South America), the Ethiopian or African, the Oriental (including Southeastern Asia) and the Australian region. Over all these regions certain “dispersals” took place, which were arrested in some instances by glaciation, while the melting of the glaciers once more gave room for the spread of new animal and vegetable forms. The question of glacial epochs becomes therefore of the first moment and leads to the consideration of astronomical and geological influences on climate. It is the opinion of Mr. Wallace that the question of orbital eccentricity in the production of hot and cold climates must be considered closely in connection with the elevation of the earth’s crust to account for climatic conditions. Thus high land at the South Pole and an ocean at the North Pole account for the mildness of our winter compared with that of the Southern Hemisphere in similar latitudes. This portion of the work for its masterly reasoning and clear presentation of the complex

factors at work in the production of the phenomena of great ice sheets, lowering of oceans, shifting of ocean levels and consequent appearance of land surfaces before submerged, all bearing upon the question of the dispersal, modification or extinction of species, is particularly brilliant. We cannot follow Mr. Wallace step by step through his fascinating book, but we can commend it without stint, assured that whoever commits himself to its perusal will find that wherever he is called on to surrender his convictions to its theories the author has backed himself with apparently unassailable evidence.

*The Alfred Russel Wallace Page*, Charles H. Smith, 2021.