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CHARLES DARWIN, F.R.S.

MR. Charles Robert Darwin, F.R.S., whose portrait we here present to our readers, and whose name stands in the foremost rank of living naturalists and original thinkers, is one of the many English philosophers of the nineteenth century who will hereafter be found to have left their mark upon the age in which they lived; and, as such, he deservedly claims a place in our portrait gallery of contemporaries.

From two remarkable men, both of them equally distinguished in their respective paths of speculative science and applied science and art, the subject of the present notice is descended. Dr. Erasmus Darwin, F.R.S., the author of "The Botanic Garden" and "Zoonomia," was the paternal grandfather, and Josiah Wedgwood, F.R.S., the man who, above all others, advanced the art of the potter in this country, the grandfather on the mother's side of Charles Robert Darwin, who has given his name to a theory which will long agitate the philosophic world.

The naturalist whose portrait accompanies this notice was born at Shrewsbury on the 12th of February, 1809, his father being Dr. Robert Waring Darwin, also a Fellow of the Royal Society. He was educated at the Shrewsbury School, under Dr. Butler, afterwards Bishop of

Lichfield, and in the winter of 1825 went, for two years, to the University of Edinburgh. After this Mr. Darwin proceeded to Christ's College, Cambridge, where he took his B.A. degree in 1831.

Mr. Darwin inherited from the author of "Zoonomia"

that love of natural history and the allied sciences which has been the labour and the pleasure of his life. In the autumn of 1831, Captain Fitz Roy, R.N., having offered to give up part of his own cabin to any naturalist who would accompany H.M.S. "Beagle" in her surveying voyage and circumnavigation, Mr. Darwin volunteered his services without salary. His scientific acquirements were already so well known that the offer was at once accepted, and Mr. Darwin gave the country his services, stipulating only that he should have the absolute disposal of his collections.

The "Beagle" sailed from England December 27th, 1831, and returned on the 27th of October, 1836. During this absence of nearly five years, a survey of South America was made, Bahia, Rio Janeiro, Monte Video, St. Julian and Santa Cruz, with the Falk-

land Islands and Tierra del Fuego were visited on the one hand, Valparaiso, Lima, the Pacific Islands, New Zealand, Australia, and the Mauritius on the other. In 1834 this eminent naturalist was elected a Fellow of the Royal Society.



CHARLES DARWIN, F.R.S., &c.

(From a Photograph by O. G. Rejlander, & Albert Mansions.)

In 1839 Mr. Darwin published a volume as part of Captain FitzRoy's general work, descriptive of this voyage. The interest excited by this, one of the most graphic, and at the same time most philosophic book of travels that was ever published, led to its reproduction in a modified form, in 1845, under the title of "Journal of Researches into the Natural History and Geology of the Countries visited during the Voyage of H.M.S. 'Beagle' round the World." Such has been the popularity of this work, that we find Mr. Murray advertising, in 1860, "the tenth thousand." This "Journal" shows Mr. Darwin to have been a singularly close observer of every phenomenon in natural history, and of every variety of condition, physical and mental, of the people whom they visited during this remarkable voyage, exhibiting the possession of perceptive powers of the highest order; he displays, at the same time, the severe control which was maintained over them by a reflective capacity of the most exalted kind. No single phenomenon is described by Mr. Darwin until after it has been most cautiously examined, and the reader of the "Journal" is soon impressed with the persuasion that the facts narrated are placed beyond a doubt, and that his reasonings on those facts are ever guided by a system of most severe inductive philosophy. This is most especially exemplified in Mr. Darwin's reasonings on the origin of the coral reefs of the Pacific.

In the beginning of 1839 Mr. Darwin married his cousin, Emma Wedgwood, and shortly after this he left London, taking up his residence at Down, near Farnborough, in Kent. For twenty-six years, in the retirement of his home, Mr. Darwin has devoted himself to the care of a large family, and the quiet and close investigation of the works of nature. His first labours, after this date, were editing the "Zoology of the Voyage of the 'Beagle,'" giving an account of the habits and ranges of the various animals therein described. In aid of the publication of this and other works bearing on the same subject, the Lords of the Treasury granted 1000*l.* In 1842 Mr. Darwin published his work on "The Structure and Distribution of Coral Reefs," to which we have already incidentally referred as an example of that inductive logic which Mr. Mill so perfectly distinguishes in his remarks on the "Law of Causation:" "Let the fact be what it may, if it has begun to exist, it was preceded by some fact or facts with which it is invariably connected. For every event there exists some combination of objects or events, some given concurrence of circumstances, positive and negative, the occurrence of which is always followed by that phenomenon."

Equally good examples of this rule will be found in the "Geological Observations on Volcanic Islands," published in 1845, and in the "Geological Observations on South America," which were given to the world in 1846.

Continuing, without rest, his researches, we find the results of his unwearying industry in two volumes, published by the Ray Society in 1851 and 1854, "On Pedunculated and Sessile Cirripedes," and in two other volumes, published by the Palæontographical Society, on the fossil species of the same class.

Towards the close of 1859 Mr. Darwin published his

"Origin of Species by means of Natural Selection." Of this work five English editions have appeared, and many foreign editions, in French, German, Dutch, Italian, Swedish, and Russian. The popularity of this work will be evidenced by the fact that more than two hundred reviews, pamphlets, and separate books have been published upon it, while the earnestness with which the question brought under notice by Mr. Darwin is still discussed, appears to show that these will hereafter be much increased. In a few words, our author has himself expressed the theory he teaches; these few we extract from the last edition of the "Origin of Species":—"As man can produce, and certainly has produced a great result by his methodical and unconscious means of selection, what may not *natural selection* effect? Man can act only on external and visible characters. Nature (if I may be allowed thus to personify the natural preservation of varying and favoured individuals during the struggle for existence) cares nothing for appearances, except in so far as they are useful to any being. She can act on every internal organ, on every shade of constitutional difference, on the whole machinery of life. Man selects only for his own good, Nature only for that of the being which she tends. Every selected character is fully exercised by her, and the being is placed under well-suited conditions of life."

On one hand we find the author and his theory denounced with unreasoning violence, while on the other Mr. Darwin is exalted into the founder of a new faith, and his views are regarded almost as revelations. As in the theory of "Natural Selection" we are taught that the process is extended over long periods of time, and that Nature proceeds with her work by almost imperceptible degrees, so the truth will slowly but surely be eliminated by an analogous process; and every member having been submitted to the test of time, will suffer some change, until "eventually the body of Osiris will arise in all its incomparable perfection," as Bacon has taught us in one of his beautiful apophthegms.

In 1853 the Royal Society awarded to Mr. Darwin the Royal Medal; and in 1859 the Wollaston Medal was given to him by the Geological Society. In 1862 he published a book full of curious research, "On the Various Contrivances by which Orchids are Fertilized." Of separate papers published by this naturalist, we find the following amongst the more important:—"On the Connection of certain Volcanic Phenomena in South America;" "On the Distribution of Erratic Boulders in South America;" "On the Formation of Mould by the Earthworm;" and "On the Geology of the Falkland Islands"—all published in the *Transactions of the Geological Society*. In the *Journal of the Linnean Society* three papers have appeared from the pen of Mr. Darwin, on the Dimorphous and Trimorphous States of various Plants, and one paper "On the Movements and Habits of Climbing Plants." This last paper has since been published as a separate work. In 1864 the Royal Society awarded to Mr. Darwin the Copley medal, and he has been elected a member of various foreign scientific bodies.

From the earliest work published by Mr. Darwin to his latest, there will be observed by every careful student

a constant desire to search out the secret springs of nature. This is not shown, as is too often the case, by any imperfectly considered hypothesis; but everywhere we discover the same painstaking experimental investigation, the same close and long-continued observation; and also everywhere we discover that high power of drawing with clearness and simplicity his deductions from his well-established facts, which distinguishes the true *Philosopher*.

Early in the present year Mr. Darwin brought out his long expected book on "The Descent of Man, and Selection in Relation to Sex," a work which carries to its legitimate conclusion the famous hypothesis which he stated in his treatise on the "Origin of Species." The sum and substance of the book is thus briefly epitomized in the *Times*:—

"In his work on the Origin of Species, it will be remembered that he maintained the theory that all Species, instead of having been independently created, and possessing an independent existence, had been gradually developed out of other forms. This theory in itself was not new, having been previously put forward by Lamarck, besides other naturalists. But Mr. Darwin gave it a new character and vitality by his proposed explanation of the method of development, Lamarck had attributed the gradual variation of Species to the direct operation on organized beings of the circumstances and conditions of life in which they were placed. Mr. Darwin added the observation that the individuals who at any moment happened to develop an adaptation to such circumstances would be more likely to succeed in the struggle for existence, and would thus leave a greater number of offspring. Lamarck, for instance, supposes that the long neck of the giraffe was acquired by the original animal having been impelled by circumstances to seek for its food in branches of trees, and thus to have extended its neck by constant use. Mr. Darwin assumes a similar tendency, but adds that, from the moment it began to operate, the giraffes which, from the greater length of their necks, were more successful in gathering food, would become more vigorous, would survive in greater numbers, and, by the ordinary laws of inheritance, would transmit their peculiarity to their offspring. The offspring would, in turn, carry the development further, and transmit it in a more extended and more permanent form to their successors. Just as man, for his own uses or fancies, selects for breeding purposes those particular animals which have the specialities of construction he desires, and is thus able to increase such specialities and render them permanent, so nature, by gradually eliminating from time to time the individuals least adapted to the circumstances of the country or period, and proportionately favouring the propagation of the better adapted, has indefinitely diversified and improved an original and simple stock. Now Lamarck, as is well known, did not hesitate to apply his theory to the case of Man, and asserted that Man had similarly been developed by the mere force of circumstances from an ape. Mr. Darwin sufficiently indicated in his former book that he was prepared to make a similar application of his own enlarged hypothesis. He said that by his speculations 'light had been thrown on the origin

of Man and his history.' He refrained, however, for the time from publishing the arguments he had prepared on the subject, as he thought he 'should thus only add to the prejudices against his views.' But he thinks that with most naturalists, and especially the younger and rising ones among them, his theory has now made good its claims to acceptance, and he no longer hesitates to push it to its final conclusion. That conclusion is clear and definite. It is that 'at a remote period, Man, the wonder and glory of the Universe, proceeded' from the stem of Old World Monkeys.

It is not to be supposed that so bold and novel an inference would be allowed to pass unchallenged in the literary or the religious world; and, whatever may be thought of the consequences flowing from Mr. Darwin's arguments,—whether, as many say, they tend to overthrow the authority of the Book of Genesis, or whether they lay the foundations of a harmony between Science and Scripture rightly understood and interpreted, at all events we have not the space or inclination to canvass them in these columns. It will be enough for us if we have placed the main facts of Mr. Darwin's life upon record, and stated briefly, popularly, and intelligibly the position which he has taken up as a philosopher in discussing the origin of the human race, believing, as we sincerely do, that the Roman author was right when he said "*Opinimum commenta delet dies, naturæ judicia confirmat.*"

PROGRESS IN THE ARTS DURING THE LAST DECADE¹.

THE first of the annual Exhibitions formed a fitting opportunity for noting our art progress during the last ten years, and accordingly the writers of the reports contained in the work before us have not lost sight of the fact that they have the art work of a decade to chronicle. It is especially valuable at periods like these to see whether we are advancing or retrograding, and we therefore turn with some curiosity to Sir Coutts Lindsay's "Report on Paintings in Oil," the first of the series. "Our demerits," says the writer, "are not difficult to discern. They are more on the surface than those of our Continental neighbours, and happily admit of a simple remedy. It will strike all unprejudiced judges that our faults arise principally from the defective education of our students. The want of knowledge disables their early efforts, and cramps their course throughout their whole career. This blot is the more extraordinary when we consider the practical character of the English race. We are not accustomed to put our artisans to work before they have become thorough masters of their tools and of the method of their work. . . . Owing to this want of an early and systematic training, the works of our greatest masters are often unequal; their drawing and colour halt behind their conception in a manner that a complete art education would have made impossible.

¹ Official Reports on the various sections of the International Exhibition. Edited by Lord Houghton. Fine Arts Division. London: J. M. Johnson and Sons.