

The Wonderful Century: its Successes and its Failures. By Alfred Russel Wallace. Dodd, Mead & Co. 1898. 8vo, pp. 400, with 12 folding diagrams and author's portrait.

Mr. Wallace, in his preface, hesitates to declare categorically the purpose of this volume. He says, "It may perhaps be termed an appreciation of the century—of what it has done and what it has left undone." So considered, it is not a strong performance—is strangely incompetent for a strong man like Wallace. Does it not sound a bit like a school-boy's composition to hear an age criticised substantially in this fashion: "It has achieved some splendid successes, but it has fallen into some lamentable errors"? Of any human production whatever we know in advance that it will have its merits and its faults. What we ask of the major critic is to make it plain to us what the psychological qualities are, and what the experience and discipline have been out of which merits and defects have alike sprung. To do this for the nineteenth century, with the manifold agencies that have gone to make it what it is, is, no doubt, a problem of the most intricate. And yet there is one word that

goes so far towards formulating the age, and is, at the same time, so obvious, that one cannot easily pardon its omission from the slightest description of the century. That word is Accuracy. To the spirit of accuracy (derived ultimately from the seventeenth-century mathematics, whose ideas the eighteenth had pumped into every cranny of thought) may be historically traced the larger part of the characteristic traits of the nineteenth century, even in cases where these seem to be of quite the contrary complexion. Of this Mr. Wallace tells us nothing. He never so much as mentions even precision in machinery as a vital factor in the evolution of some of our grandest ideas, such as the conservation of energy. The course of events was this: precision in the machine-shops made the application of the steam engine to ocean vessels practicable; the necessity of accurate economy of coal on those vessels stimulated, as their engines aided, the study of the theory of heat; the mechanical theory of heat easily suggested the conservation of energy.

No account of the achievements of the nineteenth century can be considered satisfactory which, like this, is confined to the physical and natural sciences, and the arts connected with them, and says nothing at all of projected geometry nor the theory of functions in mathematics, nothing of the logic of relatives, nothing of psychological measurements, nothing of the ascertainment of laws in the growth of languages, nothing of Egyptology nor of the decipherment of the cuneiform inscriptions, nor of the excavations about the Aegean and their results, nothing of the rewriting of every branch of history, nothing of Ricardo and later economists. Nor ought such a description to be confined to science: in poetry, romance, music, painting, our century may claim to have gone deeper than the last. It is not altogether wanting even in improvements in the organization of society. Laws have been reformed, slaves emancipated, education extended, women treated seriously; sobriety, decency, and self-restraint generally, respected and demanded. To talk of appreciating the nineteenth century without the slightest thought of any of these things is so extraordinarily superficial that we are justified in suspecting that Mr. Wallace has not made public his real purpose in writing this book. The only part of it that is really vigorous is an argument of surprising force against vaccination. What the author really proves, however, is not so much the small efficacy of vaccination as the relative importance of other municipal and personal precautions. It is incontestable that a man may die of smallpox though he have been vaccinated ever so thoroughly; while he cannot have the disease at all if he is not exposed to its contagion. A recognition of this principle might save a good many lives, should we have a severe epidemic of smallpox next winter. Mr. Wallace's own conclusions go very much further; but in so far they are not legitimated by the scientific logic of statistics. It is curious, however, that he does show that the great falling off in mortality from smallpox at the beginning of the century was not mainly due to vaccination.

The whole argument occupies about a third of the volume. If this is germane to the professed subject of the work, it is difficult to say what would not be so. Had the author published this chapter as a separate

essay, he had good reason to think it would not be read. If, however, his design was to seduce the reader into this chapter by prefixing 150 pages of light, entertaining discourse upon the glories of the century, further covering his purpose by appending some tame chapters on Imprisonment, militarism, poverty, and the plunder of the earth, and if he threw in a couple of chapters in defence of phrenology, hypnotism, and psychical research (under which name he really squints at Spiritualism), partly because of his interest in the subjects, and partly to relieve the exceptional character of his chapter on vaccination, then the book has by no means been unskillfully put together.

One word about phrenology. Mr. Wallace claims for this doctrine the substantial support of modern cerebral physiology. This is audacious. No scientific psychologist will for an instant admit that the function of any part of the cortex of the brain can be accurately defined in terms at all resembling the marvellousness, veneration, etc., of Gall. Phrenology has been quite stagnant for half a century, a collapse in our day not at all likely to occur to an experimental doctrine not finally defunct. If it is not dead, let its students publish photographs and measurements of the heads of say a hundred of the men whose characters have become most publicly known and who have lived since the bumps were located, and there will be a mass of irresistible facts that will do more for phrenology than any amount of mere disputation. A phrenologist, Mr. Wallace tells us, said of him, "He is fond of argument, and not easily convinced." A disciple of Lavater might take the face of the frontispiece for that of an ecclesiastic rather than a scientific man, for whom it seems too argumentative. But for that trait, he would have been an excellent statistician. The same phrenologist said, "If wit were larger, he would be a good mathematician." Thereupon, Wallace, in his eagerness to advocate phrenology, remarks, "Most great mathematicians are either witty or poetical; Rankine, Clifford, De Morgan, Clerk-Maxwell, and Sylvester being well-known examples." A man who justly prides himself on ability as a statistician should not have been guilty of that induction. A fair list of great British mathematicians among Wallace's contemporaries would be Hamilton, Sylvester, Cayley, Boole, Smith, Kelvin, and Stokes. None of them were remarkable wits, although two amused themselves with poetry. Of wit Wallace admits his lack. For poetry he seems to have some penchant, since he regales the reader with upwards of fifty elegant extracts, of the taste of which the following may serve as a sample:

"O Lavoisier, master great,
We mourn your awful fate,
But never tire of singing to your praise.
You laid foundations true,
And we must trace to you
The chemistry of our enlightened days."

There is a tolerable index, though it omits more than two hundred names of persons mentioned.