CHAPTER XXV.

DR. ALFRED RUSSEL WALLACE: SCIENTIST, SOCIAL REFORMER, AND PHILOSOPHER

Early Life—Four Years on the Amazon—Shipwrecked—Eight Years in the Malay Archipelago—Darwin and Wallace Co-Discoverers of the Law of Natural Selection—High Standing as a Physical Scientist—Social Philosophy—His Radical Solution for the Railway Problem—The Law of Equal Justice—His Religious Belief—Home Life.

ONE of the most valued contributors to "The Arena" was the great English scientist, Dr. Alfred Russel Wallace. He took much interest in the magazine from its inception and frequently prepared notable contributions for its pages. As physical scientist he ranked with the greatest revolutionary thinkers of the century. He was England's foremost working naturalist and one of the ablest leaders in the Land and Social Reform campaign of the past fifty years. It is seldom that a man absorbed for years in critical research along the lines of physical science becomes interested in social problems and other broad issues that appeal to the imagination of the thoughtful in other fields of intellectual activity. Dr. Wallace, however, was nothing if not versatile, being one of the most luminous chroniclers and critics of the past century. So commanding is his place among the first thinkers of our time, that I give a somewhat extended outline of his life.

He was born in a humble home. His father was a man of education, but somewhat lacking in energetic perseverance, especially when engaged in labors along practical lines, and the finances of the family suffered as the years passed, so it was impossible to give the children who came into the home the liberal education that they craved. Alfred Russel, in common with his brothers, received only the ordinary grammar-school education of the time, though this was supplemented by home training and education which probably counted for quite as much as that which he re-

ceived in school. The father belonged to a circulating library association which enabled him to obtain the latest and best books. These he read aloud to the family during the evenings, and in this way all the little group gained a love for literature and a breadth of culture in certain directions that many youths with far better scholastic advantages do not acquire. Later the father was librarian in an excellent library, and many afternoons after school was out, Alfred went to the library and devoured the contents of choice books until it grew too dark to read longer.

But the time came, and that when the youth was only fourteen years of age, when the father could no longer support the boy and it became necessary for him to leave the home-roof and earn his own livelihood. It was arranged that he should go in company with his elder brother William, a surveyor by profession, and as his aid earn a sufficient amount to maintain himself while learning land surveying.

In the early summer of 1837 he set out as aid to his brother William in surveying, and for the next few years the two brothers were thus engaged. Very beautiful is the description of the simple and wholesome life they led as they journeyed through England and Wales, wherever their work chanced to call them. Both brothers were great lovers of Nature, but to Alfred the marvels of the Great Mother appealed with irresistible charm. The wonderful wild flora and the multitudinous plants of England and Wales were an unfailing source of pure delight. Yet he longed to know the names of the plants, their habits, and the great families to which they belonged. He had time to study during rainy days, on Sundays, and frequently in the evenings, and at length he obtained a small work on botany, published by the Society for the Diffusion of Knowledge. Later, by saving up his money, he was enabled to buy a large and authoritative work on the subject.

Thus equipped he began a systematic study of the plants with which he came in contact. Soon he had obtained a far better knowledge of botany than most youths who had gone through the books at school but who had not had the subject illustrated and impressed on the brain by sceing and

examining the plants of which they had read. Later he studied geology, ornithology, and entomology in the same painstaking manner. When in London he visited the great museums to familiarize himself with the birds, butterflies, beetles, and other animal life of the world described in the various text-books he had set out to master, and which he did master more completely than most specialists in natural history of his age.

Later he spent a year teaching in the Collegiate School at Leicester, kept by the Rev. Abraham Hill. Here he had access to a fine library, and as a result he made great advance in his self-education through systematic study of standard works.

At this time occurred one of those seeming accidents that exercise a life-shaping influence. Mr. Wallace chanced to become acquainted with Henry Walter Bates, an enthusiastic entomologist who had made extensive collections of bugs, beetles, and butterflies. In association with this scientific enthusiast, young Wallace became as deeply interested in entomology as he had been in botany, and forthwith began a most thorough system of self-culture on the subject, supplementing it with studies of other branches of natural science. He and Bates became intimate friends and together conceived the idea of setting forth for the tropics as collectors of butterflies, beetles, and other forms of life. A work had recently appeared by Mr. W. H. Edwards entitled "A Voyage up the Amazon," which determined the young man to fare forth to the wilds of the South American forests, provided they could make arrangements for the disposal of their collections of butterflies and other insects, so as to pay expenses. They were encouraged in their purpose by Mr. Edward Doubleday, who had charge of the department of butterflies in the British Museum. He stated that if they collected land shells, birds, and mammals as well as insects, he felt sure they could easily pay all their expenses. Thus encouraged, and after making arrangements with a party to act as agent in London, the two young men took passage in a sailing vessel for Para in the spring of 1848.

For four years Alfred Russel Wallace devoted himself tirelessly and with unflagging zeal to his labors. He ex-

plored the banks of the Amazon, Rio Negro, and many of their tributaries and sent home enough specimens to pay his expenses, but he saved the greater number of his collections to take with him when he returned. He collected butterflies, beetles, and other insects, and many rare specimens of birds and other forms of life. He made a study of the wonderfully beautiful fish of the rivers he traversed. These he described with great minuteness and accompanied his descriptions with careful drawings. He also made geographical surveys, charting and mapping little-known rivers and correcting errors in the maps of the day in regard to certain streams in parts of their courses.

At the end of four years Mr. Wallace determined to return home with his rich collections, a veritable argosy for the young man, representing the principal harvest of his hard years of toil. He embarked on July 12, 1852, on a sailing vessel named "The Helen," loaded chiefly with rubber, cocoa, anatto, and balsam-capivi. The voyage, which was as rich in thrilling experiences, disasters, and narrow escapes as the most daring creation of the novelist's brain, was described in the simple and unaffected manner peculiar to the writings of Mr. Wallace at the time of its occurrence in a letter written to a friend in South America as the young naturalist was nearing the coast of England, and so graphic is the description that we give the story largely in Mr. Wallace's own words.

On the morning of August 6th, when the young naturalist was busily engaged in his stateroom, the captain appeared saying: "I am afraid the ship is on fire." Mr. Wallace immediately went with him on deck, when it was found that the smoke was rising from various parts of the vessel. The balsam-capivi, which is highly combustible and liable to ignite after a ship begins to rock, is usually transported in kegs packed in damp sand. The captain of the vessel, however, not knowing the danger, had packed a large portion of his cargo in rice-chaff, with the result that this highly inflammable gum had taken fire. After vainly endeavoring to check the flames it soon became evident that the only hope for the sailors lay in the life-boats. Accordingly, to use Mr. Wallace's own language, "the crew were employed

getting out the boats, the captain looked after his chronometer, sextant, books, charts, and compasses, and I got up a small tin box containing a few shirts, and put in it my drawings of fishes and palms, which were luckily at hand; also my watch and a purse with a few sovereigns. Most of my clothes were scattered about the cabin, and in the dense suffocating smoke it was impossible to look after them. There were two good boats, the long-boat and the captain's gig, and it took a good deal of time to get the merest necessaries collected and put into them, and to lower them into the water. . . . The crew brought up their bags of clothes and all were bundled indiscriminately into the boats, which, having been so long in the sun, were very leaky and soon became half full of water, so that two men in each of them had to be constantly bailing out the water with buckets.

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"All hands were at once ordered into the boats, which were astern of the ship. It was now about twelve o'clock, only three hours from the time the smoke was first discovered. I had to let myself down into the boat by a rope, and being rather weak it slipped through my hands and took the skin off all my fingers, and finding the boat still half full of water I set to bailing, which made my hands smart very painfully. We lay near the ship all the afternoon, watching the progress of the flames, which soon covered the hinder part of the vessel and rushed up the shrouds and sails in a most magnificent conflagration. Soon afterwards, by the rolling of the ship, the masts broke off and fell overboard, the decks soon burnt away, the ironwork at the sides became red-hot, and last of all the bowsprit, being burnt at the base, fell also. No one had thought of being hungry till darkness came on, when we had a meal of biscuit and raw ham, and then disposed ourselves as well as we could for the night, which, you may be sure, was by no means a pleasant one. Our boats continued very leaky, and we could not cease an instant from bailing; there was a considerable swell, though the day had been remarkably fine, and there were constantly floating around us pieces of the burnt wreck, masts, etc., which might have stove in our boats had we not kept a constant lookout to keep clear

of them. We remained near the ship all night in order that we might have the benefit of its flames attracting any vessel that might pass within sight of it.

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"I cannot attempt to describe my feelings and thoughts during these events. I was surprised to find myself very cool and collected. I hardly thought it possible we should escape, and I remember thinking it almost foolish to save my watch and the little money I had at hand. However, after being in the boats some days I began to have more hope, and regretted not having saved some new shoes, cloth coat and trousers, hat, etc., which I might have done with little trouble. My collections, however, were in the hold, and were irretrievably lost. And now I began to think that almost all the reward of my four years of privation and danger was lost. What I had hitherto sent home had little more than paid my expenses, and what I had with me in the 'Helen' I estimated would have realized about £500. But even all this might have gone with little regret had not by far the richest part of my own private collection gone also. All my private collection of insects and birds since I left Para was with me, and comprised hundreds of new and beautiful species, which would have rendered (I had fondly hoped) my cabinet, as far as regards American species, one of the finest in Europe. . . . But besides this, I have lost a number of sketches, drawings, notes and observations on natural history, besides the three most interesting years of my journal, the whole of which, unlike any pecuniary loss, can never be replaced.

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"Day after day we continued in the boats. The winds changed, blowing dead from the point to which we wanted to go. We were scorched by the sun, my hands, nose, and ears being completely skinned, and were drenched continually by the seas or spray. We were therefore almost constantly wet, and had no comfort and little sleep at night. Our meals consisted of raw pork and biscuit, with a little preserved meat or carrots once a day, which was a great luxury, and a short allowance of water, which left us as

thirsty as before directly after we had drunk it. Ten days and ten nights we spent in this manner. We were still two hundred miles from Bermuda, when in the afternoon a vessel was seen, and by eight in the evening we were on board her, much rejoiced to have escaped a death on the wide ocean, whence none would have come to tell the tale."

The vessel that rescued them was an unseaworthy old tub, but meagerly provisioned with food that was not fit for human beings to touch. Shortly after they were taken aboard a terrific storm arose which threatened to destroy the vessel, and it was followed a few days later by a still greater tempest. The ship was considerably damaged and it was necessary to keep the pumps going steadily to keep down the water. However, she weathered the storm and reached England by October first.

Here a pleasant surprise awaited Mr. Wallace, as, arriving in London, he found that through the foresight of his agent his collection had been insured for a thousand dollars. This supplied him with money for immediate needs and enabled him to spend several months in London,—time enough to get out his two first works, one on "The Palms of the Amazon and Rio Negro," and the other "Travels on the Amazon and Rio Negro," and to further prosecute his studies in natural science so as to fully equip him for his next expedition to the tropics; for though when on the ocean he had determined never again to brave the seas, he soon felt the goad of desire for more knowledge in regard to tropical life which would enable him to solve many problems that were haunting his brain, and he determined to make the Malay Archipelago the field of research, as here tropical life was particularly rich in those forms that were the most alluring to him.

The collections which he had sent home from time to time during his stay in Brazil had made his name well known to the authorities of the Zoölogical and Entomological Societies, and on reaching London he received a ticket giving him free admission to the Zoölogical Gardens while he remained in England. He was a welcome visitor at the scientific meetings of both societies. In 1850 he had sent a paper on the Umbrella Bird, then almost unknown to Brit-

ish ornithologists, to the British Zoölogical Society, which was printed in the Society's Proceedings for that year; and on his return to England the Royal Geographical Society induced him to contribute a paper on the little-known region traversed by the Rio Negro and Uaupés rivers.

In the early spring of 1854 Mr. Wallace set out for the Malay Archipelago and in due time arrived at Singapore, from whence he began his eight years' of wandering throughout the Malay Archipelago, which, to use his own language, "constituted the central and controlling incident" of his life. Here for eight years he journeyed from island to island, often visiting the seldom-frequented regions where savage tribes of head-hunters had dwelt for generations, and at times camping for weeks or months on the edge of swamps and in jungles; and during the greater part of his wanderings he had no white companion, but was served by a bright little Malay boy, who proved very faithful both as servant, cook and assistant in his work. For the rest he had to depend largely on strangers of alien races whom he was able to pick up from time to time to serve as boatmen, guides, burden-bearers, and land servants.

That he was more than once in deadly peril we can easily imagine. On one occasion his little boat was driven on rocks and almost wrecked on a savage coast. At other times he was for weeks and months in constant peril from poisonous reptiles, insects, and the denizens of the virgin forests and swamps, to say nothing of the savage peoples. Frequently he was the victim of the fevers of the tropics, and one of the most interesting parts of his life story is his description of how the key to one of the great riddles of the evolutionary theory flashed upon him when he was in the grip of a hard chill incident to a malarial fever. So important is the truth that came to the naturalist at this time, and because it is related to one of the most interesting incidents in the history of the development of the evolutionary theory, we quote somewhat at length.

Dr. Wallace, after showing how for eight or nine years the problem of the origin of species had been continually pondered, and how varied observations and study had laid the foundation for its full discussion and elucidation, de-

scribes how he hit upon what he believed to be the exact process of change and the causes leading thereto—something that heretofore had appeared almost inconceivable.

"The great difficulty," he says, "was to understand how, if one species was gradually changed into another, there continued to be so many quite distinct species, so many which differed from their nearest allies by slight yet perfectly definite and constant characters. One would expect that if it was a law of nature that species were continually changing so as to become in time new and distinct species, the world would be full of an inextricable mixture of various slightly different forms, so that the well-defined and constant species we see would not exist. Again, not only are species, as a rule, separated from each other by distinct external characters, but they almost always differ also to some degree in their food, in the places they frequent, in their habits and instincts, and all these characters are quite as definite and constant as are the external characters. The problem then was, not only how and why do species change, but how and why do they change into new and well-defined species, distinguished from each other in so many ways; why and how do they become so exactly adapted to distinct modes of life; and why do all the intermediate grades die out (as geology shows they have died out) and leave only clearly-defined and well-marked species, genera, and higher groups of animals."

Mr. Wallace next observes how this new idea or principle which occurred to him at this time "answers all these questions and solves all these difficulties, and it is because it does so, and also because it is in itself self-evident and absolutely certain, that it has been accepted by the whole scientific world as affording a true solution of the great problem of the origin of species."

And now follows the interesting narrative of how the new truth was suddenly revealed to him and the result:

"At the time in question I was suffering from a sharp attack of intermittent fever, and every day during the cold and succeeding hot fits had to lie down for several hours, during which time I had nothing to do but think over any subjects then particularly interesting me. One day some-

thing brought to my recollection Malthus's 'Principles of Population,' which I had read about twelve years before. I thought of his clear exposition of 'the positive checks to increase'—disease, accidents, war, and famine—which keep down the population of savage races to so much lower an average than that of more civilized peoples. It then occurred to me that these causes or their equivalents are continually acting in the case of animals also; and as animals usually breed much more rapidly than does mankind, the destruction every year from these causes must be enormous in order to keep down the numbers of each species, since they evidently do not increase regularly from year to year, as otherwise the world would long ago have been densely crowded with those that breed most quickly. Vaguely thinking over the enormous and constant destruction which this implied, it occurred to me to ask the question, Why do some die and some live? And the answer was clearly, that on the whole the best fitted live. From the effects of disease the most healthy escaped; from enemies, the strongest, the swiftest, or the most cunning; from famine, the best hunters or those with the best digestion; and so on. Then it suddenly flashed upon me that this self-acting process would necessarily *improve the race,* because in every generation the inferior would inevitably be killed off and the superior would remain—that is, *the fittest would survive.* Then at once I seemed to see the whole effect of this, that when changes of land and sea, or of climate, or of food-supply, or of enemies occurred—and we know that such changes have always been taking place—and considering the amount of individual variation that my experience as a collector had shown me to exist, then it followed that all the changes necessary for the adaptation of the species to the changing conditions would be brought about; and as great changes in the environment are always slow, there would be ample time for the change to be effected by the survival of the best fitted in every generation. In this way every part of an animal's organization could be modified exactly as required, and in the very process of this modification the unmodified would die out, and thus the *definite* characters and the clear *isolation* of each new

species would be explained. The more I thought over it the more I became convinced that I had at length found the long-sought-for law of nature that solved the problem of the origin of species. For the next hour I thought over the deficiencies in the theories of Lamarck and of the author of the "Vestiges," and I saw that my new theory supplemented these views and obviated every important difficulty. I waited anxiously for the termination of my fit so that I might at once make notes for a paper on the subject. The same evening I did this pretty fully, and on the two succeeding evenings wrote it out carefully in order to send it to Darwin by the next post, which would leave in a day or two.

"I wrote a letter to him in which I said that I hoped the idea would be as new to him as it was to me, and that it would supply the missing factor to explain the origin of species. I asked him if he thought it sufficiently important to show to Sir Charles Lyell, who had thought so highly of my former paper."

Mr. Wallace does not enter into the details of what followed the receipt of his paper by Mr. Darwin, as the latter had dwelt on that in his autobiographical sketch published years earlier. Briefly, it may be observed that Charles Darwin had years before come to conclusions similar to those expressed by Mr. Wallace and had imparted his views confidentially to a few intimate friends, including Sir Charles Lyell, Dr. Hooker, and Professor Asa Gray of Harvard University, Cambridge, Massachusetts. On receipt of Mr. Wallace's paper and letter, Mr. Darwin found himself in a quandary. He did not desire to appear to appropriate any one's else discovery, yet his conclusions, though carefully guarded save as he had imparted them to his intimate friends, had been entertained for fifteen years and he had already prepared half of his great work elucidating them. In his dilemma he sought advice from Sir Charles Lyell, who counseled him to make an abstract of his great work and accompany it with explanations and a letter which he had written to Professor Gray a year previous, showing that he had long ere this fully arrived at the same conclusions as those advanced by Mr. Wallace, and that both

these papers should be given in the forthcoming meeting of the Linnean Society. In the "Life and Letters of Charles Darwin" the great author of the "Origin of Species" gives this interesting account of the publication of the two papers:

"Early in 1856 Lyell advised me to write out my views pretty fully, and I began at once to do so on a scale three or four times as extensive as that which was afterwards followed in my 'Origin of Species'; yet it was only an abstract of the materials which I had collected, and I got through about half the work on this scale. But my plans were overthrown, for early in the summer of 1858 Mr. Wallace, who was then in the Malay Archipelago, sent me an essay 'On the Tendency of Varieties to Depart Indefinitely From the Original Type'; and this essay contained exactly the same theory as mine. Mr. Wallace expressed the wish that if I thought well of his essay, I should send it to Lyell for perusal.

"The circumstances under which I consented at the request of Lyell and Hooker to allow of an abstract from my MS., together with a letter to Asa Gray, dated September 5, 1857, to be published at the same time with Wallace's Essay, are given in the 'Journal of the Proceedings of the Linnean Society,' 1858, p. 45. I was at first very unwilling to consent, as I thought Mr. Wallace might consider my doing so unjustifiable, for I did not then know how generous and noble was his disposition. The extract from my MS. and the letter to Asa Gray had neither been intended for publication, and were badly written. Mr. Wallace's essay, on the other hand, was admirably expressed and quite clear."

On reaching London Mr. Wallace found that his printed papers and his valuable work for natural history had won for him the admiration and friendship of most of England's foremost physical scientists. Everywhere the worth of his views on subjects relating to physical science in general and natural history in particular was highly respected and his great ability as a logical reasoner was fittingly recognized. Among those who were especially warm in their friendship and appreciation were Sir Charles Lyell, the Nestor of

physical science of the day, and Charles Darwin, the master-spirit among the evolutionary leaders. Herbert Spencer, T. H. Huxley, and indeed all the more eminent of the progressive school of physical scientists, were numbered among his personal friends. He also found his services in demand by the great societies which were carrying forward the various branches of investigation in natural science and history. It was during the thirty years following his return to England from the Far East that Mr. Wallace wrote his greatest scientific works, among the most important of which were "The Malay Archipelago," "Geographical Distribution of Animals," "Natural Selection and Tropical Nature," and "Island Life." He also published a great number of smaller treatises and wrote frequently for the leading magazines, as well as preparing several papers for the Ninth Edition of the "Encyclopedia Britannica."

Nor was his work confined to physical science. He wrote on a number of subjects entirely foreign to his special fields of research. Among his principal later scientific works were "Darwinism," the best popular exposition of the evolutionary philosophy that has been written, and "Studies Scientific and Social," embracing many of his shorter essays, both relating to physical science and social advance.

In 1882 Dublin University conferred on Mr. Wallace the degree of LL.D., and in 1889 he received the degree of D.C.L. from Oxford University.

In the autumn of 1886 Dr. Wallace was engaged by the management of the Lowell Lecture Course of Boston to deliver a series of lectures that were given in November and December of that year.

On his return to England he suffered greatly from asthma and came to the conclusion that his days of active labor were well-night over. He was, however, induced to go to Switzerland and deliver a lecture on the great achievements of the nineteenth century, which was so well received that friends urged him to prepare a volume on the subject. This he did not at first contemplate doing on account of his precarious health, but by a happy chance, if there be such a thing as chance, he was shown a way to health about this time, and with renewed life set to work on his splendid

and thought-inspiring book, "The Wonderful Century," one of the best if indeed it is not the most graphic and informing survey of the marvelous advances and also of the shortcomings of the nineteenth century. This volume was followed by his work, "Man's Place in the Universe," and still later by "My Life: A Record of Events and Opinions," written after he had passed the eightieth milestone.

Dr. Wallace's interest in social problems dates from his brief residence in London when he was but fourteen years of age. At that time he became deeply inteersted in the work of Robert Owen at New Lanark, and the social views of that great philanthropist and reformer exerted a marked influence on his mind. He was ever a passionate lover of justice, and he was too fundamental a thinker to fail to see the essential iniquity of present-day unjust social conditions. But it was not until the publication of Herbert Spencer's "Social Statics" that he clearly saw the iniquity of private-ownership in land and how it was a prime cause of social inequality and a leading factor in producing poverty, misery, and the crime incident to these.

In 1881, after the publication of a luminous paper on how to nationalize the land, a Land Nationalization Society was formed and the great naturalist was elected its first president.

Dr. Wallace hailed the appearance of Henry George's "Progress and Poverty" as the message of a true prophet of civilization; but though a firm believer in the Single-Tax idea, he was socialistic rather than individualistic in his economic views. He may be called a Fabian or an opportunist Socialist—a Socialist something after the order of Jean Jaurès, the eminent French statesman. In defining Socialism as he understood it, Dr. Wallace said:

"I may here state for the benefit of those ignorant writers who believe that socialism *must* be compulsory, and speak of it as a 'form of slavery,' that my own definition of socialism is 'the voluntary organization of labor for the good of all.' All the best and most thoughtful writers on socialism agree in this; and for my own part I cannot conceive it coming about in any other way. Compulsory socialism is, to me, a contradiction in terms—as much so as would be compulsory friendship."

As to the practicability of socialism he says:

"I have ever since been absolutely convinced, not only that socialism is thoroughly practicable, but that it is the only form of society worthy of civilized beings, and that it alone can secure for mankind continuous mental and moral advancement, together with that true happiness which arises from the full exercise of all their facilities for the purpose of satisfying all their rational needs, desires, and aspirations."

He was, however, nothing if not a democrat, not believing in any form of government that does not conform to the wishes of the majority. "To my mind," he observes, "the question of good or bad, fit or not fit for self-government, is not to the point. It is a question of fundamental justice, and the just is always the expedient, as well as the right. It is a crime against humanity for one nation to govern another *against its will*. The master always says his slaves are not *fit* for freedom; the tyrant, that subjects are not *fit* to govern themselves. The fitness for self-government is inherent in human nature. Many savage tribes, many barbarian peoples are really better governed to-day than the majority of the self-styled civilized nations."

Few economic papers published in "The Arena" were so widely copied and noticed by leading editors as Dr. Wallace's "The Social Quagmire" and "The Way Out for the Farmers and Laborers," and a later contribution dealing with the railway question, in which he advanced a method for the Government acquiring the railways, which, he observed, is founded on "a great principle of ethics, which, when it is thoroughly grasped, is seen to solve many problems and to clear the way to many great reforms in the interest of the people at large. This principle is that the *unborn* can have, and should have, no special property-rights; in other words, that the present generation shall not continue to be plundered and robbed in order that certain unborn individuals shall be born rich—shall be born with such legal claims upon their fellow-men that, while supplied with all the necessaries, comforts, and luxuries of life they need do no useful work in return. It is not denied that the present generation may properly do work and ex-

pend wealth for the benefit of future generations: that is only a proper return for the many and great benefits we have received from those who have gone before us. What this principle says is, that it is absolutely unjust for our rulers (be they a majority or minority) to compel us to pay, to work, or to suffer, in order that certain *individuals* yet unborn, shall be endowed—often to their own physical and moral injury—with wealth supplied by the labor of their fellow-men. As this is, I consider, perhaps the most important of all ethical principles in its bearing on political reforms and general human progress, it will be well to show that it is in harmony with the teachings of some of the greatest thinkers of the age.

"The great philosopher, Herbert Spencer—so recently lost to us—has perhaps as many admirers and followers in the United States as in his own country. In one of his later volumes on *Justice,* forming Part IV. of his 'Principles of Ethics," he gives us what he holds to be the very foundation-stone of Justice in the domain of Sociology, in the following words:

"'Of man, as of all inferior creatures, the law by conformity to which the species is preserved, is, that among adults the individuals best adapted to the conditions of their existence shall prosper most, and that the individuals least adapted to the conditions of their existence shall prosper least—a law which, if uninterfered with entails survival of the fittest, and spread of the most adapted varieties. And, as before, so here, we see that, ethically considered, this law implies, that *each individual ought to receive the benefits and evils of his own nature and consequent conduct: neither being prevented from having whatever good his actions normally bring him, nor allowed to shoulder off on to other persons whatever ill is brought to him by his actions.*'

"The passage here printed in italics is the 'law of social justice,' and it is again and again appealed to by its author, being usually condensed into the shorter formula, 'each shall receive the benefits and evils due to his own nature and consequent conduct.'

"For it is quite clear that both Herbert Spencer's formula and my own imply, not only equal opportunities of nurture

in infancy and of education in youth, but also equal opportunities to earn a livelihood; and this absolutely forbids the inheritance of wealth by individuals. Private bequests, above what is sufficient to give nurture and education, must therefore be abolished, and the surplus used to give *all* an equal start in life. This economic equality follows from Spencer's law of social justice. For by inheriting exceptional wealth a person receives what is in no way 'due to his own nature and subsequent conduct,' be its results either evil or good. If, therefore, we accept Spencer's law of social justice as being sound in principle, or adopt the formula of 'equality of opportunities' as being anything more than empty words, we *must* advocate the abolition of all unequal inheritance of wealth, since it is now shown to be ethically wrong, inasmuch as it dignifies unearned wealth and a consequent life of idleness and the pursuit of pleasure, as one to be admired, respected, and sought after.

"Having thus firmly established the principle of not recognizing any claims to property by the unborn, it follows that in all transfers of property from individuals to the State we have only to take account of persons living at the time of the transaction, and of the public interest both now and in the future. When therefore the Government determines, for the public good, to take over the whole of the railways of the Union, there will be no question of purchase but simply a transfer of management. All trained and efficient employés will continue in their several stations; and probably their numbers will for some time be steadily increased in order that shorter hours of labor may be adopted and the safety of the public be better guaranteed.

"The first step towards an equitable transfer will be to ascertain, by an efficient and independent enquiry, the actual economic status of the shareholders of each line, dependent largely on the honesty and efficiency of its previous management. As a result of this enquiry the average annual dividends of each company or system which have been honestly earned while keeping up the permanent way and rolling-stock in good repair and thorough working order, would be ascertained. The amount of this average dividend would, thereafter, be paid to every shareholder in the

respective companies during their lives, and on their deaths would, except in special cases, revert to the railway department of the State for the benefit of the public.

"The exceptions would be, that in the case of all shareholders leaving families or dependents insufficiently provided for, the dividends would continue to be paid to the widow and to unmarried daughters for their lives, and to sons till they reached the age of twenty-one, so as to help towards their education and industrial training. But whenever the shareholder's property was above a certain amount, and producing sufficient income to support the family in reasonable comfort (which might perhaps be fixed at that of a high-class mechanic), then no such allowance would be made. Of course in a great number of cases where the shareholder was moderately wealthy, there would be no difficulty in drawing the line. In other cases it should be the rule to treat the families of shareholders liberally, so that in no case should actual poverty be caused by the cessation of the dividends."

Dr. Wallace was born into a Church of England family and was reared in that faith, but his investigations led him, as they led most of the great physical scientists of the nineteenth century, into agnosticism. Later, however, his attention was called to modern spiritualism. He investigated, as he investigated other subjects, carefully, patiently, rigidly, keeping his mind open to the truth, but with what prejudice he had against rather than in favor of the spiritualistic claims. At last, however, like Sir William Crookes, F. W. H. Myers, Dr. Richard Hodgson, Sir Oliver Lodge, Camille Flammarion, and many other of the profound scientific thinkers of the past century, he became convinced of the truth of the central claim of modern spiritualism, and despite the advice and remonstrances of his scientific friends, he boldly championed what he conceived to be demonstrated truth, his volume of "Miracles and Modern Spiritualism" being one of the ablest expositions of the spiritualistic philosophy that has appeared. Since the publication of this work the investigations of the English Society for Psychical Research have led many of Europe's greatest scientists, both physicists and psychologists, to ac-

ceptance of a belief not very different from that entertained by Dr. Wallace, though for many years his religious convictions made against him both with his scientific fellow-workers and the leaders of the religious world, who were, however, wont to seize upon his arguments in favor of immortality with great avidity when arguing on evolution with scientists.

His home life was as beautiful as his public career has been worthy and illustrious. He married some time after his return from the Malay Archipelago. No spot was so dear to him as his home. He naturally loved Nature and always strove to live in the country or where he could have ample land for flowers, shrubs and garden, and a fine view. "My gardening," he says, "has always been to me pure enjoyment."

Dr. Wallace lived to the ripe age of ninety, dying in 1913. Up to the last his mind was clear and vigorous and his hand busy. He was an uncompromising foe of militarism —as much so as are the Quakers. In this respect his life stands out in splendid relief from those small-souled but loud-mouthed mortals who delight in taking the lives of unoffending animals, who glory in the "big stick," and who take pride in war and great armaments, but who are strangely lacking in the supreme test of true bravery—moral courage that cannot be swerved from what one believes to be right. Alfred Russel Wallace's moral courage was only equaled by his hatred of war, the useless taking of life, and the inflicting of pain on others. He loved peace, he believed in human brotherhood, he worshiped toward the dawn, and his life was dominated by a love for justice, freedom, and fraternity.