THE CONFESSIONS OF A GREAT SCIENTIST

Alfred Russell Wallace, one of the greatest living biologists of the world, is very frank about his own defects and deficiencies. He lacks physical courage, for one thing. He is disinclined to much exertion, either mental or physical, for another thing. He has difficulty in finding the words he wants to use in verbal argument or conversation. He is shy, reticent, delicate, and lacking in self-confidence. All these things and a great many more he tells us very simply and very frankly in his autobiography, just published.* The secret of his success in life, achieved despite these and other defects, is, he thinks, his facility for correct reasoning. In reasoning upon the phenomena of nature he has felt able to hold his own with Lyell, Huxley, and Darwin, despite his inferiority to them in knowledge and in the powers of concentration. This power of correct reasoning and of drawing independent conclusions was, he thinks, somewhat marked even at the early age of five, when the shape of his head showed but a moderate development of the faculties of form and individuality, while locality, ideality, color, and comparison were decidedly stronger.

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IN 1848

This was the year during which Alfred Russell Wallace sailed on the voyage to the Amazon from which results of such great importance to science were achieved.

Wallace's father seems, from his son's account, to have been a thriftless gentleman of the old school, improvidently married, and the educational advantages of the future scientist were relatively limited. He was flogged to some extent into a rudimentary knowledge of Latin, but he never could learn Greek and there was not even a pretense of instilling into him that which in this century would be recognized as true science in any shape or form. Wallace leaves us with rather painful impressions of his school experience:

"Next to Latin grammar the most painful subject I learned was geography, which ought to have been the most interesting. It consisted almost entirely in learning by heart the names of the chief towns, rivers, and mountains of the various countries from, I think, Pinnock's 'School Geography,' which gave the minimum of useful or interesting information. It was something like learning the multiplication table both in the painfulness of the process and the permanence of the results. The incessant grinding in both, week after week and year after year, resulted in my knowing both the product of any two numbers up to twelve, and the chief towns of any English county so thoroughly that the result was automatic, and the name of Staffordshire brought into my memory Stafford, Litchfield, Leek, as surely and rapidly as eight times seven brought fifty-six. The labor and mental effort to one who like myself had little verbal memory was very painful, and though the result has been a somewhat useful acquisition during life, I can not think but that the same amount of mental exertion wisely directed might have produced far greater and more generally useful results. When I had to learn the chief towns of the provinces of Poland, Russia, Asia Minor, and other parts of Western Asia, with their almost unpronounceable names, I dreaded the approaching hour, as I was sure to be kept in for inability to repeat them, and it was sometimes only by several repetitions that I could attain even an approximate knowledge of them. No interesting facts were ever given in connection with these names, no accounts of the country by travelers were ever read, no good maps ever given us, nothing but the horrid stream of unintelligible place-names, to be learned in their due order as belonging to a certain country.

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IN 1869

At this time Wallace was achieving new fame by his work in biology, or the relation of animal life to the world around it

"History was very little better, being largely a matter of learning by heart names and dates, and reading the very baldest account of the doings of kings and queens, of wars, rebellions and conquests. Whatever little knowledge of history I have ever acquired has been derived more from Shakespeare's plays and from good historical novels than from anything I learned at school."

Necessity drove Wallace into the profession of surveying, at which he did fairly well, but he disliked the devious business methods he found in vogue. He was then a well-grown youth, practically a young man, roving about England and Wales in the practice of his profession. He would have enjoyed the society of the people he met but for his excessive shyness. Then, too, his clothes, besides being

*MY LIFE. By Alfred Russell Wallace. In two volumes. Dodd, Mead & Company.

shabby, were rather too small for him—eloquent evidence of the poverty that pinched him all through life until a government pension late in his career removed all occasion for financial anxiety.

The event which formed a turning-point in the life of Wallace was the formation of an acquaintance through which he derived a taste for the wonders of insect life, opening up to him a new aspect of nature. That led him to a journey along the Amazon, which proved the foundation of his scientific career. In that career, as we have already seen, the chief factor of success was his quickness in detecting false reasoning, a faculty to which Huxley paid tribute. But the two qualities which determined the use to which he has put his powers of reasoning are those which are usually termed emotional or moral—namely, intense appreciation of the beauty, harmony and variety in nature and in all natural phenomena, and an equally strong passion for justice as between man and man. To this latter passion is to be attributed the fact that in addition to being one of the half-dozen most eminent scientists of Europe, he is to-day a Socialist, an anti-vaccinator, and, to a considerable degree, a philosophical anarchist. He is also a warm admirer of Byron, because, as he thinks, "Byron fought only for freedom and felt scorn and contempt for the majority of English landlords, who subordinated all ideas of justice or humanity to the keeping up of their rents."

Continuing his own portrait, Wallace tells us that he lacks an ear for music, though he is deeply affected by grand, pathetic, or religious music. He says further:

"Another and more serious defect is in verbal memory, which, combined with the inability to reproduce vocal sounds, has rendered the acquirement of all foreign languages very difficult and distasteful. This, with my very imperfect school training, added to my shyness and want of confidence, must have caused me to appear a very dull, ignorant, and uneducated person to numbers of chance acquaintances. This deficiency has also put me at a great disadvantage as a public speaker. I can rarely find the right word or expression to enforce or illustrate my argument, and constantly feel the same difficulty in private conversation. In writing it is not so injurious, for when I have time for deliberate thought I can generally express myself with tolerable clearness and accuracy. I think, too, that the absence of the flow of words which so many writers possess has caused me to avoid that extreme diffuseness and verbosity which is so great a fault in many scientific and philosophical works.

"Another important defect is in the power of rapidly seeing analogies or hidden resemblances and incongruities, a deficiency which, in combination with that of language, has produced the total absence of wit or humor, paradox or brilliancy, in my writings, although no one can enjoy and admire these qualities more than I do. The rhythm and pathos, as well as the inimitable puns of Hood, were the delight of my youth, as are the more recondite and fantastic humour of Mark Twain and Lewis Carroll in my old age. The faculty which gives to its possessor wit or humour is also essential to the high mathematician, who is almost always witty or poetical as well; and I was therefore debarred from any hope of success in this direction; while my very limited power of drawing or perception of the intricacies of form were equally antagonistic to much progress as an artist or a geometrician.

"Other deficiencies of great influence in my life have been my want of assertiveness and of physical courage, which, combined with delicacy of the nervous system and of bodily constitution, and a general disinclination to much exertion, physical or mental, have caused that shyness, reticence, and love of solitude which, though often misunderstood and leading to unpleasant results, have, perhaps, on the whole, been beneficial to me. They have helped to give me those long periods, both at home and abroad, when, alone and surrounded only by wild nature and uncultured man, I could ponder at leisure on the various matters that interested me."

Wallace is one of the three great English scientists—Sir Oliver Lodge and Sir William Crookes being the other two—to whom spiritualists point as giving scientific indorsement to the claims made regarding the reality of psychic or spiritistic phenomena. In his autobiography, Dr. Wallace devotes considerable space to his experiences with "ghosts." He was one of the scientists who attended that series of séances presided over by Miss Kate Cook, sister of a medium through whom Sir William Crookes obtained such striking results.

More interesting, however, than Miss Cook's séances were those with Mr. Haxby, a young man employed in the post-office and pronounced by Dr. Wallace a remarkable medium for materializations:

"He was a small man, and sat in a small drawing room on the first floor, separated by curtains from a larger one, where the visitors sat in a subdued light. After a few minutes, from between the curtains would come a tall and stately East Indian figure in white robes, a rich waist band, sandals, and large turban, snowy white, and disposed with perfect elegance. Sometimes this figure would walk round the room, outside the circle, would lift up a large and very heavy musical box, which he would wind up and swing round his head with one hand. He would often come to each of us in succession, bow, and allow us to feel his hands and examine his robes. We asked him to stand against the door post and marked his height, and on one occasion Mr.

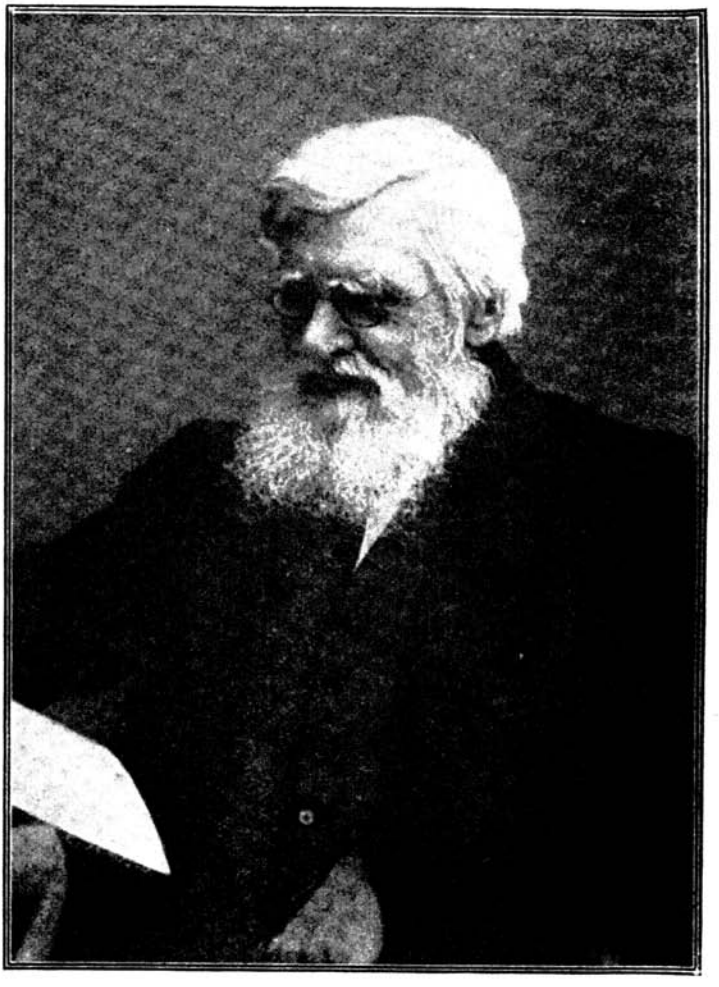
Hensleigh Wedgwood brought with him a shoemaker's measuring rule, and at our request Abdullah, as he gave his name, took off his sandals, placed his foot on a chair and allowed it to be accurately measured with the sliding rule. After the séance, Mr. Haxby removed his boot and had his foot measured by the same rule, when that of the figure was found to be one full inch and a quarter the longer, while in height it was about half a foot taller. A minute or two after Abdullah had retired into the small room, Haxby was found in a trance in his chair, while no trace of the white-robed stranger was to be seen. The door and window of the back room were securely fastened and often secured with gummed paper which was found intact."

On another occasion Dr. Wallace was present in a private house when a very similar figure appeared with a medium known as Eglinton before a large party of spiritualists and inquirers:

"In this case the conditions were even more stringent and the result absolutely conclusive. A corner of the room had a curtain hung across it, enclosing a space just large enough to hold a chair for the medium. I and others examined this corner and found the walls solid and the carpet nailed down. The medium on arrival came at once into the room, and after a short period of introductions seated himself in the corner. There was a lighted gas-chandelier in the room, which was turned down so as just to permit us to see each other. The figure, beautifully robed, passed round the room, allowed himself to be touched, his robes, hands and feet examined closely by all present —I think sixteen or eighteen persons. Every one was delighted, but to make the séance a test one, several of the medium's friends begged him to allow himself to be searched so that the result might be published. After some difficulty he was persuaded, and four persons were appointed to make the examination. Immediately two of these led him into a bedroom, while I and a friend who had come with me closely examined the chair, floor, and walls, and were able to declare that nothing so large as a glove had been left. We then joined the other two in the bedroom, and as Eglinton took off his clothes each article was passed through our hands, down to underclothing and socks, so that we could positively declare that not a single article besides his own clothes was found upon him."

Yet one more case of what he calls "materialization" is given by Dr. Wallace. It was even more remarkable in some respects than those already recorded. It seems that a Mr. Monk, a clergyman of some evangelical denomination, was a remarkable medium, and in order to be able to examine the phenomena carefully and to preserve the medium from the injury often caused by repeated miscellaneous séances, four gentlemen secured his exclusive services for a year. In view of his eminence as a biologist and on account of the weight his evidence would carry with a skeptical public, Dr. Wallace was invited to attend a séance and note the phenomena. He tells us this of what he saw:

"It was a bright summer afternoon, and everything happened in the full light of day. After a



little conversation, Monk, who was dressed in the usual clerical black, appeared to go into a trance; then stood up a few feet in front of us, and after a little while pointed to his side, saying, 'Look.' We saw there a faint white patch on his coat on the left side. This grew brighter, then seemed to flicker, and extended both upwards and downwards, till very gradually it formed a cloudy pillar extending from his shoulder to his feet and close to his body. Then he shifted himself a little sideways, the cloudy figure standing still, but appearing joined to him by a cloudy band at the height at which it had first begun to form. Then, after a few minutes more, Monk again said 'Look,' and passed his hand through the connecting band, severing it. He and the figure then moved away from each other till they were about five or six feet apart. The figure had now assumed the appearance of a thickly draped female form, with arms and hands just visible. Monk looked towards it and again said to us 'Look,' and then clapped his hands. On which the figure put out her hands, clapped them as he had done, and we all distinctly heard her clap following his, but fainter. The figure then moved slowly back to him, grew fainter and shorter, and was apparently absorbed into his body as it had grown out of it."

Such a narration as this, Dr. Wallace admits, must seem to those who know nothing of the phenomena that gradually led up to it mere midsummer madness. "But to those who have for years obtained positive knowledge of a great variety of facts equally strange, this is only the culminating point of a long series of phenomena, all antecedently incredible to the people who talk so confidently of the laws of nature."