

he emphatically is to vaccination, enforced or voluntary, to interest on money, to all inheritance and testamentary disposition of property. He scorns as utterly uncritical the modern scientific determinations of centres of psychical function in the cortex of the brain—not merely the work of Flourens, but also the later attempts of Broca, Munk, and others; and in this he is not so very far from the general opinion of students of the subject, who have at the most yielded but a hesitant and provisional assent to any one attempt to characterize the distinctive functions of the different regions of the brain. On the other hand, he warmly espouses the old phrenology of Gall and the bumps of the travelling lecturers of the forties. These paradoxes are defended by him with all the conviction of his reason, and more. He believes in all that he believes down to the very soles of his boots; and his arguments are mostly so surprisingly strong that some one of his works, say his 'Studies, Scientific and Social,' ought to be made the basis of a course of lectures on logic. Happy would be the university which should find itself equipped with a professor of logic really capable of dealing with his text.

As to Darwin's encomium, it does not stand alone. John Stuart Mill, Herbert Spencer, Sir Norman Lockyer, Huxley, John Fiske, Chauncey Wright—in short, almost everybody whose judgment concerning the logic of science had any particular value—have ranked Wallace among the past masters in scientific argumentation; yet his narrow training has rendered him an easy mark for whatsoever evil spirit there may be, personal or not, that beguiles men into sophistries, confusions, and rash assumptions, and it perhaps goes far to explain his willingness to serve as an instructor of the public on original lines in such a vast curriculum of subjects. He tells us (ii., 39) that he has "a positive distaste for all forms of anatomical and physiological experiment," and that he never even *saw* a dissection; nevertheless, biologists attach great weight to his conclusions about the distribution of animals, the classification of the races of mankind, etc. He has to have translations made for him from the German—and Malay, which he speaks fluently, will hardly be reckoned as an equivalent; but many a naturalist of good sense would doubtless be glad if he could exchange all his knowledge of German for half of Wallace's acumen in balancing scientific evidences. Wallace is an Oxford D.C.L., as well as an LL.D.; in this exceptional case the degree of D.C.L. really effected something, namely, it showed experimentally that, for all his paradoxes, even a university which is above all else *orthodox*, which would shiver at the bare idea of being *paradox*, or so much as paracrit to paradox, perceived that to "honor" Wallace in show would be to honor herself in deed. Bearing all these things in mind, and knowing well that Wallace never wrote a dull line in his life, and couldn't if he tried, his very tables and diagrams being as entertaining as they are valuably instructive, our reviewer, we will answer for him, was not a little curious to read this autobiography and to discover what schooling of child and man had produced this conglomerate personality.

In 1823, George IV. being King of England, Louis XVIII. of France, on the eighth

day of the year, Alfred Russel Wallace was born two miles from the north bank of the Severn, at Usk, on the river Usk. He was named after a Mr. Richard Russell, and we learn that the reason why he always spells his middle name with one *l* is that, after the christening, the parish clerk, who was no great speller, so wrote it in the register! No more inexplicable case of "psychic influence"—and it has lasted for eighty-three years—is told of in the spiritualistic chapter, although Home and Stainton Moses figure there. He came of virtuous Church-of-England middle-class stock, not at all sordid or vulgar. His father, having a competency at first, did not practise his profession of attorney, and, by his ignorance of law and business, gradually sank into extreme poverty. When Alfred was about six, the family moved to Hertford, and, after a year or two of teaching by his father, he went to the public grammar school, where he learned nothing but the nomenclature of geography, chiefly of English towns, and above all the Latin grammar; and this is the only schooling (in the narrow sense) that he ever had. The vestiges of some knowledge of Latin still appear, now and then, in his sentences, especially in constructions that are bad in a language in which the order of succession of the words is the only clue,* as well as in the frequency of "I and brother William," "I and my wife," "I and Mr. Mitten" (vol. i., pp. 246, 247, 251, 337, 339; ii., 49, 61, 238), though in the accusative it is "my brother and me" (i., 256). More than once in this book he deploras an incapacity for language which he attributes to himself. But, as to this, it is necessary to distinguish between a natural incapacity and early want of facility due to one's self-communions not having been such as to exercise one's faculty. We take leave to doubt any lack in him of the faculty itself, for the few facts at our disposal rather point the other way. Thus, his description of his school life shows that he was anything but industrious; yet he gained enough Latin to pick out the sense of the *Æneid*, and no doubt to parse the sentences. Later he found it "very easy" to learn Malay; and although that language is, as he says, of the simplest construction, especially the dialect of Sumatra, with which he presumably began, yet it may be doubted whether any grown man whose capacity for language was decidedly defective would have been so particularly struck with the facility of the task of learning it. So, during his sojourn in Wales, he greatly enjoyed the Welsh church services; he enlarges upon the beauty of this ancient tongue, which is quite noticeable for its various modifications of its words, and he praises the elocution of the preacher in a way that implies that he followed the speech, word for word, though it was only a Sunday recreation for him. But the evidence we most rely upon is his own remarkably lucid, easy, and harmonious style of writing; remarkable, we mean, in comparison with that of others who, like him, have never received any instruction in rhetoric. With little opportunity to compare his own

*For example: "Before leaving Singapore I wrote a long letter to my old fellow-traveller and companion, Henry Walter Bates, then collecting on the upper Amazon, almost wholly devoted to entomology and especially giving my impressions of the comparative richness of the two countries." This is far from being one of Wallace's worst sentences; but it illustrates the Latinity (i. 349),

ALFRED RUSSEL WALLACE.

My Life: A Record of Events and Opinions.
By Alfred Russel Wallace. Dodd, Mead & Co. 1905. 2 vols. 8vo, pp. 435, 464.

One of the scientific notables of the past forty-five years, a man to whom Darwin could write (and in substance often did), "I wish I had your power of arguing clearly" (vol. ii., p. 11), and that in reference to the very theory which his own radiant argument had illumined, must evidently be a spirit of no ordinary force; and his opinions, of which he has set forth a greater number than most scientific men find time to mature, make a more curious collection than all the rare birds and butterflies he sent home from the islands of the East, the famous *Semioptera* with its *panache* included. He believes in paper money as a standard of value, in national ownership of all the land, in Socialism, seemingly in astrology (ii., 335, *bis*), and unquestionably in full-blown spiritualism. If we are not mistaken, he is opposed to vivisection, as

performances with those of other unpractised writers, he would at first naturally judge of his own talent by the effort it cost him to express his ideas, although this effort must have been largely due to want of habitude. His self-estimation was further influenced, no doubt, by the grade-numbers that two itinerant phrenologists had assigned to his bumps of language.

At the age of fourteen his school days were brought to a close, and after a few months he joined his eldest brother, who was a surveyor. Alfred took very kindly to this business. The alternation of outdoor and indoor work was greatly to his taste, and the mathematical ingredient attracted him strongly. This is deeply graven in his correspondence. The disposition he has shown through life to express himself in maps and diagrams, together with his love of regularity and order, may incline us to think that Wallace is one of the mathematical class of thinkers. Meditation is dialogue. "I says to myself, says I," is the vernacular account of it; and the most minute and tireless study of logic only fortifies this conception. The majority of men commune with themselves in words. The physicist, however, thinks of experimenting, of doing something and awaiting the result. The artist, again, thinks about pictures and visual images, and largely in pictured bits; while the musician thinks about, and in, tones. Finally, the mathematician clothes his thought in mental diagrams, which exhibit regularities and analogies of abstract forms almost quite free from the feelings that would accompany real perceptions. A person who from childhood has habitually made his reflections by experimenting upon mental diagrams, will ordinarily lack the readiness in conversation that belongs to one who has always thought in words, and will naturally infer that he lacks talent for speech when he only lacks practice.

Another part of Wallace's education that must not be altogether forgotten consisted in his spending nearly a year in a silent and contriving trade, that of the watch-cleaner and jeweller. But circumstances carried him back to surveying, and just then the railway fever rose to such a heat that surveyors commanded high pay; so that, though we may be sure that he would not have had the audacity to obtain what some others would, yet in six months he laid up £100. This being increased by a legacy of £50, he was enabled to join his friend, Henry Walter Bates, in a voyage to Pará. Some years earlier, he had become deeply interested in botany; and more recently Bates had drawn him into a passion for beetles and butterflies. Before sailing, he had had the great good luck to secure the services of Mr. Samuel Stevens as his London agent. He remained on the Amazon, Rio Negro, and Uaupes through four years, dispatching collections to Mr. Stevens just sufficient to pay his expenses. On his return voyage he took with him more, to the value of £200, astutely calculating, we may presume, that if he himself got safe to England, so would they. It fell out otherwise. The ship took fire. Wallace was miraculously rescued, and saved only his life and a few sovereigns. The trusty Stevens, however, had of his own motion insured the specimens for £150, and lo! this was paid. He now wrote and published two books, which just paid the printer, the

time being a dead loss, from a monetary point of view. He next desired to go collecting in the Malay Islands, and, after much difficulty and delay, Government, at the instance of Sir Roderick Murchison, who was no ordinary scientist, but a swell, presented him with a first-class ticket overland to Singapore.

Wallace remained in the Malay Archipelago for eight years, studying the living forms in the forests of the chief islands and many smaller ones. He was thirty-one when he went, thirty-nine when he returned. Those years were passed in intellectual solitude. All that time he hardly spoke except in Malay, a language without abstractions, comparatively. His only constant servant was a native picked up on the north shore of Borneo. That such a life must bring a great but dangerous education to a young man we may be sure. He came home even more ignorant of how to steer his bark than he went out. He had gone for no better reason than that he was captivated by the accounts of the fauna and flora. He had not the slightest idea that he was going to the one country where a collecting naturalist could gather a fortune in specimens. Before he returned, he committed the folly of sending home a paper giving the theory of natural selection, and defending it. Was he a duke or a millionaire, that he could afford to shock every right-minded man with such a theory, whose enormity was aggravated by its being pretty evidently true? Perhaps he thought it his duty to mankind, though mankind decidedly thought not; yet even when he learned that Darwin had long had in hand a great work to the same purport, he had not the common sense to suppress his own book, and sink it deeper than ever plummet sounded. His conception of Natural Selection (at least, as he now holds it) is superior to Darwin's, in that he maintains that variation in every character of every form is so great in every generation that the vast majority of the young are destroyed without reproducing; so that a new species could be established in a century, if changes in the environment were rapid enough to call for such swift transformation. Of course, such variations exist.

Returning to England, he found he had earned a competence. Let him keep still, leave mankind to shift for itself, and distrust his own potential folly, and a happy life was before him. Alas! his ignorance of the world and want of appreciation of that ignorance were such that ere long the savings were evaporated, and he found himself in the desperate condition of having to live on his pen. Still, even then, had he written what was most conservative and indisputable, carefully concealing his original power, he might doubtless have obtained an appointment to a position where he could give carefully measured vent to his genius. But, perhaps feeling that he had not been put into the world for that, he preferred defending startling hypotheses that are not of a nature to be verified or disproved by decisive experiment. The result naturally was to press him more and more into byways of thought, diverging constantly further from the sober conservatism of worldly interest. Far be it from us to blame the veteran naturalist whose paradoxes have been so instructive to us. But it concerns us to understand

how he came to develop as he did, since several of his arguments must derive much of their weight with the general public from the high scientific standing of their author; and two of the most impressive chapters of the present volumes are calculated and partly intended to produce momentous changes of the reader's opinions largely by force of the confidence he will have come to place in the author's power of eliciting the truth of the matter to which they relate.

We repeat that Wallace is a great scientific reasoner; and of course this implies that he is perfectly fair-minded, and sincerely anxious to do full justice to that side of each question which he combats. We may add that, where he differs most from received opinions, his arguments are in general the most carefully considered and consequently the strongest. Certainly, his argument against vaccination, as it is presented in his 'Studies,' is extremely strong. The presentation of it in his 'Wonderful Century' has been more admired by lawyers, but its force is too much directed against refuting his opponents rather than to studying the facts of the case.

The spiritualistic experiences detailed in the second volume of 'My Life' simply cannot be read by any person of open mind without producing a strong impression. But the author admits that the impressive phenomena come very rarely; and when we turn to such a book as Arthur Lillie's account of his friend, the Rev. William Stainton Moses, who was probably in all respects that one of the powerful mediums who most inspires confidence, and there see in what an ocean of incredible nonsense the manifestations are swamped, we ask ourselves whether it is possible for anybody to hold his attention long upon such dire rubbish without great danger of being thrown into such an abnormal state of mind that his testimony may perhaps be no better than that of a person in a hypnotic trance. At any rate, it is the most unwholesome nutriment for the mind, and we are glad that Mr. Wallace did not long continue his active interest in it.

His Socialistic doctrine, which seems to be of a variety peculiar to himself, rests wholly upon a definition of justice as requiring that every child shall have, in every respect, an opportunity precisely equal to every other's. He seems to think it an axiom that such justice ought to be carried out. It is a kind of justice singularly at variance with the dealings of nature with individuals. It could only be remote from viva-voce criticism and discussion that such a proposition could in his mind be metamorphosed from being a thing impossible to believe to being a thing impossible to doubt.

To sum up, this is certainly a very entertaining book, highly instructive in several distinct ways. The volumes are very attractively clothed, and there is an index of near fifty pages.