

As Mr. Buckle's volume that recently created so great a sensation in educated society is only preliminary to a greater undertaking, the work before us is only an introduction to that important inquiry to which Mr. Darwin has devoted his mature wisdom and the best years of a laborious life. To criticise it narrowly at the present stage of the proceedings would be unfair to the author and injurious to the public; for, although by itself it is the most valuable contribution that has for many years been made to natural science, it is little more than a statement of the line of argument the philosopher intends to adopt in the treatment of the subject he has taken in hand. Many of the positions in this introduction are merely announcements of the conclusions at which the author has arrived, accompanied by a general indication of the reasoning which has brought him to them; but the facts by which he was guided, and by which alone the reader can form a correct estimate of the soundness of the arguments employed, are reserved for the great work. Indeed Mr. Darwin is somewhat in the position of a counsel who has made a powerful statement of what in many respects unquestionably appears to be a strong case, but has not yet had time to call witnesses. Of course until all the testimony has been heard and sifted, the Court, whatever may be its first impressions, cannot proceed to deliver judgment. That this is the nature of his position Mr. Darwin makes no secret. He frankly avows that he does not in his volume discuss a single point on which there cannot be adduced facts leading to conclusions directly opposed to those at which he has arrived. "A fair result," he says, "can be obtained only by fully stating and balancing the facts and arguments on both sides of each question, and this cannot possibly be here done." A writer makes no trifling demand on the public when he comes before them with an important and highly interesting treatise, perfectly opposed to scientific orthodoxy, and requests that a decision on its merits may not be made until "two or three more years" of labour shall have enabled him to complete the sequel. But under certain circumstances, and by a few writers, such a petition may be reasonably preferred; and in the present case we are of opinion that the impaired health and high character of the author fully justify him in confiding himself to the forbearance, gratitude, and justice of those whom he addresses. In one important respect the "Origin of Species" resembles the "Vestiges of Creation," which some years since struck with consternation so many worthy persons who were more remarkable for religious enthusiasm than strength of intellect, and which, notwithstanding the daring and untenable hypothesis on which it is based, will long continue to interest all students of natural science capable of appreciating the adroitness as well as courage of its reasoning. Both the "Vestiges" and the "Origin of Species" argue in support of the progressive theory which is well stated by Mr. Darwin when he says:—"I am fully convinced that species are not immutable, but that those belonging to what are called the same genera are lineal descendants of some other and generally extinct species, in the same manner as the acknowledged varieties of any one species are the descendants of that species." But beyond advocating the mutability of species, and consequently using the testimony of natural science in support of such a view, there is no likeness between the two works. The unsupported and audacious hypotheses of the "Vestiges" were that life in the first instance was a chemico-electric operation, and that the mutation of species was consequent on all organic beings obeying a universal impulse to advance from the lowest to the highest grades of organisation—which impulse again was modified by external physical conditions. Far from elaborating any theory as to the origin of life, Mr. Darwin confines himself almost entirely to the consideration of the evidences of mutation of species to be found in the physical world; and even where he, for a brief space, travels away from the design of his work, and hints at his belief as to the first creation of organic life, he argues that all organic beings have "descended from some one primordial form into which life was at first breathed"—a view which, far from being antagonistic to "the truths of Revelation," is easily reconcilable with them. In developing his arguments Mr. Darwin commences by directing attention to the variation of species—firstly under domestication, and secondly when they are in a state of nature. The evidence which he adduces of variation under domestication will interest numerous popular readers who will be unable to follow the author in the higher regions of investigation. All our various breeds of horses—the thoroughbred racer, the Flemish dray-horse, and the Suffolk Punch—have, in the author's opinion, descended from one wild stock. So, also, the opinion of Mr. Blyth is endorsed, that all the breeds of poultry have proceeded from the common wild Indian fowl (*Gallus Bankiva*), and the different sorts of ducks and rabbits have all come from the wild duck and wild rabbit. Of all the varieties of different species which Mr. Darwin surveys, and refers to a common parentage, the domesticated pigeons are the most fully and deliberately considered. Great as is the difference between the breeds of pigeons, Mr. Darwin fully concurs with the majority of naturalists in regarding them as all descended from the rock-pigeon (*Columba livia*). The several reasons by which the author has been brought to this conclusion are, that the improbability is great of man having formerly got seven or eight supposed species of pigeons to breed freely under domestication; that these supposed species are quite unknown in a wild state and nowhere become feral; that the species have very abnormal characters in certain respects, as compared with all other *Columbidae*, though they are so like in most other respects to the rock-pigeon, that the blue colour and various marks of the rock-pigeon occasionally appear in all the breeds, whether they be pure or crossed, and that the mongrel offspring are perfectly fertile. This view will probably be laughed to scorn by many fanciers of domestic animals. It will be long ere a raiser of Hereford cattle will believe that his breed may have descended from long-horns. The mutation of species, however, goes on much more rapidly under domestication than under nature. Breeders know well how speedily they can modify or completely dissipate the characteristics of certain stocks. Lord Somerville says of sheep breeders—"It would seem as if they had chalked out upon a wall a form perfect in itself, and then had given it existence;" and Sir John Sebright used to say with respect to his pigeons, that "he would produce any given feather in three years, but it would take him six years to obtain a head and beak." And in a well attested case, alluded to by Mr. Youatt, two flocks of Leicester sheep, into which no admixture of impure blood has been allowed to come, have, in the course of 50 years only, so altered from the original stock that they have the appearance of being quite different varieties. In the chapter devoted to variation under nature, Mr. Darwin insists, with peculiar force, on the smallness of the gradations by which the process is effected. "No clear line," he says, "of demarcation has as yet been drawn between species and sub-species—that is, the forms which, in the opinion of some naturalists, come very near to, but do not quite arrive at, the rank of species; or, again, between sub-species and well marked varieties and individual differences. These differences blend into each other in an insensible series; and a series impresses the mind with an idea of an actual passage." Having considered the more prominent phenomena of variation, Mr. Darwin comes to the real business of the work—viz., to account for it. In variation under domestication the principal cause is manifestly the selection made by breeders for the perpetuation of a stock of those animals which individually have certain recognised characteristics in a high state of development, and are therefore necessitated to transmit them to their progeny. Thus individual characteristics become more and more marked, until they constitute a new variety. Under nature the same work is achieved, but on a different plan. What this plan is the chapter on "The Struggle for Existence" explains. In this striking and most poetic portion of his work, Mr. Darwin extends the application of those principles which Malthus used in his inquiry into the laws regulating the procreation of the human species until they are brought to bear on every species and variety of organic life. He shows how every species, and all the varieties of each species, and all the individuals of each variety, are warring together for existence, devouring each

other, or consuming that which is necessary to another's life. In such a strife, where myriads momentarily perish, those individuals alone survive to continue the contest who have some peculiarity which places them in the warfare at an advantage over their fellows. It follows that in the long run those individuals alone perpetuate a species who in an especial degree are endowed with the serviceable qualities of the species; and thus, by the force of circumstances, "selection" is made under Nature more slowly, but more surely, than under domestication. New varieties, new sub-species, new species are thus in the slow course of countless ages evolved. On the other hand, when a species ceases to be able to hold its own in the struggle, it dies out, the process of "extinction" and "production" of species being alike imperceptibly gradual. We have not space to mention here the influence exercised, in Mr. Darwin's opinion, on species by sexual selection, climate, and food. We are inclined to think that he underrates the effects of the two last-named powers, and displays something of a reactionary feeling from the school of naturalists who have been too prone to account for all the characteristics of race by their diet and the temperature of the regions they inhabit. Such, briefly stated, is the theory of this remarkable book. Having with a display of learning and logical power alike unusual announced it, Mr. Darwin, with a frankness that is praiseworthy, but at the same time is manifestly unassumed, enters on the consideration of the objections that can be made to it. With a courage truly worthy of a philosopher, but rare in a promulgator of new thought, he makes a strong—we believe the strongest possible—case against his own views. He asks why, if species have descended from other species by insensibly fine gradations, we do not find innumerable transitional forms?—whether it is possible that an animal, having the structure and habits of a bat, could have been formed by the modifications of some animal with wholly different habits?—whether it is possible for instincts to be modified by natural selection?—how we can account for species when crossed being sterile and producing sterile offspring, whereas when varieties are crossed their fertility is unimpaired? Each of the difficulties pointed at by these questions Mr. Darwin discusses at length. Of course the result of his arguments is on his own side; but though we have followed him cautiously step by step we have nowhere been able to find him tripping over a fallacy. Of course even to indicate what are the arguments of a volume which is itself only an index to the arguments of a future work would take us far beyond the limits of an article. Of the chapters on "Instinct" and "Hybridism" it would be impossible to give any fair summary, as they are condensations of learning and thought that it would be difficult to match in the entire range of scientific literature. To the chapter on "The Imperfections of the Geological Record," though it is not less masterly than the others, it would be easy to raise a few superficial objections. But in this part of his work, opposed though he is to Cuvier, Owen, Agassiz, Barrande, Falconer, E. Forbes, Murchison, and Sedgwick, we are of opinion that Mr. Darwin is not to be successfully assailed. It might perhaps be shown that he has over-estimated the time requisite for the denudation of the Sussex Weald; but even if such could be proved to be the case, the main argument which the calculation is made to illustrate, not to sustain, would be left untouched. In the concluding chapter Mr. Darwin says:—"In the distant future I see open fields for far more important researches. Psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation. Light will be thrown on the origin of man and his history." This sentence has already caused some comment on the part of the nervously anxious supporters of religious orthodoxy. In the alarm that it has created we do not sympathise, for we see in it no suggestion that we are on the eve of making discoveries relative to the mental and moral constitution of man that will upset or be antagonistic to the doctrines of revelation. We have learned to agree with Bacon that no man "can search too far or be too well studied in the book of God's word, or in the book of God's works."

LIFE OF THE DUKE OF WELLINGTON.

TO THE EDITOR OF THE MORNING POST.

SIR,—Your critique of Friday last (for which many thanks), on the two last volumes of the "Life of the Duke of Wellington," put me very much in the plight of the celebrated Irishman, who, after shooting his man through the calf of the leg, because he could not be persuaded to believe that anchovies grew on bushes, discovered from the effects of the wound thus inflicted, that what he meant to say was, capers.

Sure enough, at page 224 of vol. iv. I find the names of a warrior and of a battle put down, which were no more in my mind, when I wrote the words, than the veritable anchovies were in the mind of the Irishman when he challenged his bosom friend to mortal combat. Let me beg of you, and of all who possess the work, to substitute *Hadrubal* for Hanno, and *Wagram* for *Austerlitz*. They will thus rectify the most unaccountable lapsus into which unfortunate author ever fell, himself not having as yet fallen quite into his dotage.

With respect to the acerbity with which you charge me, I hope that you do me (unintentionally) some wrong. If one drop of gall has got into my pages, it is there through mere inadvertence; indeed, the single expression which you quote (and that occurs in the table of contents to one of the chapters) means no more than that the retirement of Earl Grey from the head of the Administration is to be noticed. My sole object has been to do justice to the memory of the great Duke; and I shall grieve if, in seeking that end, I give needless pain to one of his political opponents. For though I still think (and probably more persons will be found of my opinion now than thought with me a quarter of a century ago), that the Reform Bill of 1832 was a political mistake, I should be very sorry, either in figure or in fact, to throw stones at the authors and abettors of that measure.

I have always had many dear friends among what are called Liberal politicians, and the experience of a long life has taught me that acerbity in argument, though it generally irritates, seldom convinces.—I have, &c.,

G. R. GLEIG.

Warwick-square, Jan. 7.

TWO HUNDRED THOUSAND MEN, WOMEN, AND CHILDREN.

TO THE EDITOR OF THE MORNING POST.

SIR,—Two hundred thousand men, women, and children, is the aggregate number that has during the past year attended at the George-yard Ragged School and Church, George-yard, Whitechapel; and the amount of lasting good that has been effected is altogether incalculable. Many poor ragged, outcast children have been taken in, educated, and placed in excellent situations; others have been made sailors of, and so on. Men and women the most depraved have been reclaimed, and are now useful members of society; many of them being engaged in gratuitous missionary labours, seeking out those living in immorality and sin, and persuading them to attend a place of worship, &c.

These practical results of our exertions, and the knowledge of your readiness to lend your assistance to deserving institutions, embolden me to ask you to allow me to appeal to the charitable public for assistance of any sort, and however trifling, through your columns. The people we deal with are truly the poorest of the poor, and the distress amongst them is at all times heartrending. Many of the children are almost naked, and what rags they have on are ready to drop off them. Parcels of left-off clothes will therefore be thankfully received for them.

May He who is the Father of all direct the hearts of those blessed with plenty to deal charitably with their poor suffering fellow-creatures.—I am, sir, yours,

WILLIAM J. LEWIS, Gen. Sec.

Old Norfolk-street, New-road, Mile-end,

Jan. 6, 1860.

THE FACTORY ACT.—A month ago the Union Mill Company at Padsey were summoned by the sub-inspector of factories, Mr. Richards, before the West Riding magistrates, at Bradford, for a violation of the Factory Act, in employing their workpeople after six o'clock in the evening. The defense was that the mill ran from half-past six o'clock to half-past six o'clock, previous inspectors having granted permission so to work. Time was consequently given for reference to be made to Mr. Redgrave, touching the alleged permission to depart from the hours fixed by the law, and on Thursday the reply of Mr. Redgrave was received and read. Mr. Redgrave repudiated the idea that any such authority should have been given, and expressed himself unable to discover, even from the practice or the records left by predecessors in office, that any such authority had been given. At the same time he suggested that heavy penalties should not be rigorously sought in the case. With the sanction of the bench only mitigated penalties were therefore imposed.

* 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 Royal Geographical, Linnean, &c. Societies. London: John Murray.