

The Messiah Pulpit

**Alfred Russel Wallace:
Scientist and Prophet**

A Sermon

By

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Alfred Russel Wallace :

Scientist and Prophet

One week ago last Friday¹, there died in the city of London, at the ripe old age of ninety-one years, a man who must be regarded, I believe, as one of the greatest men of our day and generation, and one who will be rated by posterity, if I am not very much mistaken, as one of the really great men of all time. I refer of course to Mr. Alfred Russel Wallace, whose name must ever remain illustrious if for no other reason than that he was the co-discoverer with Charles Darwin of the doctrine of evolution through natural selection, which forms one of the most conspicuous of all landmarks in the history of human thought.

A certain sentimental interest attaches to the passing of this great man, first of all, because with him there disappears the last of that mighty breed of men with whose names the so-called Victorian Era of English history is inseparably and gloriously connected. The reign of Queen Victoria extended from 1837 to 1901—and it was in the memorable decades from 1850 to 1880 that there appeared that group of men who are unrivalled from the standpoint of genius and achievement, save only by that group of very different and yet equally distinguished men who appeared in the era of that greater monarch, if less noble woman, Queen Elizabeth. It fills one with

¹ November 7, 1913.

never-ending wonder and admiration just to run over the shining names of those who lived to the glory of England and of humanity during this great period. Thackeray, Dickens, George Eliot, Carlyle, Ruskin, Tennyson and Browning, in the field of literature—Gladstone, Disraeli, Bright, Cobden and Shaftesbury, in the field of statesmanship—Herbert Spencer, John Stuart Mill, James Martineau, Leslie Stephen, and Thomas H. Greene, in the field of philosophy—Darwin, Huxley, Lyell, Hooker, Lister, Galton, and Sir John Lubbock, in the field of science! Verily, verily, there were giants in those days!—and now they are all gone! Thackeray departed as early as 1859; Charles Darwin, the mightiest man among them all, in 1882; Herbert Spencer lingered on until 1903. During the last few years only Wallace has remained. Like some veteran of an era gone, who could tell great tales of

“ Old, forgotten, far-off things,
And battles long ago,”

he has been with us, to remind us that the Darwinian era is not yet become ancient history. And we cherished him as we cherished almost no other living man, because of his intimate association with these great events in the world of thought, all of which he saw and a part of which he was. But now his venerable and venerated figure has passed on with the rest, and the long line of giants who shook the world with their awful tread is ended; and we feel that indeed a new age, with a new breed of men, has come upon the world. The death of Wallace marks the last and belated hour of one of the greatest periods that the history of mankind has known.

But there is far more than a merely sentimental interest attached to the death of this aged man! It is true that Wallace was the lingering survivor of a period which itself was ended some years ago. What we know as the Victorian Era may be said to have come to a definite close on the day when the great Queen celebrated her Diamond Jubilee in 1897. Since that time new men have stepped to the centre of the stage, new issues have entered the arena of discussion, new movements have engaged the interest and allegiance of men, and new economic conditions have created a new literature, a new politics, and a new philosophy. It is doubtful, if the great Victorians of twenty and thirty years ago were they to return to-day to the faint "glimpses of the moon," would recognize the world. It is all new from beginning to end—the twentieth century is as far from the nineteenth as from the eighteenth, in thought if not in time!

Now it is easy, in the face of such revolutionary changes as these, to think of an aged man like Wallace, who had played his part in an epoch now definitely closed, as a mere survivor from the past into the present. His contemporary and close friend, Herbert Spencer, was undoubtedly such a survivor during the last six or eight years of his career. He was very plainly a man who had done his work, spoken his word, deposited his offering upon the altar of humanity, and now stood aside while the procession of life swept on. Nothing is more pitiful in Spencer's latter days than his strenuous endeavors to make the new generation listen to the gospel which had held the ears of their fathers, and the scornful indifference of the new England to everything that he had to teach. But not so was it with Wallace! More truly

than any other man of whom I have any knowledge, Alfred Russel Wallace kept pace with the advancing thought and onswEEPing life of the new age into which he saw himself carried. Never, even in his last days of weakness and declining health, could he be accurately described as a mere survival of a by-gone age. Never, even when his last comrade of earlier days had said farewell, could he be fairly pictured as "the last leaf upon the tree in the spring." His spirit moved with the movement of the times, and made him as much of an intellectual force in our age as in his own. New ideas he understood, new conditions he accepted, new movements he joined; and he dedicated to the active service of the new forces of the new age a degree of physical and mental vigor almost unexampled in one so far advanced in years. In 1907, when he was eighty-five years of age, he published his book on *Man's Place in the Universe*, which set the whole world talking anew on the problems of evolution. Three years later, in his eighty-eighth year, he wrote *The World of Life*, which was again a work of epoch-making significance. Only last spring, when he had already passed his ninety-first birthday, he published his *Social Environment and Moral Progress*, which constitutes one of the most radical and thorough-going discussions of the modern social question that has yet appeared. And now, on the occasion of his death, it is announced that up to within a very few days of the end, he had been busily engaged upon another and more extended work on the political and economic conditions of our times. Wallace was alive to the very end—he suffered not a moment of decay! As much of an intellectual power in his ninetieth as in his fortieth year, he stood to the very end as a leader and not a survivor, a force and

not a memory. Therefore do I say that his passing awakens in our hearts something more than a sentimental interest. I for one feel to-day as though I were mourning the death not of an aged patriarch, whom one could spare without vital loss, but of a man stricken as it were in his prime, whose place cannot possibly be filled.

Wallace first came into world-wide prominence in the year 1858, when his name became associated with that of Darwin as the discoverer of the theory of evolution through natural selection. I always love to tell the tale of this remarkable episode even at the risk of repetition—first, because it is unquestionably the most dramatic incident in the whole history of human thought, and secondly because it constitutes so wonderful a revelation of the characters of the two men who were involved.

It was while observing various forms of plant and animal life, on his five-year voyage around the world on H. M. S. *Beagle*, that Charles Darwin became convinced that all current explanations of the origin and development of earthly life were false. Immediately upon his return to England in 1836, he set himself consciously to work at what he knew to be the life-task of investigating this stupendous biological question. For twenty years, he worked at the problem with a degree of patience and persistence that almost surpasses our comprehension. He collected facts and observations bearing on the question so abundant as to be almost impossible of enumeration; and he made experiments with seeds and full-grown flowers, with sea urchins and pigeons, so numerous as to be bewildering in their variety. And always he came nearer to the positive demon-

stration of the great truth which had already dawned upon his mind on his voyage in the *Beagle* that the various forms of earthly life had originated not by the process of special creation by the hand of God, but by the process of "descent with modifications"—in other words, of evolution through natural selection. He worked all alone, confiding his secret to only three men, his dear friends and fellow-scientists, Joseph Hooker, Sir Charles Lyell and Asa Gray. All three were sceptical; especially Lyell, the most eminent scientist of his time, who was convinced that Darwin was investigating a mare's nest. Still the solitary student worked on with sure confidence and gentle patience, and with no other purpose in his heart than to find the truth; and determined to make no announcement to the world until his theories were fully established by the facts.

Now during this same fateful period when Darwin was working away at his great problem, there departed from England to the far-distant Malay peninsula, a young naturalist, Alfred Russel Wallace by name, who was known to Darwin through friendship as well as through community of scientific interest. For many years, Wallace remained hidden away in this remote portion of the earth's surface, studying various forms of animal life as Darwin had studied them on the *Beagle* and later in his private laboratory at Down. And here Wallace went through the same experience that Darwin had undergone of becoming convinced that the origin of species had not yet been satisfactorily explained; and here he gave himself to the same task that Darwin had undertaken of finding out what the true explanation really was. Year after year he toiled at the problem, as ignorant of what Darwin was doing as Darwin was ignorant of what he

himself was doing; and at last, in the year 1858, he suddenly hit upon what he was convinced was the solution of the problem. Immediately he set down his theory in a brief essay or treatise, supported it by such a statement of the facts as the narrow compass of his paper would permit, and then of all things in the world—sent his manuscript to Charles Darwin! And when Darwin opened his friend's communication and read his article, he discovered, to his unbounded astonishment, that Wallace had outlined a theory, identical not only in idea, but in many cases even in phrasing, with that upon which he had been working for an entire generation. Neither man had known what the other man had been doing, and yet both had discovered the same problem, isolated the same facts, and worked out the same conclusion. Wallace's paper, says Darwin in his *Autobiography*, was so similar in all of its features to his own sketches of his work, that "had Wallace my manuscripts before him he could not have made a better short abstract."

The dramatic character of this discovery of the theory of natural selection at the same moment, by men working absolutely independently of one another, and at opposite poles of the earth's surface, has never been exceeded, I believe, in all the progress of human thought. It remains, and in all probability will ever remain, as the most astonishing coincidence in history. But more remarkable even than the episode itself, was the way in which it was handled by the two men immediately concerned. Imagine the feelings of Darwin as he read the paper of his rival, and found that the labors of a life-time had to all appearances been undone! Imagine the sensation of Wallace when he learned that he had sent his paper to the one man in all the world who had anticipated his theory

and foreseen his conclusions. Never has there been more absolute contemporaneity in the discovery of new truth, and never therefore more promising conditions for endless jealousy and strife. But never, as a matter of fact, did two men maintain an attitude toward one another which was more ideal. It was a two-fold incarnation of magnanimity, generosity and self-abnegation. On receiving Wallace's treatise, Darwin resolved at once to publish his colleague's discovery without any comment of his own, and silently abandon his uninterrupted labors of more than a score of years; and it was only on the earnest solicitation of his two friends, Hooker and Lyell, who alone knew the real facts of the entire situation, that he was persuaded to print with Wallace's essay a paper of his own which had been written as early as 1842. Then in the *Origin of Species*, which was published thirteen months after the joint presentation before the Linnean Society of the two papers to which I have just referred, and in all the later volumes in which he did more than any other one man to establish the truth of the doctrine which he had so early conceived, Darwin took particular pains to include Wallace in all the credit which belonged to his achievement, and to defer to him as a co-authority with himself in the proclamation of this new scientific gospel. And the attitude of Wallace was even more remarkable. It may perhaps be said that it was easy for Darwin to be generous when, in spite of his own magnanimous efforts on Wallace's behalf, practically all of the chorus of the world's praise was showered upon him, and the new doctrine became known to all future time by his name alone. But if this be true, it is certainly true to an exactly corresponding extent, that it was hard for Wallace to remain unperturbed and sweet-tempered when

he saw practically all the fruit of his laborious sowing successfully reaped by another man. And yet, throughout all his lengthy career he never betrayed the slightest trace of jealousy, resentment, or even disappointment. He always declared that Darwin was the real discoverer of the modern theory of evolution. He always declared—what was undoubtedly true—that, even though he had reached the same conclusion as Darwin unaided and alone, yet he could never have duplicated the abundance of knowledge, the wealth of illustration, and the elaboration of argument which made *The Origin of Species* one of the great books of the world, and that Darwin was therefore rightly entitled to all the honor and fame which had been granted him. He accepted with cheerfulness the word “Darwinism” to describe the theory which he had independently discovered, and even went so far as to choose this term for the title of his most elaborate work upon the subject. So long as Darwin lived, he was his loyal and devoted friend; and in the thirty years that intervened between Darwin’s death and his own, there was no man who did more to magnify Darwin’s memory, or who more eagerly sprang to the defence of his life-work whenever it was called into question. One may search the history of mankind in vain for anything more noble and more generous than the relation of these two men. Brought face to face with a condition which again and again has turned the truest men into bitter foes and contending rivals, Darwin and Wallace clasped hands as comrades and allies, and lived for thirty years as another David and Jonathan. It is unfair, I feel, to credit either man with the larger share of generosity and goodwill, for who shall measure the sentiments and motives of the heart? But if it must be asked as to which man met

the severer test and won the braver fight, I should not hesitate to give the larger meed of praise to the one who lost practically everything to his rival, and yet permitted no drop of moral poison to enter the well-springs of his heart.

Aside from this one dramatic episode of Wallace's discovery of what is now universally known as "Darwinism," there are just two phases of his work to which I desire to call your special attention this morning—first because these two matters constitute Wallace's distinctive contribution as a scientific thinker to the field of evolution; and second because these matters, as it so happens, take us out into the larger fields of moral and spiritual life wherein Wallace appears not so much as a scientist as he does a prophet. The first of the two important phases of Wallace's work, to which I refer, is his life-long insistence upon interpreting the evolutionary process in terms of the handiwork of God. When the Darwinian theory was first given to the world, the antithesis between the old theory of creation and the new theory of natural selection was so sharply presented that it was immediately assumed that the doctrine of evolution meant the end of religion. To accept Darwinism was equivalent to denying God! And there were some evolutionists, notably Ernest Haeckel, who declared in open fashion that the hypothesis of God was henceforth unnecessary as an explanation of the world and its abounding life. We now know, said Haeckel and those like him, that God has no more part in the life of the world, slowly evolving through centuries and æons of time, than he has in the life of the flower, quickly springing and dying in a single summer. Here in this seed, which we plant in the earth, is a little particle of matter, and in the heart of this matter there

is a little spark of energy or force. Now given this particle of substance together with its resident spark of life, and we have all the elements that are necessary to explain the origin and growth of the flower. And just so is it, Haeckel argued, with the world itself. Resident with the substance of the fire-mist, in the beginning of things, were little centres or knots of energy; and the unending interaction between the atoms of matter upon the one hand and the knots of energy upon the other, controlled by the unvarying operation of natural laws, has produced all that we see about us in such infinite variety at the present moment, from the meanest worm in the earth to the keenest brain and the kindest heart in human form. God, therefore, is unnecessary. The evolutionary process, as here explained at least, can get along from first to last without him.

Not all the evolutionists, of course, agreed with Prof. Haeckel in this extreme atheistic or materialistic position. Huxley, for example, always took the frankly agnostic attitude, asserting that the whole question of the origin of life lay beyond the limits of human knowledge, and that therefore it was impossible for science to determine whether God was a living reality or not. "The doctrine of evolution," he said, "is neither theistic nor anti-theistic. It simply has no more to do with theism than the first book of Euclid has." Darwin went a little farther by asserting that "the theory of evolution is quite compatible with the belief in God." But he frankly confessed himself troubled by this problem of God, and never attempted so far as I know, to work out the relation of compatibility between the two ideas which he declared to be possible. Spencer perhaps went the farthest of all by laying down as one of the "first principles"

of his philosophy "that an infinite and eternal Power" certainly exists behind the world of matter and is "manifested to us through all phenomena." But when he came to define the meaning of this "Ultimate Cause," the positive existence of which he defined as "a necessary datum of consciousness," he was forced to admit that "its nature transcends intention and is beyond imagination," and that it must therefore ever remain "inscrutable" and "unknowable." Few of these men, therefore, as I have said, went as far as Haeckel in his denial of God.—But still it must be admitted that the whole trend of the argument for evolution was unfavorable to the theistic idea, at least in its popular religious sense, and that there was excellent reason for the contention that the new doctrine of life was essentially materialistic rather than spiritualistic in its character.

Now it is just here that Mr. Wallace marks himself out from all the great evolutionary scientists of the nineteenth century, by his steadfast insistence upon the proposition that the idea of God is not only compatible with the doctrines of evolution but is absolutely essential to the integrity of that doctrine, and by his luminous interpretation of God not in the pale negations of Herbert Spencer, but in the warm and vital terms of personality which are characteristic of the vocabulary of religion. Wallace declared from the very start of his work that he was neither an atheist nor an agnostic, but a theist—and a theist because of the fact, and not in spite of the fact, that he was an evolutionist.

Nothing is more interesting than the way in which Wallace studied the myriad phenomena of the evolutionary process and demonstrated how all of these led straight to the conception of God as their only ade-

quate cause and explanation. First of all he takes up Haeckel's solution of the riddle of the universe, and shows how in reality this is no solution at all. It is all right, he says, to trace back the origin of life to a primitive atom of matter worked upon by a primitive spark of energy. But how can you stop here without asking the further question as to the origin of this primitive substance upon the one hand, and of this primitive force upon the other? And what is the nature of these originative particles of life, that out of them, as a great river from a hidden spring, there should pour the vast river of life which we see about us at the present moment. What Haeckel has done, says Wallace, is simply to substitute one riddle for another and thus actually to remove us farther than ever from the solution of the problem by turning our attention away from the myriad forms of life, which we can see and touch and feel and thus study at first-hand for ourselves, and bidding us examine a primitive atom of matter and a primitive spark of energy which must ever remain as mysterious as they are imaginary and supposititious!

The only way to get at the question of the origin and meaning of life, according to Wallace, is to study natural phenomena in their present stage of development—and it is his work along these lines which leads him straight to the idea of God. He examines the mystery of the living cell which is the unit of structure in the physical organism; he ponders the nature of growth, by which every species of life unfolds from a minute cell of protoplasm to a highly complex form, closely resembling the seed or stem or parent from which it sprang; he examines the almost miraculous structure of the feathers of birds and the wings of butterflies, the marvellous transformations from form to form of the

higher insects, the highly elaborated mechanism of the wing-scales of the Lepidoptera; he works out the innumerable adaptations in the world of nature between organs and organisms, between organisms and environment, between all the myriad forms of plants and animals on the one side and man with his peculiar needs and purposes upon the other; and as a result of all his studies in these and other directions, he comes to the sweeping conclusion, which he outlines so clearly at the opening of his book on *The World of Life*, that in all and through all and over all there must be an "organizing and directive Life-Principle."—"I argue," he says, "that these phenomena necessarily imply first, a Creative Power, which so constituted matter as to render these marvels possible; next, a Directive Mind, which is demanded at every step of the process we term growth; and lastly, an Ultimate Purpose in the very existence of the whole vast life-world in all its long course of evolution throughout the æons of geological time." All of which means, in simple phrase, that Wallace, as a result of his studies of evolution, found himself forced to believe in God as the only adequate explanation and source of the phenomena of the natural world.

But it was not so much in nature as in human nature,—not so much in the universe as in man—that Wallace found what he regarded as the clearest evidences of the divine reality. The almost universal answer which was given by the evolutionists of forty years ago to the question as to the origin of man was that laid down by Charles Darwin with such convincing power in his great book on *The Descent of Man*. Here it is argued that man, with all his powers and attributes, has naturally descended, by a gradual process of modification and development, from the

animal creation. His physical structure, his intellectual faculties, his moral nature, all have been derived from their rudiments in the lower animals, and have reached their present stage of development under the operation of the great law of variation and natural selection. Man, in other words, is all of a piece with the universe in which he dwells; and we need no other explanation of his present high estate than that which we offer in the case of the flower or the monkey.

Now with this answer to the great question as to the origin of man, Wallace confesses himself utterly dissatisfied. He agrees with Darwin's conclusion as to the essential identity of man's bodily structure with that of the higher mammalia, but he denies most emphatically that what is true of his body is also true of his mind and of his soul. Granted that the rudiments of most, if not all, the mental and moral faculties of man can be detected in some animals—this is very far from proving, what it is necessary to prove, says Wallace, that these rudimentary attributes could be developed, by any such process as that of natural selection, into the wonderful spiritual realities which characterize the soul of the civilized man. Here is the mathematical faculty, which is almost totally absent in the savage yet has undergone wonderful development in recent times—here are the musical and artistic faculties, which are so peculiarly characteristic of a high stage of social and intellectual advancement—here are “the constancy of the martyr, the unselfishness of the philanthropist, the devotion of the patriot, the enthusiasm of the reformer, the resolute and persevering search of the scientists after nature's secrets!” How are you going to explain the development of these exalted attributes of the human

spirit, asks Wallace, by any such law as that of natural selection on the basis of fitness to survive in the struggle for existence? What possible relation can these successive stages of improvement "have had to the life or death of their possessors, to the struggles of tribe with tribe, or nation with nation, or to the ultimate survival of one race and extinction of another?" The fact of the matter is, says Wallace, there is no factor in all the natural process of evolutionary development which is adequate to explain these mental and moral faculties of man. "The love of truth, the delight in beauty, the passion for justice, the thrill of exultation with which we hear of any act of courageous self-sacrifice"—these things are spiritual, and cannot have been developed by means of the struggle for material existence. Some "new cause," as Wallace puts it, which is adequate to produce the result attained, must be introduced into the evolutionary process, in order to explain the great fact of man; and this adequate cause, he declares, can only be found "in the unseen universe of Spirit." Man, in the last analysis, is not material but spiritual; he is not an organism but a personality, he is not a brute but a living soul. And the only thing that can explain the origin upon the earth of this extraordinary phenomenon is "the influx" into the evolutionary process, at some fateful moment of the past, "of some portion of the spirit of Deity." Man, in other words, is only explained and justified and understood when he is described as "the child of God!"

Right here now do we have Wallace's first great contribution to the doctrine of evolution—his interpretation of the familiar facts of nature and of human nature in terms of theism, as contrasted with atheism or agnosticism. Alone among his contemporaries

he insisted that the idea of God was necessary to the understanding of evolution—or, to put it as Wallace himself expressed it, that the study of the world of life, from the evolutionary point of view, led inevitably to the conclusion that the universe in all its parts was “a manifestation of Creative Power, Directive Mind, and Ultimate Purpose”—in other words, of God! Some of us may question certain portions of Wallace’s theistic argument. I believe that he went too far, for example, in the direction of the old theological argument from design; and I am tempted also to think that, if he had given place in his theory of evolution, as did Spencer, to other factors than that of natural selection, he might have found that man and the animals were more closely united on the mental and moral side than he imagined, and thus seen that the whole realm of nature, and not merely the small segment of human nature, is a product of “the influx” of Deity into the universe. Some of us may think as well that Wallace’s particular theistic interpretation of evolution is bound to be superseded, sooner or later, by some such theory as that of Bergson, which is now focusing the attention of the world. But, however we may differ with him on details, there is no one of us who must not pay tribute to the inestimable service which he rendered to the world of thought by insisting, in an age of denial and of doubt, on interpreting evolution in terms of the creative handiwork of God, and thus starting that reconciliation of science and religion which has fortunately become so far advanced in our times. We shall long differ in our detailed interpretations of this great question of evolution, but some day we are going to think it through to the end, and reach some definite and final conclusions.

And when that time comes, I venture to prophesy that we shall find ourselves standing not with Haeckel in his monism, nor yet with Spencer and Huxley in their agnosticism, but with Wallace in his theism. Alone among all the great men of his time, he saw in the process of evolution a supreme manifestation of the mind and will of God, and thus, by his own prevision, anticipated the final judgment of mankind.

But I must hurry on, without further delay, to the second of these ideas which I defined some few moments ago as Wallace's two great and unique contributions to the doctrine of evolution. Thus far we have been talking about the question of God; now in our discussion of this second theme, we turn more particularly to the question of man.

In the year 1864, Mr. Wallace published a notable paper in the *Anthropological Review*, in which he pointed out that, with the advent upon the earth of man, with his marvellous mental and moral faculties, to which we have just been referring, a wholly new element was introduced into the problem of natural selection. Nay more!—man was so different in all his attributes and powers from all the animals which had preceded him and now surrounded him, that he practically made the process of evolution a wholly different thing from what it had ever been before. All other creatures in the organic world were utterly and indeed helplessly dependent upon the environment in which they lived. The whole problem of existence for them was simply that of adaptation to the changing conditions of this environment. Every living organism in all the world succeeded in surviving and propagating its kind only as it succeeded in moulding and remoulding its bodily form and

structure, both external and internal, in strict adaptation to the successive changes in the surrounding world. In all these cases, the environment changed the living creatures, but the creatures in turn had very little effect upon the environment.

Now this condition of things was absolutely reversed, said Wallace, in this paper to which I have referred when man came upon the scene. Unlike all of his animal progenitors, man was dowered with certain remarkable mental and moral qualities; and these qualities enabled him, of all living creatures upon the earth, to solve the problem of survival, or adaptation to the environment, not by changing himself to suit the environment, but by changing the environment to suit himself! No longer was it necessary for him, as for the brutes, to undergo changes in his physical form and structure, in order to adapt himself to the changing conditions of the world. He was possessed with a wholly new force—namely, intellect or mind—and with this he could conquer nature, and make her serve his own particular purposes and needs. It was mind which gave him clothing to protect his body from the cold, a home to shelter his head from the storm, a fire to warm his limbs and cook his food, weapons to slay the deer and fight the lion. “From the moment,” says Wallace, “when the first skin was used as a covering, when the first rude spear was formed to assist him in the chase, when fire was first used to cook his food, when the first seed was sown or shoot planted, a grand revolution was effected in nature—a revolution which in all previous ages of the earth’s history had had no parallel. A being had arisen who was no longer subject to the physical universe—a being who was in some degree superior to nature, inasmuch as he knew how to control and regu-

late her action by means of his vast superiority of mind." Man, in other words, through "the influx of the divine spirit," as Wallace explains it, had become the master of the world in which he lived. The universe, in both its natural and social aspects, was his to do with as he saw fit; and that man, and that race of men, would surely survive in the struggle for existence, which succeeded in creating an environment most favorable to the development of the best physical, mental, and moral qualities of humanity.

This idea of man's control over his environment—so familiar in our day, but utterly unknown in its evolutionary aspects at least, until Wallace discovered and announced it in 1864—was in itself a very great contribution to the world's thought; but it was even more significant from the standpoint of the results which it produced. In working out his idea, which Wallace did in every case with great thoroughness, he was naturally led, in course of time, to a study not merely of man's natural environment, but of his social environment as well—and it is this fact which explains that enthusiastic and uncompromising championship of Socialism, which stands out as the one most conspicuous and remarkable feature of Wallace's old age. What kind of an environment is man creating for himself, asked Wallace, in the society of which he is a member—in the community of which he is a citizen? And when he sought out the facts in this field, as he had previously sought them out in the biological field, he lifted a cry of horror and alarm which reverberated from one end of the western world to the other—he issued an appeal to men to arise in their might, and use the divine powers which God had given them to remake the organization of society, which is only just now beginning to be answered—and,

best of all, he pointed out, on the basis of his investigation of the facts, what he believed to be the changes in the social order which must be effected as the conditions of natural and racial survival.

The best presentation of his social views which Wallace ever gave to the world is that contained in his last book, *Social Environment and Moral Progress*, which was written in his ninety-first year. This book is first of all a scientific presentation of the biological principle of man's control over environment, through the powers of mind, which I have just been describing. Secondly, it is a scientific study of the facts regarding the social conditions of our time, and as such is the most fearful arraignment of our existing civilization which I believe has ever been printed. Wallace speaks of the unsanitary dwellings in which people live and the life-destroying trades in which they work—he denounces child-labor, white slavery, the liquor-traffic, and war—he points out the dishonesty of our commercial life and the injustice of our administration of law—he exposes the horrors of poverty and disease, and the increasing moral degradation of our times. And summing up his indictment of our society in one sweeping and awful judgment, he declares, "Taking account of all these undoubted facts, many of which are so gross, so terrible, that they cannot be overstated, it is not too much to say that our whole system of society is rotten from top to bottom, and the social environment as a whole, the worst that the world has ever seen."

We do not have to agree with the whole of this terrific indictment, in order to marvel at this wonderful old man, who, in the full possession of his bodily and mental powers, and in perfect mastery of his great knowledge and surpassing scientific attainments,

in his ninety-first year, reads thus his indictment of his age and, like a later prophet of a greater Israel, cries down upon his people the woes of God. And our admiration, I venture to say, is deepened and increased, when we see that, unlike most old men, he is not satisfied merely to denounce, but moves on, like the youthful scientist of other days in another field, to solve the problem which has been raised by the facts which he has observed. It is the discussion of this question of what to do, of "how to initiate an era of moral progress," as he puts it, which constitutes the third and concluding section of this wonderful volume. The causes of our evils and their attendant remedies he formulates in four tremendous statements:

(1) "Our ills are due," he says first, "to our living under a system of universal competition for the means of existence—the remedy for which is equally universal co-operation."

(2) "Ours may also be defined as a system of economic antagonism, the remedy for which is a system of economic brotherhood."

(3) "Thirdly, our system is one of monopoly by a few of all the means of existence—the remedy for which is freedom of access to land and capital for all."

(4) "And lastly, our system may be defined as social injustice, where the few are allowed to inherit the stored-up wealth of all preceding generations, while the many inherit nothing—the remedy for which is universal inheritance by the State in trust for the whole community."

This plainly enough is Socialism of the most pronounced kind; and it is not surprising to those who know Wallace's career as a scientist in the early days of Darwinism, that he was never afraid of the name.

Here, now, is Wallace's second great contribution to

the world of thought—his discovery of the ability of man, alone among all living creatures, to solve the problem of survival by changing the environment instead of changing himself, and his application of this discovery to the problems presented by the unjust social conditions of modern life. And here, I believe, in his thought of man and society, he rendered a service very similar in character to that which he rendered in his thought of God and the universe. For long years, we were taught to believe that the doctrine of natural selection, through the survival of the fittest, meant that, in the human world, as in the animal realm, struggle, competition, conflict, must be the law of life—that each man in society, like each lion in the jungle, must fight his fellow, and win or lose as his strength or weakness should determine. From this standpoint evolution seemed to spell the end of the gospel of love, just as, in the theological field, it seemed to spell the end of the idea of God. But here again, Wallace comes to our rescue. Again he distinguishes man from the brute, and on the basis of this distinction declares, that the law of natural selection, for man at least, must be reversed. The source of all our ills, he says, is to be found in the fact that we have been introducing into these human lives of ours the law of tooth and claw. This now must end. Evolution for man, if not for the tiger, means friendship, co-operation, brotherhood. Just as the idea of God is necessary to the theory of evolution, so, said Wallace, is the idea of love necessary to its practise.

Here, now, in these two companion doctrines of God and of man, do we have the distinctive work of Wallace in the field of science. More truly than any other man of his time he showed the place that God must hold in the evolution of nature, and the work that man must

do, as the child of God, in the evolution of society. And now perhaps you see, at the very close, why I have called Alfred Russel Wallace not merely scientist but prophet. Prophet he surely was—a prophet of God to an age of materialism, and prophet of love to an age of hate!

Some weeks ago, I stood in the great nave of Westminster Abbey, and there in the shadows of a rainy afternoon, looked down upon the grave of Darwin. At the left was the tomb of Sir Isaac Newton; at the right the tombs of Sir William Herschel and Lord Kelvin. Here, in a space so small that I could bound it with a single sweep of my cane, was the dust of four of the world's greatest scientists. As I think of that sacred spot at this solemn time, I find myself wishing that the body of Wallace might be deposited therein. I would have him lie within the Abbey, because he was a brave and true prophet of God and of the soul; I would have him lie with the four great men already there, because he was a fifth who was as great; and I would have him lie with Darwin, because he loved him, and I know would gladly be with him in death even as he was in life. I have seen no announcement that the Abbey is to receive Wallace's ashes—and perhaps we need not care. For wherever they may lie, the ground will be forever holy, and the grave a shrine to pilgrim feet.