INTRODUCTION

> . . . Truth is born into this world only with pangs and tribulations, and every fresh truth is received unwillingly. To expect the world to receive a new truth, or even an old truth, without challenging it, is to look for one of those miracles which do not occur.
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> ('Alfred Russel Wallace,'
> an interview published in 1913: ref 753, p. 622)

ALFRED RUSSEL WALLACE (born 8 January 1823, died 7 November 1913), English evolutionist–naturalist, geographer, anthropologist, and social critic and theorist, was one of the Victorian Era's most colourful figures. Though still best known for his connection with Charles Darwin as 'the other man' in the development of the theory of natural selection, his work stands on its own, and he was, in any case, a person cut from quite a different cloth. Shy by nature and, in his own assessment, 'lazy', he none the less poured out ideas over a span of time extending into eight decades, during which period he managed some 20,000 miles of 'applied' travels, and writings totalling well over 10,000 pages in print. Beyond his independent recognition of the principle of natural selection, he was an important contributor to theory in several different fields, and ranks as both the 'father' of modern biogeography and history's pre-eminent tropical naturalist.

The obvious aside, however, Wallace was such a complex figure that no consensus has been reached regarding the overall level of significance of his work. Certainly, he presents a study in contrasts. A self-described 'scientific sceptic', he none the less maintained a belief in spiritualism for most of his career. Though of aggressively critical disposition professionally, he won the highest respect of allies and adversaries alike by keeping up an enviable standard of logical argumentation and fair representation of opposing viewpoints. As a public figure he eventually achieved the status of 'The Grand Old Man of Science'—despite never considering himself a 'scientist'. A stalwart defender of most of Darwin's views, on occasion he just as strongly promoted dissenting arguments. A seemingly bottomless well of new ideas, he did little to ensure that future generations would connect his name with them. Indeed, he continually risked his scientific reputation by supporting—even leading—various radical social movements. Still, and despite his modest social circumstances, the Crown saw fit to award him a civil pension in 1881, and the Order of Merit in 1908. G. K. Chesterton perhaps summed things up best when he stated his reason for considering Wallace one of the two most important figures of the nineteenth century: he (Chesterton) knew of no other

individual who could be considered a leader of both a major revolution in thought (materialistic evolutionary theory) and its own counter-revolution (anti-materialistic social theory and psychical studies)!

It is thus not surprising that Wallace has remained a poorly understood figure. Few individuals have written creatively on so many different subjects, over such a long period of time, from such a unique perspective, and in so consistently self-effacing a manner.

Wallace's early years were relatively unremarkable. His parents were middle-class but not well off, and young Alfred was forced to leave school at the age of fourteen to support himself. In 1838 he was apprenticed to his older brother William, a successful surveyor. He liked the outdoor work, leaving in 1844 to become a private school instructor in Leicester only when a slowdown in jobs occurred. During this period of his early adulthood he developed an interest in natural history collecting. This interest was strongly reinforced when at Leicester he met Henry Walter Bates (later of 'Batesian mimicry' fame), already a full-fledged entomologist, though still a teenager. The Wallace–Bates friendship eventually yielded the idea of organizing a collecting expedition to South America, and the two young men left for Pará (now Belém), Brasil, in 1848.

Wallace remained in South America until 1852 (Bates stayed until 1859, amassing a magnificent collection of insects that would absorb his attention for a good many years thereafter). Wallace had been forwarding his collections to his sales agent in England throughout his stay, but through some misunderstanding a large portion of the later shipments was delayed at Pará. He was forced to arrange passage back to England for both himself and what remained. Unfortunately for Wallace, in the middle of the Atlantic his ship caught fire and sank, and he was able to save only the smallest portion of his possessions. He and the others on board were in fact lucky to escape with their lives, being rescued at sea by a passing vessel after spending ten days in a pair of badly leaking lifeboats. (The drama did not end there, either, as their new carrier also proved barely seaworthy, itself very nearly succumbing to a series of storms encountered over the remainder of the voyage.)

In all, it took Wallace some eighty days to make it back to England. There followed for him a period of varied activities: rest, writing, and working visits to museums. He decided to continue with his collecting efforts, choosing what is now known as Indonesia (and then, as the 'Malay Archipelago') as his next centre of operations. Securing a grant from the Royal Geographical Society to cover his passage, he left for Singapore in March 1854.

Wallace spent eight full years in the East, returning to London in April 1862. By that time, he was something of a celebrity in scientific circles. He had been a highly productive collector—an incredible 126,000 specimens in total—and had secured a considerable reputation as a writer on both theoretical and systematic subjects. And there was, of course, that letter to Darwin . . .

In early 1858, Wallace's long-standing preoccupation with the subject of evolution led him to recognize a principle of great general application: 'natural selection'. The underlying concept was the 'survival of the fittest': that, as a rule, better-adapted individuals produce more surviving offspring, thus differentially passing their particular characteristics on to their progeny. Wallace quickly worked up an essay capturing the essence of this notion and sent it off to Darwin (who he knew through previous exchanges of letters was generally interested in the subject) 'for comment' and possible forwarding to Sir Charles Lyell, the geologist, who at that time was England's foremost naturalist.

The ensuing chain of events has been one of the most studied in the history of science. To cut a very long story short, Darwin was taken aback by what he read, as it neatly outlined the essence of the concept he had been painstakingly working out for some twenty years. A priority conflict seemed imminent. Darwin appealed to Lyell and another prominent naturalist, the botanist Joseph Hooker, to help him decide what to do. Lyell and Hooker arranged to have Wallace's draft and two informal but representative synopses of Darwin's ideas on the same subject read at the next meeting of the Linnean Society, and this took place (without obtaining Wallace's permission first) on 1 July 1858. Darwin then began working in earnest to complete an 'abstract' of his views on natural selection; fifteen months later this was published as *On the origin of species*.

For several years after his second return to England most of Wallace's time was taken up in the study of his collections. By 1869, however, he had been able to complete *The Malay Archipelago*, and, one year later, to compile *Contributions to the theory of natural selection*. The first is among the most successful scientific travel books ever written. It went through fifteen printings during Wallace's lifetime alone, and was translated into virtually every major language. The second was a collection of essays on the subject with which his name had become most associated.

During the 1870s Wallace focused his attention on biogeography, the study of the geographical and ecological distribution of living things. His most important writings on this subject were *The geographical distribution of animals* (1876), *Tropical nature and other essays* (1878), and *Island life* (1880). Between 1880 and 1895, he divided his attention between the study of various natural science matters and several social causes, especially land nationalization. After 1895, his interests further diversified, embracing social evolution, cosmology, new developments in evolutionary theory, and political criticism. His most important post–1880 books were *Land nationalisation* (1882), *Darwinism* (1889), *The wonderful century* (1898), *Man's place in the universe* (1903), *My life*, his autobiography (1905), and *The world of life* (1910). His last two books, *Social environment and moral progress* and *The revolt of democracy*, appeared in 1913, the year of his death (two months short of the age of ninety-one—and, it may be noted, even at that point he had begun arrangements for the production of yet two further monographic studies!).

The preceding historical sketch gives but little feeling for the forces that were operating in Wallace's life after 1862. The interested reader should consult the secondary sources listed at the end of this work for details; but we should take note in passing of several important connections. To begin with, in 1865 Wallace became a spiritualist (see Section Two). The teachings of this belief increasingly flavoured his writings after that date, astonishing many (including Darwin) who had come to regard him as one of the period's most consistently insightful thinkers on natural science subjects. Then there were his involvements in various social reform movements (see Section Three). In 1881 he was instrumental in founding the Land Nationalisation Society, an organization dedicated to the abolishment of private land holdings. He became its first President, continuing in that role until his death. By 1890 he was a proclaimed socialist. Over the years 1880 to 1905 he took an active role in the anti-vaccination movement (see Section Four). Many of his social criticism essays—there were dozens in all—were published in the leading review journals of the day, and an unknown number of his letters on related subjects appeared in various newspapers. Many of his contemporaries considered him a crank.

Wallace's life after his return to England in 1862 was complicated by his inability to secure full-time employment. Money became a constant worry, but he found it possible to earn a decent living through his writings, lecturing opportunities, and several additional incidental sources of income. Though initially situated in London, he soon tired of urban life, and after marrying in 1866 began a series of moves that led him ever further into the English countryside. There he and his wife (née Annie Mitten, the daughter of botanist William Mitten, a friend of Wallace's) raised two children (a third died at age four). The major adventure of his post-collecting period was a ten-month lecture tour to the United States and Canada in 1886–7, during which time he sketched out the material that would form the core of his book *Darwinism*. This work is arguably the definitive late-nineteenth-century exposition of the subject.

It is clear from his own writings and from those who knew him personally that Wallace had few, if any, regrets over the way his life turned out. There is little reason why he should have had. His personal and professional conduct in all matters of which we have knowledge seems to have been above reproach, and he surely accomplished all—and then some—of his life's objectives. His is, simply put, an inspiring story of a life well-lived.

But history has not been altogether kind to him. In his later years he was already considered something of a relic of the past; he became, in fact, the last surviving member of the mid-nineteenth-century circle of 'Darwinian' naturalists. Science was moving in new directions, and, despite Wallace's continuing efforts, 'natural selection' in particular was experiencing a decided downswing in popularity. After his death, his name passed rapidly into relative obscurity.

Interest was re-kindled by the 1958 centenary celebrations of the first public presentation of the natural selection concept. Since that time a considerable literature on Wallace's life and writings has accumulated, and a picture of the man and his accomplishments has slowly been emerging.

If the Wallace–Darwin association certainly worked to Darwin's advantage, it is less clear what its implications were for Wallace. What would the outcome have been had he simply sent the first natural selection essay in for publication, rather than to Darwin? So many 'ifs' confound the question that speculation on the matter, though fascinating, produces little of substance. I am not so certain that as much would have changed as some observers seem to think. Of the two, Darwin was without doubt the more meticulous worker, and the evidence he amassed was clearly crucial to the success of the cause. He was, moreover, in a more advantageous social and financial position—and geographic position, initially—to advance it.

More importantly, natural selection and its many extensions were a dominating theme in Darwin's theoretical explorations (though it must be remembered he was responsible for a large and important body of descriptive biology and geology studies as well). Contrary to what is commonly thought, this was not true in Wallace's case. His 'discovery' of natural selection was something of an accident. Right up to the point of his recognition of the principle he was unaware of what was coming; he had been thinking along quite different lines in his musings over the evolutionary process (see Sections Two and Six). The new concept represented an interim stage in his thinking. While consistent with his earlier positions, and resolving some (important) problems inherent in them, it did not in any sense provide him with the 'complete' evolution model he was looking for.

'Natural selection' thus represents a red herring when it comes to trying to understand Wallace's world-view. Although he was not slow to recognize the significance of the principle and to develop it in as many directions as he could (and indeed there were many that he did), he never considered natural selection more than a logical argument demanded by the relationship between adaptation and species divergence. While study of this particular relationship has come to dominate evolutionary biology, Wallace himself was committed to working out a model of natural organization that extended well beyond it. By about 1865 he felt that certain questions left unanswered by natural selection's relation to the more general model had been solved; on the basis of the resulting synthesis he was able to advance thoughts on a very wide range of subjects.

In the first sentence in this Introduction I described Wallace as 'evolutionist–naturalist, geographer, anthropologist, *and* social critic and theorist.' The critical word in this description is 'and'. Whereas many workers have made important contributions to several distinct fields of knowledge, the vast majority, at least, have been unable to refer their various lines of argument to defendable universal principles. Wallace's post–1862 (the date of his return to

England, it will be remembered) studies were, to his distinction, logical applications of a single, comprehensive, model of natural/social organization and causation. But Wallace's efforts to argue the specific from the general have often conflicted with conventional thinking in the many areas of his attention, leading to problems of interpretation. As part of the difficulty may be traced to the interdisciplinary perspective demanded when one tries to wear four 'hats' (i.e., those mentioned above) at once, a short summary of the connections involved in Wallace's case is useful here by way of introduction to the present collection.

There is, of course, little difficulty in styling Wallace an evolutionist and a naturalist. He was one of history's most productive collector-explorers, investigating not only the animals and plants of the lands he visited, but their people, geology, and physical geography as well. Underlying these activities was a desire to learn how evolution took place—at all levels of organization. The key integrating element in his approach to these subjects was geography: especially biogeography, physical geography, economic geography, and ethnography. Many of his evolutionary studies relied on explicitly spatial or regional models. This is even true of the bulk of his social commentary, which emphasized goal-oriented planning (and, in effect, conservation of natural resources); that is, the analysis of imperfections in the present social order, and how to achieve appropriate reforms. To Wallace, in fact, *social change was a manifestation of evolution no less than was the biological process sustained by natural selection.*

The geographical emphasis in his work notwithstanding, Wallace is only rarely thought of as a geographer, even by geographers. This is understandable, given that: (1) he was not a member of the geographical academic–intellectual establishment, and (2) geography, despite being in many respects the oldest science, has an intellectual core only rarely appreciated by workers outside its own ranks (its history and philosophy, in fact, have only very infrequently been studied by other than geographers). In any case, the geographical element in Wallace's work is extremely pervasive. Consider: his extensive travels (many of which verged on exploration) and travel writings (including dozens of short selections and three books); a planned (but never executed) monograph on the physical geography of the Amazon; his position as history's foremost tropical (regions) naturalist, and the recognized 'father' of modern zoogeography; significant contributions to ethnography; his important work in glaciology; extensive writings on both biogeography and physical geography in general (several monographs and some one hundred shorter works); his strong interest in land planning and associated aspects of economic and agricultural geography (monographs, dozens of shorter writings, and his Land Nationalisation Society association); his service as a part-time Assistant Examiner in physical geography for over twenty years; his interest in and contributions to geographic education (especially his travel writings and suggestions for geographically-arranged museum displays). He was a Fellow

of the Royal Geographical Society for over fifty years and was awarded their Founder's Medal in 1892; he was also presented with the Gold Medal of the Société de Géographie of France in 1870.

Considering the above list, one cannot help but wonder whether some of the difficulties people have had in interpreting Wallace's work may be a function of miscategorization. He is, arguably, the most important individual in the history of science who might legitimately be labelled *strictly* a geographer; that is, a geographer who happened to be interested in the subject of evolution.

Wallace's fame as an anthropologist rests primarily on his views on the evolution of man. But he was also a competent and contributing primatologist, ethnologist, and ethnographer, and a significant source of ideas on the role of women in society and the future evolution of mankind. His treatment of human evolution, though in part natural selection-based, differed considerably from Darwin's, and drew (and still draws) no little attention. His attraction to spiritualism is fascinating, but, as it turns out, something of a side-issue; it is important to note in this context, however, that he portrayed spiritualism as 'a new branch of anthropology' in a letter to Thomas Huxley in 1866 (Marchant 1916, p. 418).

Lastly, we have Wallace the social critic and theorist. This aspect of his work at first may seem the least relatable to the others. But many of his philosophical explorations are traceable to an interest in utopian socialist theories dating from his teen years, and in turn to a conviction that the overall theme of existence is progressive change. His evolutionary biology studies (including those with an anthropological emphasis) were thus undoubtedly inspired in part—or even largely—by his prior belief that social change continues a process initiated at the physical and biological levels. But he was in no sense a 'Social Darwinist', protesting vehemently, for example, against 'might is right' arguments. To his mind, evolution was leading to the production of sympathetically co-operating beings, not selfishly competing 'human herds'. His social criticism represented an attempt to expose the things he felt were impeding progress in that direction. He came to believe that the rampant capitalism and materialism of the period were great evils; the corrective measures he advocated included, among other things, land nationalization, abolishing court-supported inheritance and trusts, socialism, and yielding to a 'social' form of natural selection depending on woman's release from economic 'indenture'. Although permeated by a general disregard for what was immediately practicable, many of the goals of the causes he supported have in the long run been reached—usually, it seems, without remembrance of the visionary reasoning he had applied to thinking out such goals many years earlier.

Reading Wallace is a challenge. Though his priorities are both timeless and consistent and his writing style exemplary, he was never afraid to stray from the familiar when it came to conclusions. Unorthodox though they often were, however, his positions had not been superficially reasoned. As notable a source

as the American pragmatist philosopher Charles Peirce once opined, in fact, that the arguments Wallace set out in support of his views 'ought to be made the basis of a course of lectures on logic' (Peirce 1906, p. 160). For those who are not in the habit of dismissing the unfamiliar out of hand, therefore, the following readings will provide many challenges to familiar assumptions.