

Book Reviews

Charles Darwin. A Man of Enlarged Curiosity

By Peter Brent

Heinemann,

536 p., 1981, London, £ 12.50

Harper and Row, U.S., \$19.95

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As one of the principal architects of the intellectual framework of our age, Charles Darwin inevitably has attracted a great deal of attention from biographers. In addition to the three-volume *Life and Letters* edited by his son Francis Darwin, in which Charles' own "Autobiography" first saw print, there have been some 60 separately published biographies of this greatest of Victorian scientists, written in or translated into a variety of languages. In this year of 1982, the centenary of his death, a further flurry of Darwin biographies surely is to be expected.

The work here reviewed appeared a little ahead of the centenary and may well prove, in other ways, to be the foremost of the new crop. Its author professes an interest in the conflict between science and religion, so that this aspect of Darwin's life and work might have been expected to be given disproportionate stress. Fortunately this has not happened; instead, Brent has presented his readers with what is an especially sensitive and searching analysis of Darwin, as scientist certainly but in particular as human being. This has been achieved despite inherent difficulties for, as Brent writes:

"Darwin himself remains in many ways a mysterious figure. The paragraph in which he explained to [his wife] Emma his increasing love of solitude is almost the only passage of genuine introspection in his writings. He offered to the world a self that turned away all con-

trovery and pre-empted all criticism. He concealed the firmness of his purpose behind the pliability of his manner. He was always ready with a nostalgic protestation, but it was the friends who were useful to him whom he saw: Henslow, Lyell, Hooker a little later. He was warm and generous, yet careful enough to keep account books in which he noted the spending of every halfpenny. He was always disarmingly friendly and affectionate, but, as with his marriage, one detects elements of calculation in his behaviour that hint at inner steel" (p. 316-317).

Yet this was only a part of Darwin's character:

"He was a man of active senses, delighting in symmetry, rhythm, landscape, in smells and sounds and colours. Despite the intensity of his thought, there was nothing arid in his attitude to life. He had, too, a clear, untormented approach to sexuality; it was one fact among others determining the behaviour of advanced organisms. He had a vivid and easily aroused imagination, and turned this to his intellectual advantage, allowing his thoughts their first form in the easy shapelessness of reverie, his 'castles in the air.' He was, for all his impetuosity and warmth of feeling, capable of an almost frightening objectivity, regarding his most intense emotions with laboratory detachment. He was . . . almost preternaturally aware; no detail, no passing question or hint of an answer, was too small or fleeting for him to seize on" (p. 320).

In attempting the challenging task of portraying, and enabling an understanding of, this complex person, Brent has cleared away a number of myths and has elicited new details that flesh out his picture. He disposes very effectively of that ridiculous image, so beloved of psychologists, of Charles' father, Dr. Robert Darwin, as a monster whose tyrannical demands threw a shadow over his son's whole life. Instead, clear evidence is presented that an understanding and

mutually affectionate relationship existed between them - one that, indeed, was unusually benign in those times of the Victorian "heavy fathers." More unexpectedly, we are given a novel portrayal of a youthful, amorous Charles through the recounting of his abortive love affair with the beautiful, frivolous Fanny Owen. Charles' illness is shown clearly to be psychosomatic in character and - though always uncomfortable and often painful for him - a successful, albeit unconscious, device for Charles' isolation from a world of distractions. Indeed, it was a cocoon from which successively there would emerge the butterflies of his scientific theories and without which these might never have been formed.

Mr. Brent, then, is interested in Charles Darwin himself; his life, his development, his environment and those special characteristics that made him unique. The interest extends to Darwin's immediate family, but not beyond. The other scientists upon whom Darwin's work particularly depended - Sedgwick, Henslow, Lyell, Hooker, Wallace, Huxley, Romanes - are given proper mention, but scarcely come alive in these pages; and scant information is given about such lesser figures of 19th-century science as the "noted geologist, Dr. Fitton" (p. 323) - noted for what, the reader wonders? - or "the zoologist Albert Gaudry" (p. 445), a French scientist whose work in palaeontology arguably was more important than in zoology. There are a few errors in these mentions; the Scottish engineer Henry Fleeming Jenkin, for example, is consistently miscited as "Jenkins" (p. 449-450) and the contemporary palaeontologist R.P.S. Jeffries appears in unfamiliar guise as "R. Jeffries" (p. 526). Clearly Brent's attention was not engaged by these other figures; and, indeed, it is understandable that the giant in the foreground should overshadow them.

To a scientific reader, there are a number of disappointments and some minor irritations. Among the latter are such slips as the omission of the initial capital from Carboniferous, the bewilder-

ing reference to "the shellfish genus *Brachiopoda*" (p. 402) and an impercipient and outdated assessment of the fossil record (p. 370). The former are, however, more significant. Neither in the account of Darwin's discovery of the remarkable concentration of fossil vertebrate bones at Punta Alta, Argentina, nor of his scientifically crucial visit to the Galapagos Islands is there any sense of the excitement Darwin must have felt, even though it shines out from the pages of his own *Journal of Researches*. Admittedly Brent is not a trained scientist, but other writers, also not scientists, have succeeded in reflecting this excitement. It comes across much better in, for example, Alan Moorehead's *Darwin and the Beagle* (1969).

Yet Brent has understood very clearly, and set down with equal clarity, the special abilities that made Darwin such an outstanding observer and interpreter of nature:

"His was a peculiar mixture of qualities. On the one hand, there was the jack-daw catholicity that marked his search for facts and near-facts, his collection of observations both professional and amateur, his grab-bag of correspondence in which proof, memory and rumour jostled side by side. On the other hand, there was his leaping gift for synthesis, for seeing the meaning beyond the detail, for making unsuspected connections and so giving a retrospective significance to what his voracity had earlier collected - on the basis of which he then collected even wider and farther. It was a mixture that made him the ideal person to operate in the confused and confusing conditions of his time". (p. 336).

Perhaps this is not the best biography from which to gain a full picture of Darwin's scientific achievements; perhaps it does not present so thorough or so exciting a picture of the controversy following the publication of *The Origin of Species* as does, say, William Irvine in *Apes, Angels and Victorians* (1955). However, this biography *does* present the most complete - and, arguably, the most sympathetic - portrait of Darwin himself so far to be published. Both Darwin's failures and his successes, as scientist and as human being, are made equally comprehensible as one reads these pages. Maybe Darwin is indeed destined to remain, in some respect, a mysterious figure; yet I consider Brent has come closer to making Darwin comprehensible than any previous biographer. Most sincerely do I congratulate him on that achievement.

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Planetary Science: A Lunar Perspective

By Stuart Ross Taylor
Lunar and Planetary Institute, Houston
1982, 481 + xix pp.

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It is now thirteen years since the first 21.7 kilograms of rock were brought from Mare Tranquillitatis to Houston. Present at the arrival of the first samples, as a member of the Lunar Sample Preliminary Examination Team, S.R. Taylor has been a keen participant in the research programme on lunar materials ever since. His 1975 book "Lunar Science: A post Apollo View" has stood high on the list of essential reading for anyone interested in following the development of lunar research. The present volume is much more than an update of the previous book; it is a wholly new conception. While presenting a thorough review of progress to date on returned lunar materials, the author has woven into each aspect of the story a brief view of the corresponding state of our knowledge for the other solid objects of the solar system. The proportion of the text devoted to non-lunar matters is however relatively small. Thus for example the 85 page chapter on "Planetary Crusts" devotes four pages to non-lunar crusts, the chapter on "Planetary Surface" has one non-lunar page, on rare gases and atmospheres of planets. The penultimate chapter, on the "Origin and Evolution of the Moon and the Planets", is the most successful at integrating the lunar data into a synoptic view of the solar system.

But let the reader not think this reviewer was dissatisfied with the book for its lack of planetary perspective. It is an enormously successful book, thanks to the ability of its author to synthesize the vast bulk of data that has poured out of the Lunar and Planetary Science Conferences over the past twelve years, not to mention the countless articles in *Icarus*, *Moon* and other journals. When one considers that many of the leading petrologists and geochemists of the world have been deeply engrossed in this study for over a decade, it is clearly a formidable task to wrap it all up in a single relatively slim volume. As one might expect, considering Taylor's research interests, the treatment tends to focus on the geochemical aspects of the problem.

Petrology is largely introduced to explain the chemical features of the rocks, and many of the interesting textural details that are unique to lunar rocks are treated rather sparingly. Mineralogy is hardly dealt with at all. However, wherever such deficiencies exist, Taylor has evidently been quite conscious of them, for he considerably directs the reader to the most thorough treatments of the subject available in the current literature.

Taylor's expertise in geochemical aspects of lunar research has allowed him to present a very illuminating comparison of the numerous theories constructed to account for the complexity of chemical and isotopic data on lunar materials. As far as this reviewer can discern, his presentations are highly objective and replete with literature citations. The citations are generally accompanied with pithy abstracts of the cited work, to simplify the task of the reader curious enough to follow out a line of argument. Indeed, the book is a treasury of citations, a veritable Reader's Guide to the weighty tomes that have been emerging each year from Houston. That in itself makes the book an essential item for anyone who is not patient enough to wade through the dozens of papers on each detailed aspect of chemistry, or petrology of the returned samples.

In summary, I would recommend this book highly to anyone interested in keeping abreast of the lunar investigations. Those interested in the petrology or mineralogy of the rocks will be disappointed, as will those who buy the book sight unseen, on the basis of its title, taking it to be a text on planetary science. But, given the enormous complexity of the rocks which have been found on the moon, and the tremendous insights that the geochemical analyses of them have produced, it is altogether appropriate that this synthesis of the current state of knowledge should dwell intensely on that aspect. Furthermore, it is fortunate that the task of synthesis should have been taken up by so gifted a writer, and one whose purview is not limited to the pages of the Lunar and Planetary Conferences, but can usefully and entertainingly include references to Pontius Pilate, Charles Lyell and the molecular biologist Jacques Monod.

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