

## THE WONDERFUL CENTURY.

THE second edition of Mr. Wallace's book *The Wonderful Century*<sup>3</sup> is really a remarkable production. It is an extremely comprehensive epitome of modern science, and we can quite envy any educated though unscientific person who in its pages may for the first time be introduced to scientific facts. All the most interesting scientific advances are described therein—telephony, the Hertzian waves, with Marconi's applications of them, photography, light and heat, the cathodic and Roentgen rays, the wonders of radium, the liquefaction of gases; chemistry, electricity, and astronomy; geology, physiology, and evolution. Excellent summaries of most of these subjects will be found, and all are described in a simple and telling fashion. Though Mr. Wallace has expunged his objectionable chapter on vaccination, about which neither his practical studies nor his actual experience qualified him to write, he mourns very hopelessly over neglected phrenology—it is about as extinct as the dodo, in our opinion—and he evidently believes in clairvoyance; whereas he disbelieves in the efficacy of our lunacy laws and of our prison system, and he would stop starvation by forced contributions from the rich. That might be very good for the rich, but we wonder how much the poor would work under that system; and even riches themselves are valueless when they cannot command labour. On the other hand, we may sympathize with his lamentations over the dominant militarism of the time, over the loss of six million workers every year, and in respect of all that is expended on national armaments. If the good sense of nations would only abolish one-half of that waste, what a fund would it not leave for the poor and aged. Mr. Wallace calls our prison system utterly unchristian and a hell upon earth; but what would he have us do when even now we read of foreign criminals hailing their sentences with contentment, and when a prison surgeon can say that he knows no healthier and more comfortable place for a few weeks of peace, quiet, and reflection than one of His Majesty's prisons?

A charming chapter is that on dust, and from it we imagine that most will acquire much information. Mr. Wallace is well known to have thought out independently the theory of the survival of the fittest, and he tells his story in Chapter xvii with admirable taste and in the most self-restrained manner. We must warn our readers, however, that though we hope that most of them will read and enjoy Mr. Wallace's pages, they must not accept all his assertions without verification. It would take too long to analyze the whole of the volume, but we may be permitted in a medical journal to direct special attention to the chapter on physiology. Personally, we should have said that the first result of reproductive cell division was a morula and not a gastrula, as Mr. Wallace says; but let that small carping pass. The next objection is more serious. Mr. Wallace says that the white blood corpuscles are produced in the spleen. If he had consulted any modern work on the blood, say, that of Ehrlich and Lazarus—he would have seen that the spleen is just where they are not produced, unless, perhaps, in disease. More remarkable still, he affirms that the white cells are smaller than the red—an assertion which every medical student will know to be open to qualification. Then he speaks of their phagocytic power as their most important function, though it has been shown by Fodor and Nuttall how much more powerful is the germicidal action of the serum, and by Denys how leucocytes in a hanging drop will take not the slightest notice of pneumococci until some antitoxic serum has been added. Metchnikoff, indeed, himself has abandoned his phagocytic theory, and now only claims for his phagocytes that they give off a specific and digestive ferment inimical to bacteria. So all the argument of page 390 falls to the ground.

Again, we can assure Mr. Wallace that we do not wash our surgical instruments in a solution of corrosive sublimate (p. 393), nor do we (whatever we did twenty-five years ago) operate nowadays in a copious spray of carbolic acid. We are willing to believe that most of Mr. Wallace's statements are more trustworthy than those just mentioned; but those errors show how cautious we must be in accepting without verification the *ipse dixit* of any man, however eminent, when he travels outside the confines of his own special studies and experience. The statement as to the ubiquity of bacteria is exaggerated. They are not as a rule found more than 3 ft. below the surface of the soil, and not at

<sup>3</sup> *The Wonderful Century: The Age of New Ideas in Science and Invention*. New edition by Alfred Russel Wallace. London: Swan Sonnenschein and Co., Limited. (517 pages and 107 illustrations.)

all in the pure air of the oceans or of the mountain heights. Neither are the majority of the bacteria pathogenic or capable under ordinary circumstances of injuring us; and as regards the strictly pathogenic organisms, no amount of personal or municipal hygiene will save us if we drink water infected with typhoid, or if, being unprotected by past small-pox or by the "Jennerian rite," we should make a practice of visiting small-pox patients.

We cannot believe that the present epoch will be spoken of hereafter as of "almost incredible narrowness and prejudice" because it taboos the old phrenology. Have we not the new phrenology of Ferrier and Hitzig, of Horsley and Schäfer, and is it not far better? Thanks to the investigators above mentioned, and to Golgi and Ramón y Cajal, to Sherrington and to a host of others, we have great hopes of the new phrenology; but the old is dead and buried, along with the theory of phlogiston and with the cycles and epicycles of Ptolemy. As regards psychical matters, there can be no doubt that hypnotism can abolish pain, but it is an uncertain treatment and therefore inferior to nitrous oxide and ether, and it may be injurious in its after-effects on patients. As regards clairvoyance, is not trickery possible and likely? And if there is truth in it, why do not the clairvoyants make fortunes on the Stock Exchange, which would be much more practical than collecting a few sparse guineas from the credulous? Why does Mr. Wallace grudge to Harvey the honour of a discovery of the first class? Can it be because he utilized living animals? The Italians at least do not consider his discovery as of second-class importance, for they have claimed it with little reason but with much effusion and persistence for their own Caesalpino.

Mr. Wallace's mind is an extraordinary one—extraordinary in its scope and originality, as also in its occasional and somewhat annoying archaic one-sidedness; and we should be false to our trust if, in admiration of his great attainments, we should gloss over or pass by what we know to be his honest but believe to be his mistaken opinions. His latest book, however, like most of his books, is one to have and to hold, and we shall be pleased if this review should induce many to add to their library *The Wonderful Century*.

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