

Review.

"On the Origin of Species by means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life." By CHARLES DARWIN, M.A., Fellow of the Royal, Geological, Linnean, &c., Societies; Author of "Journal of Researches during H.M.S. Beagle's Voyage round the World."

"Species not Transmutable, nor the Result of Secondary Causes. Being a Critical Examination of Mr. Darwin's Work, entitled, 'Origin and Variation of Species.'" By C. R. BREE, Esq., M.D., F.L.S., Physician to the Essex and Colchester Hospital, Author of the "Birds of Europe not observed in the British Isles." London: Groombridge.

There are two methods in which this new notorious book of Mr. Darwin's may be treated. It may be considered on purely scientific grounds, subjecting to a close examination every process of induction or which the author founds his general laws, and sifting the exact value of the conclusions on which he relies. Such a process would meet science with science, and confront observation with observation, superseding that which is false and hasty with that which is affirmed to be true by a more mature experience. This is the first and most natural process to which such a work ought to be subjected, but it is one which could be undertaken only by that small class of persons who are intimately acquainted with the special branch of inquiry concerned, and who are competent from their own scientific attainments to speak with authority on such a subject. This weapon has been already wielded against Mr. Darwin's theory by several of the most eminent men of the day. Thus Professor Owen, in his "Palæontology," has expressed his dissent from its theory, with special reference to the revelations of geology. Dr. Daubeny, the Botanical Professor at Oxford, has published in a very strong form his entire disagreement, so far as plants are concerned. Dr. Bree, of Colchester, whose name is already well known as a naturalist, has come forward yet more formally in the publication named at the head of this notice, as the public antagonist of Mr. Darwin's theories, and has done good service to the truth by his able exposure of its absurdities and contradictions. His book is written in an excellent spirit, and we cordially recommend it as a valuable antidote to the poisonous spirit of idle speculation to which Mr. Darwin, unhappily alike for himself and for the generation for which he writes, has lent the influence of his previously high reputation.

But there is likewise another method by which this book may be tested, and it is very important to assert in the most public manner its legitimate employment. According to the crude statements that are sometimes broached, a scientific man may build upon the facts of his science, true or asserted, the most monstrous conclusions; and yet none are to be allowed to form an opinion but those who are themselves skilled in science, the authority justly accorded to a man in his own particular branch of study being unjustly extended to his conclusions, even though they boldly invade the sphere of other kinds of truth, in which he is incompetent to speak. A clear distinction must be maintained between the scientific facts arrived at, and the non-scientific conclusions that may be based upon them. With the one, special science is alone competent to deal; but the common sense of mankind is adequate to pronounce upon the other. For instance, in regard to Mr. Darwin's book, we do not pretend to be scientific naturalists, and confess ourselves, therefore, incompetent to judge of the accuracy of the facts asserted, or of the generalizations gathered from them. But when this process is concluded, we claim the perfect liberty to form our own opinion as to the accuracy or otherwise of which the author may have argued on his facts, and to bring his reasoning to the test of those universal logical canons by which all the processes of the thinking mind must necessarily be regulated. Many a specious theory is absolutely destroyed by a very simple application of this method, and at the head of them all must stand the "origina of species." We must express our unaffected astonishment at the absolute futility of the book measured by a logical standard. It is one gigantic mental bubble. We have rarely seen a more significant instance of a peculiarity frequently observable in the human mind, and for which freethinkers, as they are ordinarily called, are especially distinguished. We allude to that quality of mind which gives the first place to a speculation and the second to a fact, and which consequently tests the fact, not by its appropriate evidence, but by its accordance with the previously adopted speculation. Facts,

most certain by all the laws that govern human testimony, are by such minds unhesitatingly rejected; while other asserted facts, supported by the barest modicum of evidence, are accepted as indisputable, the rejection and the acceptance alike being due to the preconceived notions of the mind itself. We took up this book of Mr. Darwin's, after reading glowing eulogiums on its power and genius, with the feeling that it was a formidable weapon which needed great care and effort for its refutation. We lay it down with the conviction that the theory advocated in it never could have been for a moment adopted by its author, or supported by its advocates, had it not been that it gives expression to the sceptical pride of the human heart, and professes a semblance of learned reasonableness to an infidelity which had already darkened the reason and bewildered the conscience.

Considerations of space make it impossible for us to enter fully into this argument, the full explication of which is better fitted for the pages of a magazine than the columns of a newspaper. We shall merely attempt to give a specimen or two. The very statement of Mr. Darwin's views when they are drawn out from the veil of sounding names under which they are expressed into clear light beneath the eye of the human common sense, is itself sufficient for their refutation. He believes that all forms of animal and vegetable life have descended from some three or four original forms; not adapted, as we believe, by the infinite resources of Divine power and wisdom to their several spheres and manners of being, but developed through an ever-growing series by powers inherent in mere matter from these primitive forms. Mr. Darwin carefully avoids tracing the course of the world beyond these few primal forms; avoiding, indeed, by this disavowal, questions which it would have been inconvenient to answer, but which arise necessarily from this theory and are its inevitable complement. For if all the amazing varieties of life which now exist have descended from three or four primal forms, from what source have these three or four primal forms derived their existence? If from a Creative act, then why all this laborious effort to exclude out of the universe that Divine agency, which, after all, we are compelled to admit. Its action becomes a question of degree or mode, and that is all. That secondary causes do influence life, being themselves but the instruments of Creative will, we steadfastly believe; and Mr. Darwin must admit the same, whatever degree of application he may give to the admission, if he acknowledges that the will of a Creator produced the first primal forms, out of which all the others have been developed. But if there was no Creative act, then not only the varied forms of life, but life itself, must have been self-evolved, and Mr. Darwin has no right to put this conclusion out of view, for it is part of the results by which his theory must be measured. It is propounded in his publication as a theistic theory, but its logical conclusions are more; they are ATHEISTICAL.

Now let us see how all the intuitive principles of the human mind are shocked by the theory actually advocated. All that divides one form of life from another, varieties of structure, form, habit, including the distinctions of physical life and of intelligent mind, are all held

from the very highest of them to the very lowest, to have been caused by principles belonging to matter itself. To select his own instances, the whale is the developed form of a white bear swimming to the surface of the polar seas, with his mouth open to catch flies. The seal is the same bear, who, in his ancestral form, had in especial taste for fish, and lived so long in the water in his favourite pursuit, that his hind legs disappeared altogether, and his fore legs were contracted into the fins of the seal. We assure our readers that we are not joking. These are illustrations given by Mr. Darwin himself; and this statement is simply the natural *reductio ad absurdum* to which his theory inevitably tends. The wings of birds were developed by the constant use of some rudimentary organs, which, in terrestrial animals, have from disuse disappeared altogether; while, in singular inconsistency with this, the tails of land animals are the remnant of organs used for locomotion in the water by their remote marine progenitors, but which have obstinately refused to succumb to the author's laws of natural selection, and still continue unreasonably to maintain their variety of size and structure. Even the human eye itself, with all its astonishing mechanism, the model which man's mechanical genius has toiled to copy since the world began, was simply formed by use; that is, the first blind animal, by some accident, saw; though how the blind saw, we know not; and finding that sight was profitable to it in the struggle of exist-

ence, it handed the newly-discovered power to its progeny, which by constant use gradually developed, enlarged, gave new complexity and perfection to the organs so produced. Beyond this, human absurdity and the amazing credulity of the human mind, when it has cast off revealed truth, cannot go. We will only add the order of progression by which animal life must have advanced, as shown by Dr. Bree, from the most modern scientific classification, "Plants, protozoans, zoophytes, worms, insects, lobsters, fish, reptiles, birds." Or again, "the kangaroo, the dolphin, whale, pig taper, hippopotamus, rhinoceros, elephant, horse, ass, camel, stag, giraffe, antelope, sheep, goat, buffalo, bison, ox, hare, rat, mouse, squirrel, walrus, seal, cat, leopard, tiger, wolf, hyena, weasel, bear, badger, raccoon, vampire bat, lemur, monkey, anthropoid specimen." What a genealogy for sentient, conscious, immortal man!

But we must examine the book from another point of view. There are two assumptions upon which the whole theory is built, the first axiomatic truths of Mr. Darwin's peculiar science. Of these not a shadow of proof is given; yet, deary them, and, at any one stage of the argument, the whole theory crumbles into the dust. The first is that "varieties" and "species" are but terms for the same thing; that species is but a more positive variety, variety but a less clearly pronounced species. For this assumption there is no evidence offered beyond the mere fact that naturalists sometimes differ in their classifications, one esteeming that to be a variety which another ranks as a species. Hence Mr. Darwin concludes that there is no real difference between them. Yet he himself incidentally specifies three points of difference. He acknowledges that the difference between a species and a variety is invariably more positive than between one variety and another, that they are separated by a wider interval. This he explains by the hypothesis that the intermediate varieties have, in all cases, perished, appearing to forget that this very hypothesis is in direct opposition to his own theory of natural selection; for the varieties which more nearly resemble a species must belong to a higher grade of the infinite succession, in which he believes, than the varieties less nearly resembling it. In the struggle for life the lower, therefore, ought to have perished, while the higher survived; whereas the higher have perished and the lower survived, and this so universally that he dedicates a chapter to an explanation, which itself only creates this further unexplained difficulty. Secondly, he states that the pollen of a species is invariably pre-potent over that of a variety, while in the variety the pollen of another plant is pre-potent over its own. Lastly, he acknowledges that sterility is the ordinary, if not the universal law of hybrids; yet he assumes that species and varieties differ only in degree, and, on this assumption, as if on a certain fact, he proceeds deliberately to argue. The other pervading assumption of the book is still more monstrous. The author starts with stating the effects which human intelligence has been enabled to produce by the selection of individuals and the crossing of breeds in the varieties of the domestic animals. He then, at one prodigious leap, ascribes, to what he calls nature, the same power which he has just explained to be the power of intelligence, only in a much higher and more perfect degree, giving it, indeed, the attributes of the intelligent Deity. Then, in order to avoid the rejoinder that, if this power is acting ever in nature, it must come in some degree, however minute, within the reach of human observation, and, therefore, be capable of being tested by experiment, he repeatedly asserts that this supposed power is no "law," that is, does not act equably and universally, but by exceptions, fits and starts. He thus makes the paradox more paradoxical, by imputing to blind nature not only the acts but even the discretionary power of intelligent agency. Can any man accept such an assumption who has not deliberately educated himself into it in the manner acknowledged by Mr. Darwin? It is strange that he himself did not see that this power could only be voluntary, that is, belong to a personal being,—and that Being must be God.

Of the enormous difficulty of accepting such paradoxes the author seems to be aware; for, with a show of conscious candour singularly contrasted with the apparently unconscious absence of it elsewhere displayed, he acknowledges over and over again the difficulty which his own mind experienced in accepting them. He acknowledges that to himself they appeared at first absolutely incredible, and that it was only from the result of further consideration that the shock given by them to the mind's intuitive perceptions was removed. In other words, he is another example of a truth of which those

who watch the processes of the human mind are painfully conscious, namely, that there is no absurdity so monstrous but that a man can educate himself into believing it. Of this tendency, enamoured with the very ingenuity of its own speculations, and so blindly dwelling upon them that the mental organ grows distorted at last, the open violation of logical rules traceable throughout this book is but an expression. Thus the usual lesson which men have been accustomed to draw from the consciousness of their ignorance, is the folly of speculating on subjects of which we have, in our ignorance, no criterion. The author reverses this process, and repeatedly argues that we are too wholly ignorant of the subject, not to frame speculations, but to object to their inherent improbability. The usual rule of logic is first to prove a premise before you draw from it a conclusion. The author reverses this law, and because the conclusion seems certain to his own mind, he avers the certainty likewise of the premise. Thus the conjecture of one page is the undoubted fact of another. That which is first gently insinuated as a probability, is quietly assumed, without any hint to put the ordinary reader on his guard against the fallacy, as an absolute fact, which proves other things beyond itself. It has been usual to confine human thought since the days of Bacon, so far as it concerns natural sciences, within the range of the facts noted by usual observation. Mr. Darwin confesses the facts of geology as gathered from the existing strata to be against his theory, since they evidence the existence of the same clear definitions between varying forms of life then as now; but his soaring genius is not to be cramped by so petty a limitation, and enormous as the calculation of geological time is, he supposes first that a precedent series of ages still more enormous had ushered in all the known geological periods; and, secondly, assumes that these imaginary periods, could they have been brought within human cognizance, would have supplied facts in favour of his theory. No difficulties in short are too great to stagger such a genius for speculation. His theory may require, as it does for instance in his discussion of the structure of the cell of the honey bee, four or five different suppositions to make it even conceivable; but the trained limbs of the speculative athlete leap easily over the gulf without any apparent consciousness of the difficulty. But surely a theory that can only be supported by such shifts belongs altogether to the region of fiction, and not of fact. Such assumptions might be expected in the writings of Swift or Defoe, but are scarcely suitable in those of a man who professes to correct all science, and all religion to boot, by the standard of his advanced knowledge. The whole volume, regarded as an illustration of the mental and moral state of its author, supplies one of the most curious psychological phenomena that can be conceived, and in this light we commend it to the close study of our metaphysicians. But so far is it from weakening a single outwork of revealed truth, that no careful and thoughtful reader can rise from its perusal without gathering from the facts of natural history that it supplies a deeper reverence for the wisdom and power of God; and from the insight it affords into the workings of the human mind, a deeper consciousness of its infinite self-deceptions, and a more abasing comprehension of the Divine declaration, "The wisdom of this world is foolishness with God."

who watch the progress of the human mind are painfully conscious, namely, that there is an absence or want of unity but that a man can estimate himself thus following it. In this history, concerned with the very beginning of human operations, and so hardly drawing upon those that thousands of years have elapsed at least, the open variation of logical rules transmits throughout this book is but an imposture. That the usual laws, which men have been accustomed to draw from the consciousness of their ignorance, is the folly of speaking on subjects of which we have, in our ignorance, no evidence. The author assumes this proper, and repeatedly argues that we are too widely ignorant of the subject, not to know operations, but to admit to their inherent improbability. The usual rule of logic is that to prove a person before you show that it is consistent. The author assumes this law, and because the conclusion seems certain to his own mind, he uses the curiously illogical of the premises. Thus the structure of one page is the unfolded form of another. That which is first partly assumed as a probability, is quickly assumed, without any hint to put the ordinary reader on his guard against the fallacy, as an absolute fact, which proves other things beyond doubt. It has been usual to consider human thought since the days of Bacon, as far as it concerns natural sciences, within the range of the facts told by usual observation. Mr. Darwin continues this habit of judging as gathered from the existing facts to be applied his theory, since they evidence the existence of the same clear definitions known, varying forms of life that we have; but his saving point is not to be misled by us partly a limitation, and moreover as the calculation of geological time is, he suggests that that a powerful action of ages will more numerous but placed in all the known geological periods; and, finally, assumes that these imaginary periods, could they have been brought within human experience, would have supplied facts in favour of his theory. No difficulties in short are too great to stagger such a genius for speculation. His theory may require, not that he instance in his discussion of the structure of the cell of the honey bee, but at first different suppositions to make it even conceivable; but the trained habit of the speculative scholar leap easily over the gulf without any apparent consciousness of the difficulty. But surely a theory that can only be supported by such facts belongs altogether to the region of fiction, and not of fact. Such assumptions might be expected in the writings of Swift or Zola, but are equally outside in those of a man who pretends to correct all errors, and all religion to him, by the standard of his abstracted knowledge. The whole volume, regarded as an illustration of the mental and moral state of its author, supplies one of the most curious psychological phenomena that can be conceived, and in this light we understand it to be the close study of our imagination. And so far is it from weakening a single link of revealed truth, that its careful and thoughtful reader can rise from his period without gathering from the facts of natural history that it supplies a deeper reason for the relation and power of God, and keep the scriptural truths into the workings of the human mind, a deeper comprehension of its infinite self-deceptions, and a more glowing comprehension of the divine destination. "The wisdom of this world is foolishness with God."