

“O THOU WONDROUS MOTHER-AGE!”

THE WONDERFUL CENTURY: ITS SUCCESSES AND ITS FAILURES. By Alfred Russel Wallace. 8vo, pp. xii+400, with 12 folding tables and frontispiece portrait. London: Sonnenschein. 1898. Price 7s. 6d.

THIS book is an appreciation of the nineteenth century, an attempt to look at it in its relations to the whole history of man as it will appear

to the historian of the future. The successes have been in an increased knowledge of the facts and governing principles of the world around us, and in the application of them to our benefit. The failures have lain chiefly in the field of social economy, in which the advance has been incommensurate with that in the region of physics.

The striking feature of the century has been the discovery and application of scientific and mechanical principles entirely unknown to previous ages; discoveries comparable to the invention of fire, of writing, of geometry, or of printing; applications that have revolutionised the mode of life of nearly all the world, bringing changes both wide and deep where change had been unknown for centuries, or even for millennia. Chief among these are the means of communication by railways, steamships, the electric telegraph, and the telephone. Then come modes of lighting, friction matches, gas light, and electric light. The knowledge of light itself, and its action on matter, with the marvellous applications to photography, the Röntgen rays and spectrum analysis, by which last our knowledge of the distant universe has been so enormously extended in so many directions. Minor mechanical inventions of a novel order are the phonograph, the typewriter, and the cycle. Among scientific theories, whose practical application, though not always so direct or obvious, has profoundly altered our ways of thought, or given us fresh mastery over matter, Mr Wallace notes the following:—The doctrine of the conservation of energy; the molecular theory of gases; the atomic theory as the foundation of modern chemistry; the uses of dust; a knowledge of meteors and the meteoritic theory of the universe (the latter perhaps not so generally accepted as to have a right to rank in the present category); the hypothesis of a glacial epoch (in which also Mr Wallace goes further than many admit); the vaster conception of the antiquity of man; the cell theory and the theory of recapitulation in embryology (where, likewise, a hint of recent criticism would not have been misplaced); the germ-theory of disease and the function of leucocytes, from which conceptions Mr Wallace, not quite fairly, separates antiseptic surgery; the use of anaesthetics; and the acceptance of the theory of organic evolution, an acceptance due chiefly to the labours of Darwin, whose "work will always be considered as one of the greatest, if not the very greatest, of the scientific achievements of the nineteenth century."

This first half, or rather, less than half, of the book is a well-balanced and thoroughly interesting review, making its chief appeal to the ordinary intelligent reader. It might have been written, perhaps not quite so well, by any competent man of science. The second section of the book, dealing with the failures of the century, could have been written only by Mr Wallace. As an expression of the convictions of an eminent naturalist and thinker on many of the most important problems of our day, it has a value by virtue of that personal element, and demands the attention of all, whether they agree with its opinions or no. The list opens curiously with a strong statement of the case for phrenology, the neglect of which is regarded as one of the chief failures; the chapter undoubtedly provokes one to a reconsideration of the subject. Of similar nature is the opposition to hypnotism and physical research, so prevalent among scientific men.

It is true that exposure of charlatan after charlatan has raised a serious prejudice against such truth as does lie in these obscure branches of knowledge, while the sensational appeal they make to the unbalanced mind of the uneducated must always lead the scientific investigator to approach them with a caution and scepticism greater even than that which he rightly applies to all subjects of his study. But to write this down as a failure is to go too far. Much has been attempted and accomplished by trained observers and professional medical men, while mention at least should have been made of the establishment of the entirely new science of psychology, from the critical and experimental study of which far more promising results have already been derived than from the not always edifying exhibitions of mediums and clairvoyants. To judge from the fact that a quarter of the book is devoted to it, vaccination is the subject on which Mr Wallace feels most strongly. The opponents of this operation can hardly say that it was accepted and enforced with unthinking speed; moreover, improvements have been and are constantly being made, and we can hardly regard the statistics here collected as applicable to the vaccination of the future. The concluding chapters deal with militarism, the treatment of criminals, concentration of capital with its corresponding increase of absolute poverty, followed by the deterioration of those brought under its influence, and the spoliation of the products of the earth, such as forests, coal, and the fertile soil. That in these respects our century is no better, and often far worse than its predecessors, is too generally admitted to need emphasis here. But, whether or no the remedies to be adopted are those suggested by Mr Wallace, we venture to believe that remedies are being sought for most earnestly by an increasing number of men and women, and that even the nineteenth century may claim more than is here allowed to it. Arbitration has made progress, the treatment of criminals has improved, co-operation has become more general, schools of forestry are held to be essential, even the much-abused Indian Government has constructed irrigation works that will be the wonder of ages to come, and, as Sir William Crookes lately told us, the chemist is prepared to refertilise our worn-out soil.

Let us not be too pessimistic. No advantage is ever gained without a corresponding disadvantage, and we cannot look for advance in all directions at once. The evils that we all deplore have been caused by those very benefits that we give thanks for, and a recognition of the evil is the first step towards its removal. As an honest attempt to look things straight in the face, Mr Wallace's book deserves a welcome from men of all opinions.