

MR. ALFRED RUSSEL WALLACE, F.R.G.S.

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THE man who explores an unknown region, and introduces its wonderful stores to his fellowmen, richly deserves their gratitude for having expanded the circle of their knowledge. Many men besides Mr. Alfred Russel Wallace have from time to time befriended humanity in this way. But the number is small indeed of those who have had the courage to break through the fetters of accepted scientific theory,

and to work out for themselves such problems as that of the natural classification of plants by De Candolle, the principles of geology laid down by Lyell, and the theory of Natural Selection promulgated by Darwin, a theory the grand bases of which were grasped and many of the details worked out independently by Mr. A. R. Wallace, whose name consequently stands in the first rank of those who have served natural science in either of the modes above alluded to.

There is, however, another branch of what should be ranked as a natural science in which Mr. A. R. Wallace has, with rare courage, spoken out and done service which, if not universally appreciated at the present day, is well known to his honour, and will as yet be so considered universally. He entered upon the study of psychology, and having become convinced by hard facts of the truths of spiritualism, he had the remarkable boldness to avow himself a spiritualist, utterly regardless of the sneers of too many of his scientific brethren. By this course he not only showed a candour unhappily too rare, but he has done much to encourage others less bold than himself to avow their real convictions.

Alfred Russel Wallace was born at Usk, in Monmouth, in the year 1822. When five years old his parents came to live at Hertford, where his grandfather, Mr. Greenell, resided, and he was sent to Hertford Grammar School, under the delusive idea that he would there receive a good education. That he learned there very little cannot have been owing to any want of capacity, is proved by his after life, but whatever was the cause, the fact remains that, though he had probably naturally a taste for reading, he was almost uneducated as compared with what he should have been after spending so much time at school. At the time of his leaving this Academy, at the age of fourteen, his elder brother, William, had established himself as an architect and surveyor, and had formed a connection in that profession, in which Alfred came to assist him, working for some seven years principally at land surveying, in Bedfordshire, Radnorshire, and Glamorganshire. William Wallace was a very intellectual man, very fond of science and literature, and sceptical as to religion; and from him Alfred imbibed many of his ideas on this latter subject, together with a taste for general science. Being a good deal occupied in surveying on the hills in Glamorganshire,

he desired to know something of the large variety of plants which he saw around him, and consequently procured a work on Botany, which he studied carefully. However, at about the period of his attaining his majority, it so happened that his brother, not having at the time more business than he could well attend to himself, no longer required his services, and the post of English master in the Collegiate School at Leicester offering itself, he accepted it, and remained in this occupation for a year and a half. Here he met with Mr. H. W. Bates, now the Assistant Secretary of the Royal Geographical Society, and owing to his influence, soon began to study entomology, and to take an interest in collecting and watching the habits of insects. In 1845, however, his brother William died, and he left Leicester to join another brother (John) in keeping together the connection in business which his brother William had formed at Neath, in Glamorganshire. He remained in this business for some three years, doing surveying and engineering work, among other matters building a Mechanics' Institute for the town. At the same time, the two brothers were desirous of benefitting the people around them, and delivered lectures on physics and on mechanical science to the working people of Neath.

During this time he had kept up his acquaintance and maintained a correspondence with his friend, Mr. H. W. Bates, and he began to be filled with the desire to visit some tropical country where he could revel in the wealth of such a vegetation as he could but dream of at home, and of hosts of birds and insects revealing brilliant hues, new forms, and unstudied adaptations and instincts. Where, he asked himself, was an unexplored tropical region to be found? He had read Humboldt's "Aspects of Nature," and revelled in his account of his travels in South America. He proposed to Mr. Bates to join him in an expedition for studying and collecting specimens of natural history. It was necessary to select some region in the tropics which had been as yet but little travelled over, at least by collectors, so that, as they could not afford the expense of travelling merely for the sake of study or pleasure, they might be able to bring home something that would at least recoup them for their outlay. They made careful enquiries as to the best locality to select, and went for this purpose to Mr. Doubleday, then the curator of the Entomological department at the British Museum, and partly owing to his advice, influenced

also by what they had read in the Travels of Mr. W. H. Edwards to Pará and the Amazon, published in Murray's "Home and Colonial Library," they determined upon a voyage up the Amazon, this region being at that time a ground untrodden as regards insects. In May, 1848, just at the time when France was endeavouring to frame a Republican Constitution for the second time, when revolution was rife in Italy and Hungary, and the Chartists were stirring in England and putting forth the treasonable points of which all but one or two have already become constitutional. They turned their backs on all these stirring events, and sailed from Liverpool for South America.

In due time they arrived at Pará, and ere long were engaged together in the exploration of this new and delightful region. They had to face difficulties and dangers of many kinds, whilst the fever and ague attacked them; but what were these to men enjoying the charms of constantly discovering and capturing some rare or hitherto unknown bird, beetle, or butterfly. This would seem to many to be a jibe, but the true scientific student feels that in new forms of life he has a study which enlarges his conceptions of nature, and aids him to discover new springs of action, leading him to note the perfect adaptability of form, organization, and colour to the position of each creature and the circumstances by which it is surrounded. Observations and studies of this nature have been the foundation of some of the most important contributions to the theory of the origin of species; and it is difficult to over-estimate the value and importance of observing the characteristics and habits of what may, to the uninstructed mind, appear to be insignificant creatures. Thus Mr. Wallace brought home with him, on his return from the Sunda Islands, a number of butterflies of the most gorgeous and brilliant colours; but, strange to say, these butterflies were beautiful only on the upper side of the wing, the lower side being of a dull brown. The reason for this peculiarity became apparent on observing that these butterflies, when they perched upon a tree very common where they exist, and folded their wings, at once appeared to be simply dead leaves of the tree; and, moreover, he observed that they invariably perched with their heads towards the root of the tree, so as to assume the exact position and direction of the leaves. This simulation of dead leaves is the safety of these creatures from the attacks of numerous birds, which can

only distinguish so desirable a prey when flying, and they have but to perch to escape pursuit. This is but one of many instances which might be given; but this is not the place for an essay on Natural Selection.

The two travellers remained working in company for seven months, after which they decided to divide the work of exploration, and to pursue each an independent course. After some three years of exploration and collecting on the Amazon and the Rio Negro—in which latter district he contracted a malignant fever, from which he barely escaped with his life, and which materially injured his constitution—Mr. Wallace turned his face homewards, and having got his treasures to the coast embarked at Pará, for England. Unhappily, a portion of the cargo of the ship in which he had taken his passage, consisted of balsam of capivi, which took fire when they were in Mid-Ocean. Attempts to quench the fire were useless, and they had to take to the boats which were so leaky, that they could only be kept afloat by constant baling. There was no time to save anything, and Mr. Wallace only took from the ship the clothes he was wearing, his watch, and a small memorandum book, which was in his pocket. As they lay off the ship in the boats, it was heartrending to see the monkeys and parrots struggling, but unable to escape from the fire which eventually destroyed them. One of the parrots flew to the boats and was caught, but all the collections and specimens, whether living or inanimate, sank or were burned. The position of those in the boats was anything but satisfactory; they had, indeed, escaped from the flames, but now seemed likely to be as certainly, if not so quickly, destroyed by water. The Bermudas, the nearest land, were 200 miles off, and their stock of provisions was by no means large, while they were nearly up to their waists in water. For ten days they were in this condition, but were at length saved by a vessel homeward bound. This ship was, however, very leaky, and owing to the unexpected addition to her company, her provisions began to run short, and when at length through many dangers, she had entered the English Channel, a storm came on which had nearly wrecked her, and which did destroy many a better ship. At length, Mr. Wallace landed, eighty days after leaving Pará, and found himself with health terribly shattered, so that he was for a considerable period unable to do anything. Happily, his good constitution triumphed,

and he ultimately recovered his health. He did not wait for his complete restoration before he had got ready for publication the account of his travels on the Amazon and Rio Negro, which appeared in 1853, and was a few months later followed by a work on the Palm trees of the Amazon and their uses, a charming and valuable contribution to the literature of Natural Science. The burning ship from which he had escaped, with the loss of all his hardly-won spoils of nature; the ten days of exposure and apprehension in a leaky boat out on the broad Atlantic, followed by the continued dread of shipwreck in the leaky, rotten timber-ship which had picked him up, in which all painful and doubtful feelings were intensified by the want of sufficient food; the recollection of all these things combined to give him a terror of the sea, and he almost resolved never to go abroad again. But the love of natural history, and the fascinations of its study cannot be thrown off. The mind that has tasted the pleasures of new discoveries, and of working out from them chains of harmonious sequence, thirsts for fresh food; and Mr. Wallace in his desire for further tropical explorations soon began to forget all that he had suffered. He resolved to recommence his work, and considered whither he should now turn his footsteps: he had lost his South American collections, and was, therefore, deprived of the means of comparative study of the natural history of the region he had explored. Moreover, Mr. Bates still remained in South America, and having his collections with him was in the position to do the best kind of work there. Mr. Wallace, therefore, abandoned the latter portion of the plan which he had at first conceived of renewing his explorations and continuing them to the Andes; he turned his ideas eastward, and noted that the islands of the great Malayan Archipelago remained almost unexplored. Many of the most magnificent birds and insects from these regions were then unknown. The specimens of its natural history to be found in England, or on the continent of Europe were few and far between. A few of them had, almost by chance, been brought westward, and a few isolated birds or insects might be found in the British Museum, in the Museum in Paris, or in Berlin. Yet it was known that these great islands teemed with animal and vegetable life, much of which was new and strange to the old world. He resolved, therefore, to explore these regions, and in the year 1854 started again for the tropics, where he spent

eight years in the scientific study of the wonderful islands of the Eastern Archipelago, which he found to be a perfect paradise to the naturalist. Here, too, he was fortunate as to the collections which he sent to England from time to time, and on again reaching England, was gratified to find that nothing had been lost. His adventures among the Malay Islands, and the history of his numerous discoveries, cannot be even briefly mentioned, and the reader will find that his account of his travels, which appeared in 1869, abundantly repays perusal. On his return home he found himself, while suffering for a couple of years in health from the effects of his journeying, surrounded by a host of packages and boxes, each requiring examination, and this not merely in itself;—comparison and classification were needed, to which his personal attention was indispensable. Hence it was not for some half dozen years that he was able to set fairly to work to give to the public a corrected and digested account of his work, and some idea of what he had to go through in this way may be formed on considering that he had brought home from the Malay Archipelago 125,600 specimens of animal life, besides the plants which he had collected. These specimens consisted of 310 mammals, 100 reptiles, 8,050 birds, 7,500 shells, and 109,700 insects, of which 13,100 were Lepidoptera, 83,200 Coleoptera, and 13,400 miscellaneous. In collecting these, he had travelled 14,000 miles, and had made 60 or 70 separate journeys from various centres of departure. Such a collection from these regions had never before been seen, and the result of his labours has been that naturalists are now familiar with the grand features as well as the details of the natural history of these marvellous and interesting islands which had up to that time been in this respect almost *terra incognita*.

Since his return from the East, Mr. Wallace has lived in England, engaged in the study of his collections, and in writing a series of volumes on different branches of natural history, taking, moreover, occasionally his part in the discussions of matters of social and political interest, as is the case at the present moment when he is engaged in the study of the great Land question, and the promotion of a scheme for the nationalization of the land.

In 1869 he married Miss Mitten, daughter of Mr. William Mitten, the well-known botanist, and has two children, a son and daughter. In 1868, the Royal Society awarded

him their Royal Gold Medal, chiefly on account of his investigations into the geographical distribution of animals; and in 1870 the *Société de Géographie* of Paris awarded him their gold medal for his travels from 1854 to 1862 in the Malay Archipelago.

Mr. Wallace has justly earned the reputation of sharing with Mr. Darwin the honours which appertain to the discovery and enunciation of the now accepted theory of Natural Selection, and it is clear that in this announcement he in some respects preceded Darwin. In September, 1855, he published in the *Annals and Magazine of Natural History* an essay on "The Law which has Regulated the Introduction of New Species," in which he promulgated the idea of "Natural Selection." In this essay he says:—"It is about ten years since the idea of such a law suggested itself to the writer of this essay," and he goes on to say that all newly ascertained facts had served to convince him of the correctness of his hypothesis. In the *Journal of the Proceedings of the Linnean Society*, August, 1858, appeared his second essay on this subject, "On the Tendency of Varieties to depart indefinitely from the Original Type," and from these two essays it will be seen that Mr. Wallace entirely independent of Mr. Darwin's labours, had arrived from his own observation and reflection at conclusions closely approximating to, if not identical in substance with, those so wonderfully elaborated in "The Origin of Species."

In 1870, Mr. A. R. Wallace published "Contributions to the Theory of Natural Selection, a Series of Essays," including the two above mentioned, and in the preface to this volume he modestly reviewed his own position as an exponent of the theory—as follows:—"The second essay, especially when taken in connection with the first, contains an outline sketch of the theory of the origin of species (by means of what was afterwards termed by Mr. Darwin 'Natural Selection'), as conceived by me before I had the least notion of the scope and nature of Mr. Darwin's labours. They were published in a way not likely to attract the attention of any but working naturalists, and I feel sure that many who have heard of them, have never had the opportunity of ascertaining how much or how little they really contain. It, therefore, happens that, while some writers give me more credit than I deserve, others may very naturally class me with Dr. Wells and Mr. Patrick



Matthew, who, as Mr. Darwin has shown in the historical sketch given in the fourth and fifth editions of the 'Origin of Species,' certainly propounded the fundamental principle of 'Natural Selection' before himself, but who made no further use of that principle, and failed to see its wide and immensely important applications. The present work will, I venture to think, prove that I both saw at the time the value and scope of the law which I had discovered, and have since been able to apply it to some purpose in a few original lines of investigation. But here my claims cease. I have felt all my life, and still feel, the most sincere satisfaction that Mr. Darwin had been at work long before me, and that it was not left for me to attempt to write 'The Origin of Species.' I have long since measured my own strength, and know well that it would be quite unequal to that task. Far abler men than myself may confess that they have not that untiring patience in accumulating, and that wonderful skill in using large masses of facts of the most varied kind, that wide and accurate physiological knowledge, that acuteness in devising, and skill in carrying out experiments, and that admirable style of composition, at once clear, persuasive, and judicial, qualities which in their harmonious combination mark out Mr. Darwin as the man, perhaps of all men now living, best fitted for the great work he has undertaken and accomplished."

Mr. Wallace next occupied himself in preparing his important work on "The Geographical Distribution of Animals," which appeared in 1876, and is the result of four years continuous labour. It is elaborately illustrated with maps and plates, forming two handsome volumes, 8vo, and must be looked upon as a standard work on this highly interesting subject. In 1878 he published "Tropical Nature," consisting of a number of essays on different subjects connected with tropical life, the more important of these being the three first—on Climate, Vegetation, and Animal Life in the tropics. These were written for the occasion; the others were amplifications of short papers which had been previously written. Two chapters which were added on the colours of animals and plants, give a new and different explanation of the origin of colour in nature, different from, and in some respects opposed to, that offered by Mr. Darwin. Mr. Wallace in these chapters supports his view of the question by a great body of facts and arguments. In 1880 he brought out "Island Life," an

account of the phenomena of insular faunas and floras, in which he attempts a solution of the problem of geological climates. He has also written the volume of 660 pages on Australia, for Stanford's Compendium of Geography and Travel. This book is based on the German work of Hellwald, but as it happened, this work could only be made use of to the extent of one-tenth of the amplified, or, more properly speaking, original volume written by Mr. Wallace.

At the time when Mr. Wallace was English master in a school at Leicester, in the year 1844, Mr. Spencer Hall delivered some lectures on mesmerism in that town, which he and some of his pupils attended, and in which they all became greatly interested. He then made some experiments and investigations on animal magnetism, taking such precautions as utterly precluded any deception or fraud; and though he could not explain the phenomena which he then witnessed, he was utterly unable to resist the evidence of the reality of phreno-mesmerism, sympathetic sensation and clairvoyance. During his twelve years of tropical wanderings he heard occasionally of the strange phenomena said to be occurring in America and Europe under the general names of "table-turning" and "spirit-rapping," and his knowledge of mesmerism having already taught him that modern science ignored certain mysteries of the human mind because it could not explain them, he determined that on his return home he would seize the first opportunity to examine into these matters. He had been for twenty-five years an utter sceptic as to the existence of any preterhuman or superhuman intelligence, and he, at that time, never for a moment contemplated the possibility that the marvels related by spiritualists could be literally true.

His change of opinion, as he says, was brought about simply by the force of evidence. He went into the subject from no dread of annihilation. It was from no inordinate longing for eternal existence that he came to believe in facts which, as he says, render this highly probable if they do not actually prove it. When on three different occasions he had found himself face to face with imminent death he had but felt a gentle melancholy at the thought of quitting this wonderful and beautiful earth to enter on a sleep which might probably know no waking. He was unbiassed by hopes or fears, knowing that his belief could not affect the reality, and he had an in-

grained prejudice against even such a word as "spirit," which he tells us he has even yet hardly overcome.

It was with a mind in this condition that in the summer of 1865, at the house of a friend—a sceptic, a man of science, a lawyer, with none but members of his host's family present, he first witnessed some of the phenomena of spiritualism. He has given some account of these and of the tests which he devised and carried out, so as to preclude the possibility of any deceit or imposition. It would be out of place here to recapitulate these, which may be found in "Miracles and Modern Spiritualism," of which the second edition has recently been published by Trübner & Co. But it will be interesting to recount here one remarkable experience of which the writer of these lines was himself a witness, having been invited by Mr. Wallace to spend an evening with him at his then residence in St. Mark's Crescent, Regent's Park, to meet Miss Nicholl, afterwards better known as Mrs. Guppy. The account is taken from the volume above mentioned, and is as follows:—"All present were my own friends. Miss N. had come early to tea, it being midwinter, and she had been with us in a very warm gas-lighted room four hours before the flowers appeared. The essential fact is, that upon a bare table in a small room closed and dark (the adjoining room and passage being well lighted), a quantity of flowers appeared, which were not there when we put out the gas a few minutes before. They consisted of anemones, tulips, chrysanthemums, Chinese primroses, and several ferns. All were absolutely fresh, as if just gathered from a conservatory. They were covered with a fine cold dew. Not a petal was crumpled or broken, not the most delicate point or pinnule of the ferns was out of place. I dried and preserved the whole, and have attached to them, the attestation of all present that they had no share as far as they knew, in bringing the flowers into the room."

The writer of this memoir, who, as is remarked above was present, sat near the table which was between him and the light, and was moreover, the only person present who was in a position to touch the flowers as they were laid down. He did so, as they were deposited noiselessly, and he watched the heap of flowers as it grew larger, and obscured more and more of a bright patch on the table caused by the light from the window shining on its polished surface. For though the room was darkened, the window was

obsured only by a white blind, through which the light from the bright moonlight penetrated into the room, and it would have been easy for him to have seen if any one had moved. The flowers could not have been noiselessly deposited from even a short distance, and he, who was the only person in a position to have laid down those that were near him, certainly did not do so.

The bold avowal by Mr. Wallace of his belief in these and other like phenomena was welcomed by the spiritualists, and even hostile men of science were unable to charge him with having fallen a victim to delusions. His writings and utterances on questions of Natural Science were not viewed with less respect than had been previously the case, and even his essays on the question of Spiritualism could not be wholly neglected. There were some of his friends, however, to whom he thus alludes in the preface to the volume above mentioned.

“I am well aware that my scientific friends are somewhat puzzled to account for what they consider to be my delusion; and believe that it has injuriously affected whatever power I may have ever possessed of dealing with the philosophy of Natural History. One of them—Mr. Anton Dohrn—has expressed this plainly. I am informed that in an article entitled ‘Englischer Kritiker und Antikritiker des Darwinismus,’ published in 1881, he has put forth the opinion that Spiritualism and Natural Selection are incompatible, and that my divergence from the views of Mr. Darwin arises from my belief in Spiritualism. He also supposes that in accepting the spiritual doctrines I have been, to some extent, influenced by clerical and religious prejudice. As Mr. Dohrn’s views may be those of other scientific friends, I may perhaps be excused for entering into some personal details in reply. From the age of fourteen I lived with an elder brother, of advanced liberal and philosophical opinions, and I soon lost (and have never since regained) all capacity of being affected in my judgments, either by clerical influence or religious prejudice. Up to the time when I first became acquainted with the facts of Spiritualism, I was a confirmed philosophical sceptic, rejoicing in the works of Voltaire, Strauss, and Carl Vogt, and an ardent admirer (as I am still) of Herbert Spencer. I was so thorough and confirmed a materialist that I could not at that time find a place in my mind for the conception of spiritual existence, or for any other

agencies in the universe than Matter and Force. Facts, however, are stubborn things. My curiosity was at first excited by some slight but inexplicable phenomena occurring in a friend's family, and my desire for knowledge and love of truth forced me to continue the inquiry. The facts became more and more assured, more and more varied, more and more removed from anything that modern science taught or modern philosophy speculated on. The facts beat me. They compelled me to accept them *as facts*, long before I could accept the spiritual explanation of them; there was at that time no place in my fabric of thought into which it could be fitted. By slow degrees a place was made, but it was made not by any preconceived or theoretical opinions, but by the continuous action of fact after fact, which could not be got rid of in any other way. So much for Mr. Anton Dohrn's theory of the causes which led me to accept Spiritualism. Let us now consider the statement as to its incompatibility with Natural Selection. Having, as above indicated, been led, by a strict induction from facts, to the belief—1stly, In the existence of a number of preterhuman intelligences of various grades; and 2ndly, That some of these intelligences, although usually invisible and intangible to us, can and do act on matter and do influence our minds,—I am surely following a strictly logical and scientific course, in seeing how far this doctrine will enable us to account for some of these residual phenomena which Natural Selection alone will not explain. In the tenth chapter of my 'Contributions to the Theory of Natural Selection,' I have pointed out what I consider to be some of these residual phenomena; and I have suggested that they may be due to the action of some of the various intelligences above referred to. This view was, however, put forward with hesitation, and I myself suggested difficulties in the way of its acceptance; but I maintained, and still maintain, that it is one which is logically tenable, and is in no way inconsistent with a thorough acceptance of the grand doctrine of evolution, through Natural Selection, although implying (as indeed many of the chief supporters of that doctrine admit) that it is not the all-powerful, all-sufficient, and only cause of the development of organic forms."

Mr. Wallace has somewhat recently taken an interest in the great and important national question of our Land Laws. Many years since he was associated with John Stuart Mill, in a movement for the promotion of Land

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Tenure Reform, no doubt a very incomplete idea, and one which incomplete as it was, was too violently opposed at the time to attain to any success. He has now become chairman of a movement which is intended to be much more complete, namely, that of the Land Nationalization Society. The scheme proposed by this Society is, that the Government acting for the nation should acquire at once by Act of Parliament the land, which it ought never to have surrendered. The owners of land are to be indemnified by an annuity for two or three generations, equal to the value of the soil itself, independent of the improvements which they themselves, or their predecessors had made; while for these improvements they should be paid by the occupier, who would have to pay his rent to the State, which would be the only landlord in the kingdom. No one would be allowed to hold land as an investment, but simply as an occupier. Thus the increase in the value of land which arises from the growth of towns, increased facilities of communication, &c., would become the property of the State for the benefit of the whole community; and, it is urged, that the many serious ills that now arise from the unequal distribution of property would then cease to exist. The proposed scheme is worthy of close study in all its details; the evils of the present Land Laws are fully admitted, but these are not the pages in which to discuss the value, or the justice of the proposed remedy. It is enough to mention the few particulars above stated, and leave the matter to be discussed fully, as it must be ere long. In conclusion, it may be remarked, that this latest movement shows that Mr. Alfred Russel Wallace, after all his labours, is not a man satisfied to sit down in the chimney corner to enjoy rest and ease. He must be up and doing for the benefit of his fellowmen.

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