THE MASTERS OF VICTORIAN LITERATURE

1837-1897

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its call to patient inquiry, exhaustive research, and the methods of the logical reason. Strictly speaking, however, the progress and victories of science do not fall within the scope of the present work. Only in so far as the records of these have themselves taken literary form, or have been the occasion of calling forth works of a popular rather than a technical character, need they be included in a sketch of Victorian literature. Even so much, however, is more than can be attempted here. Only a very few of the heroes of research and deep thinking can be so much as mentioned within the limits of a work like this.

In the field of science, literature has, during the Victorian period, concentrated its interest on the speculations that have arisen concerning the results of biological inquiry. No scientific subject, indeed, has ever aroused anything like the general interest that has been attracted to the theory of Evolution as illustrated by the researches of Charles Darwin.

Charles Darwin (1809-1882). The name of Charles Darwin will live in the records of Victorian Literature as that of the author of the most remarkable scientific book of the century. *The Origin of Species by Natural Selection* is universally admitted to have been a work of epoch-making significance, and to have revolutionised the whole course of modern scientific thought ; for even where its conclusions have not been accepted, their influence has been deeply felt, and has given colour to all succeeding speculation, especially in the sphere of biological inquiry.

The author of this great work was born at Shrewsbury in 1809, the year in which Alfred Tennyson and Mr Gladstone also were born. His father, a prosperous physician of that town, was, as Charles Darwin assures us, a man of the keenest observation. His grandfather was the famous Erasmus Darwin, the philosophical poet of *The Botanic Garden*, who also had his speculations concerning the Origin of Species. At eight years of age Charles was sent to a day school in Shrewsbury; but even before this time, the inborn tastes of his life had manifested themselves. In various small ways he was even then a collector of plants, insects, and minerals. After a year he was transferred to Dr Butler's school in the same town. His connection as a boarder with this school extended over seven years, and yielded him but little profit. It was a classical school, and he had no aptitude for languages. Evidently his father and his teachers agreed in thinking that he was below, rather than above the average standard of boys. The truth is that the set studies of school were doing nothing to call forth the really remarkable powers that were latent in him. The science of mathematics was not taught, and no provision whatever was made for the development of his quite extraordinary faculty of observation. He has left on record that poetry, including the works of Thomson, Scott, Byron, and especially the historical plays of Shakespeare, had at this time considerable attraction for him. White's *Natural History of Selborne*, and a book entitled *The Wonders of the*

World, were also eagerly read and prized. But according to Darwin himself the best part of his education during the school period was his introduction to experimental philosophy in his father's tool house, where his elder brother Erasmus, a medical student, had set up a laboratory.

In 1825 he accompanied his brother Erasmus to Edinburgh, where for two years he studied in the medical classes of the University. These years also Darwin was disposed to think were wasted. The academical studies had not much attraction for him; and the college lectures, with the single exception of those on chemistry, he found intolerably dull and tiresome. In later life he greatly regretted that he had not persevered with his dissections, on the ground that work of this kind would have been of invaluable service to him. But he could not endure the operating theatre, the two cases he saw there fairly haunting him for many a year afterwards. He was fortunate, however, in securing the friendship of several clever young men of tastes similar to his own. With them he would make excursions in the neighbourhood of the Forth for the purpose of studying marine zoology; and at other times would accompany them to the meetings of the Plinian and Wernerian Societies, and hear papers on Natural History read and discussed. To the former of these, his own earliest papers were presented. Whatever want of profit, therefore, there may have been in his stay at the Northern University, all this doubtless acted as a healthy stimulant on a

young man of his tastes and aspirations ; for he tells us that he was never without the ambition to achieve something in connection with Natural History that would bring him reputation.

In consequence of his father's affluent circumstances, the question of a profession was not with Darwin a serious one. After the two years at Edinburgh, he abandoned all thought of medicine, but seems to have had the Church in view when in 1828 he went to Cambridge. His stay here extended over three years, during which he appears to have had as little interest in academical study as before ; no pursuit, as he tells us, being followed with nearly so much pleasure as collecting beetles. He gives the following proof of his zeal : 'One day, on tearing off some old bark, I saw two rare beetles, and seized one in each hand. Then I saw a third and new kind, which I could not bear to lose, so that I popped the one which I held in my right hand into my mouth. Alas ! it ejected some intensely acrid fluid, which burnt my tongue, so that I was forced to spit the beetle out, which was lost as was the third one.'

The most fortunate circumstance of his stay at Cambridge also is to be found in his scientific intimacies, especially that with Professor Henslow, a man of the greatest scientific attainments in the departments of Botany and Entomology, which also were of greatest interest to Darwin. It was through Professor Henslow that in 1831 he was invited to accompany Captain Fitzroy as naturalist in the voyage

of H.M. ship *Beagle*. This memorable voyage extended over five years, and was considered by Darwin himself to have determined his career, and to have been by far the most important event in his life. There is no further thought of a profession now; he has found his life-work. It is scarcely too much to say that all Darwin's scientific career, all his writings, with all their original contributions to the science of his time, are to be found, in germ at least, within the years of this remarkable voyage. It was not merely that it gave to the young naturalist, and that at an impressionable period of life, the kind of education that comes from extensive travel over many seas and lands, but that it furnished him with unparalleled opportunities for the exercise of a faculty of observation of the very highest order. Already in his twenty-first year the high qualifications of the true man of science assert themselves—his keen observation, his patient industry in collecting facts, his bold generalisations in the explanation of phenomena, and his intense enthusiasm in the cause of science. Looking back upon this time, he used to say that his most vivid and pleasing recollections were of the glories of the tropical forest, in which he had found such unique opportunities for watching the struggle for existence in animal and vegetable forms. His interest in geological phenomena was almost equally great, and it was at this time that he made the immense mass of observations embodied in such earlier works as *Coral Reefs* (1842), *Volcanic Islands* (1844), and *Geological*

Observations on South America (1846). Of these the most important and popular was that on *Coral Reefs*, which showed such a mastery of scientific method, and such an adequacy to explain the facts of the case, that men of science very soon gave its theory of oceanic subsidence their warm admiration and cordial acceptance. Of late years some of its positions have been questioned by Dr Murray of the *Challenger* and others, without however in any way lessening the importance of Darwin's researches.

In 1836 he was back in London, but with a somewhat enfeebled constitution. He had never been altogether free from sea-sickness during the whole five years of the voyage. The effects seem to have remained with him ever afterwards; and it was only by living a careful and retired life, that he was able to accomplish the great works with which his name is associated. His first literary labour after his return was the preparation of his *Journal of a Naturalist on Board* H.M. *Ship* '*Beagle*,' which was published in 1839. It is a work of the greatest interest and value, and still retains its popularity.

In the same year, Darwin married his cousin, Emma Wedgwood, and after a few years' residence in London, went, in 1842, to live at Down, near Beckenham, in Kent. Here he spent the remaining forty years of his life without incident of any kind, other than the publication of his various books, and the carrying on of a correspondence that embraced the foremost men of science of the time. We learn that for more

than twenty years the theory of Evolution to which he has given expression in his greatest work, had been present to his mind; and that during all that time he had been slowly and patiently maturing his arguments, and accumulating the facts by which they were to be supported. Even when, in 1859, *The Origin of Species* was at last given to the world, it was still without much of the apparatus of fact which, according to his design, was to accompany his arguments. He had been startled to discover that others had been working at the same problem, and that, knowing nothing of his researches, they had reached almost identical conclusions.

In June 1858, he received from the eminent naturalist Alfred Russel Wallace, who was then working in the Malay Archipelago, the manuscript of an essay, *On the Tendency of Varieties to Depart Indefinitely from the Original Type*, in which, much to his disturbance, he recognised his own arguments and his own conclusions quite independently reached by another. He lost no time in submitting the paper to his friends, Professor Hooker and Sir Charles Lyell, both of whom had for fifteen years been well acquainted with his own speculations; and on their advice a joint-paper, bearing the names of Darwin and Wallace, was read to the Linnæan Society, *On the Tendency of Species to form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection.* It thus appears that the honours of discovery, if discovery it

can be called, must be divided equally between the two great naturalists.

Longer delay was now impossible, and accordingly in 1859 the work now everywhere known as *The Origin of Species by Means of Natural Selection* was published. It not only attracted great attention, but everywhere gave rise to embittered controversy. It was the popularly received, and also, at that time, the scientific opinion, that species were permanent and immutable ; in other words, that in greater or less conformity to the original type, they had remained the same through all the periods of biological time. Darwin, on the other hand, contended that species were mutable, and that they bore evidence, no less than varieties, of having been developed from earlier and simpler forms. Evolution was no new idea. Others, for example Erasmus Darwin, Lamarck, Robert Chambers, and Herbert Spencer, had anticipated Darwin in the enunciation of it. It was his distinction that in support of this theory he produced a vast array of most interesting and reliable facts showing modification by descent, and illustrating the alleged struggle for existence in plants and animals. He showed what a number of these forms, thus called into life, are continually perishing, and accounted for it by a principle to which he gave the name of ' Natural Selection,' but which Herbert Spencer more happily called ' the survival of the fittest.' In this struggle, according to Darwin, the unfavourable variation, or that which is less generously equipped and can less readily adapt

itself to circumstances, will die out, while the favourable one will survive; the result being the formation of a new species. In his view, the struggle is never-ending. New foes are found in forces that require a more strenuous energy of resistance, or a wider adaptability; and the process of elimination is repeated, the fittest, of course, always surviving. It is possible, therefore, on this hypothesis to go back through all the ages of the life history of our globe, along a series of developments in which the passage backwards is always from higher to lower forms until the beginnings of life are reached in one or more primordial cells. And here the theory is confronted with its most serious difficulty. To the question, 'What then?' it has no answer to give. Darwin himself is frank enough to confess that he cannot explain the life of these cells. The idea of spontaneous generation he unhesitatingly rejects. The student of this theory, indeed, cannot but be struck with the doubts and hesitations of its author. He denies design in nature, but confesses that it is difficult to do so. He opposes Creation and Evolution as irreconcilable alternatives, yet seems to hold the theistic position. He does not shrink from avowing his belief that man also is the product of this slow development, but will not admit that he is sprung from the apes, although of the same stock as they. Objectionable in popular opinion though much of the *Origin* was, Darwin's *Descent of Man* (1871) struck an even harsher note of discord, and roused a still stronger opposition. It cannot, however, be

said to have altered anything. Absolutely no reliable trace of Simian ancestry, or cousinhood, as Darwin in effect puts it, has ever yet been discovered. The earliest human remains, going back to the very dawn of history, are practically identical with those of to-day. The 'missing link' so eagerly sought for has not been found. Science is compelled to acknowledge that the physical distance between man and the ape was as great in the earliest human ages as it is now. And if, notwithstanding this physical discrepancy, we admit the startling similarities of structure between man and the higher vertebrates, what means can be suggested for bridging over the tremendous chasm that separates the intellectual and moral nature even of the lowest man from the highest of the apes?

By the *Descent of Man*, the *Variation of Animals and Plants under Domestication* (1868), and the *Expression of the Emotions in Men and Animals* (1872), Darwin made intensely interesting and important contributions to science, and placed his great theory fully before the world. It remains, however, a theory still. There is and there can be no positive proof that species ever have been formed in the manner described. Even such acute thinkers as Huxley, not unfavourably disposed, have been constrained to acknowledge that so-called 'natural selection' has not been proved to be a fact. Moreover the alternative—Creation or Evolution—is seen to be unnecessary. At the point to which Evolution conducts us, there is still life to be accounted for.

And if so, why not by God and a creative act? And if by one such act, why not by many, either in one period or in successive periods of time? Evolution in some form, although it may not be in the Darwinian sense, is undoubtedly a fact, and this it is the glory of Darwin to have demonstrated. But Evolution is not incompatible with Creation; and devout minds can even feel their reverence quickened by the thought of the Creative Will manifesting itself over long stretches of time in successive and ever-heightening developments of animal and vegetable life.

Outside of these controversies Darwin had put a singularly fresh and vivid interest into the study of certain other departments of natural history, by his fascinating *Fertilisation of Orchids* (1862), *Climbing Plants* (1864), *Insectivorous Plants* (1875), *Movement in Plants* (1880), and *Earthworms* (1881).

Darwin's books owe comparatively little to the graces of style. He wrote slowly, and confesses to have found composition difficult. It was not therefore to the literary quality of his work, but to the interest attaching to the numberless observations of facts that he recorded, and the startling nature of the speculations to which they led him, that the extraordinary success of his books was due.

All those who knew Darwin have recorded the charm of his personal character and manner. He was genial and affectionate, simple and frank, modest and diffident. None of his opponents could have been more ready to acknowledge the force of an

argument that told against his theories than he was himself. His concessions indeed were so many and so important, that towards the close of his life but little was left of the theory of Natural Selection, of which he had made so much. Orthodox theological opinion had been up in arms against him, because his speculations were supposed to be dishonouring to human nature, and hostile to the conception of a personal Creator. But Darwin, while boldly accepting the conclusions to which his scientific opinions led him, deprecated with a fine frankness that undue stress should be put upon his private religious opinions, on the ground that the religious sentiment had never been strongly developed in him. There were further limitations, growing with his years, that have a peculiar psychological interest. He mentions that up to the age of thirty, he derived great pleasure from certain of the poets, including Wordsworth, Coleridge, and Shelley, but regrets that afterwards this taste entirely left him, so that he found the attempt to read even Shakespeare, whose historical plays especially used to have such an interest for him, nauseating and unpleasant. In the same way, an early taste for pictures also disappeared, as did much of his former enjoyment in music. The only apparent exception to this decay on the emotional, imaginative, and æsthetic side of his nature, is to be found in his life-long enjoyment of novel-reading, a part of every day being spent either in reading, or having read to him, a portion of some popular fiction.

He died at Down on the 19th of April, 1882, and was buried in Westminster Abbey, a few feet from the grave of Sir Isaac Newton.

The heated controversies that arose with the publication of the *Origin of Species* owe something of their bitterness to the vehemence both of defence and attack shown by such writers as Professors Huxley and Tyndall, who, in support of this new departure in scientific thought, brought to its advocacy a lucidity and eloquence of statement, a brilliance and force of imagination, an amount of general culture, and a power of literary expression to which Darwin could lay no claim.