

CHARLES DARWIN : *IMPRIMATUR!*

by

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*Charles Darwin's Beagle diary*, ed. Richard Darwin Keynes. Cambridge University Press, 1988. Pp. xxix + 464. £35. ISBN 0-521-23503-0.

*Charles Darwin's notebooks, 1836–1844* ed. Paul H. Barrett *et al.* Cambridge University Press, 1987. Pp. viii + 747. £65. ISBN 0-521-35055-7.

*A calendar of the correspondence of Charles Darwin, 1821–1882*, ed. Frederick Burkhardt & Sydney Smith. New York and London: Garland Publishing Inc., 1985. Pp. 690. £37.50. ISBN 0-521-35055-7.

*The correspondence of Charles Darwin*, ed. Frederick Burkhardt & Sydney Smith. Cambridge: Cambridge University Press: Volume 1 (1821–1836), 1985. Pp. xxix + 702. £32.50. ISBN 0-521-25587-2; Volume 2 (1837–1843), 1986. Pp. xxv + 603. £32.50. ISBN 0-521-25588-0; Volume 3 (1844–1846), 1987. Pp. xxxii + 523. £32.50. ISBN 0-521-25589-9.

Darwin scholars have long had access to a substantial body of his correspondence in print, thanks to the three-volume *Life and letters* and the two-volume *More letters* edited by his son Francis. Letters between Darwin and John Henslow were published by Nora Barlow, who also edited the *Beagle* notebooks and diary. A more intense interest in the discovery and publication of the theory of natural selection began in the 1960s, following the consolidation of the modern synthesis with genetics. In the early decades of this century Darwinism still had substantial rivals as a scientific theory. Darwin himself was perceived as the man who had 'started the ball rolling' in the establishment of scientific evolutionism, but not necessarily as the founder of the dominant theory of the evolutionary mechanism. But once the modern synthesis of Darwinism and genetics was firmly established, its proponents began to see the original creation of the selection theory as the main event in the history of evolutionism. Sir Gavin De Beer and Sydney Smith began a renewed effort to collect and publish Darwin's private papers. Historians of science were encouraged to investigate the treasure-trove that began to accumulate at Cambridge University Library. The books reviewed here represent the latest thrust toward the publication of Darwin material, a thrust that may well end with virtually everything that survives being available on the library shelf.

Publication of the material is, of course, intended to facilitate the work of historians trying to understand how Darwin worked. But even before the present phase of publication began, scholars working directly with the original papers had shown that they revealed a complex world of creative thought and social interaction. If the original founders of the project had hoped that the papers would merely allow the fleshing out of the traditional story of discovery, they were to be greatly disillusioned. The 'Darwin industry' has already overturned many myths surrounding his life and has suggested that the discovery of natural selection involved components that had been carefully hidden by earlier editors such as Francis Darwin. The notebooks and letters now published make the evidence for this available to all.

The voyage of the *Beagle* is traditionally seen as a turning point in Darwin's career. By the time he returned to England he was determined to become a full-time naturalist and had already made the crucial observations in the Galapagos Islands that would convert him to evolutionism. Yet the *Journal of researches* (still available in modern reprints) gives an interpretation of the voyage that is shaped by hindsight. By the time he wrote the popular edition of this book Darwin's theoretical interests had changed, and the *Journal* is not a reliable guide to the state of his thinking while actually on the voyage. His diary, and the letters he wrote home at the time, are thus valuable guides to the historian seeking to understand the interaction between his thoughts and his observations. The text of the diary was originally published by Nora Barlow in 1933, but this new edition by Richard Darwin Keynes has been edited to match the standards adopted in CUP's edition of the letters. It thus preserves the original spelling and punctuation as far as possible.

The Darwin letters project itself is one of the major scholarly enterprises of modern times. The *Calendar* lists 13,889 letters to and from Darwin, giving some idea of the immense efforts that the editors have undertaken to locate all the surviving material. But the *Calendar* is no mere list: it gives a brief outline of the contents of every letter, along with a biographical register and an index allowing the reader to locate all the letters to and from a particular individual. It is thus an invaluable tool for tracing Darwin's changing interests and the growth of the communications network that he established in order to gather information and (later on) to disseminate his ideas. It also shows how his personal life intruded into his scientific work. No one could fail to be touched by the sudden change of direction in letters 1399–1426 when the Darwin family confronted the illness and death of their daughter Anne in 1851. Yet within a week of the funeral, the scientific letters begin again as Darwin tried to drown his sorrows in work.

The decision to publish all of the surviving letters was a bold one, given the sheer amount of material involved. The three volumes reviewed here (a fourth has just appeared) take us as far as 1846 and letter No. 725 in the *Calendar*. A quick

calculation suggests that, at this rate, it will take over 50 volumes to complete the series. (At first I thought my estimate was distorted by the fact that there were few short letters written to and from Darwin during the *Beagle* voyage, but in fact volume 1 is longer than the others reviewed here, as though to compensate.) It will certainly be many years before the end of the project is reached, and it is to be hoped that the sheer number of letters in the post-*Origin* years does not lead to a faltering of effort. The scale of the project is all the greater because the editors have received unanimous praise for the quality of their work. The Darwin letters are being processed according to the highest modern standards, and each volume is complete with a biographical register, bibliography, and index.

The first volume covers Darwin's early life, his years at Edinburgh and Cambridge, and the voyage of the *Beagle*. Historians such as Jonathan Hodge, Phillip Sloan and Frank Sulloway have already offered us a very different picture of the young Darwin to that presented in orthodox accounts. The letters show that the Edinburgh experience was far more important than Francis Darwin believed. Although Darwin rejected Robert Grant's radical Lamarckism, he was inspired with a major interest in invertebrate zoology that would shape his theoretical concerns and his observational activity while on the *Beagle* voyage. At Cambridge he first became interested in geology, and the letters written while on the voyage (coupled with the diary) show that his real interests at this time were in the areas of invertebrate zoology and geology. He missed the significance of the Galapagos fauna until he was on the point of leaving the islands because birds and tortoises were simply not his major concern. The *Journal of researches* – written after a later consideration of the Galapagos species had converted him to evolutionism – show little sign of his original interest in the invertebrates (apart from the theory of coral reefs, which was really a contribution to geology rather than to his zoological programme). The *Journal* also conceals the fact that it was some time before Darwin became converted to Lyell's uniformitarian geology, although the point of conversion is quite clear in the letters he wrote home at the time.

Volume 2 includes the years Darwin spent in London, his marriage, and his move to Down House. These were the crucial years in which the theory of natural selection was born, although there is little direct information on his 'species work' in this volume because he let no one know that he had discovered a new mechanism of evolution. Contrary to popular belief, however, he did let other naturalists know that he was investigating the species question, and letters to G.R. Waterhouse show that he was already debating the implications of evolutionism for taxonomy with sympathetic naturalists. Here we see the start of the communications network that Darwin built up to help him gather information and to sound out others on the question of evolution. This volume is also useful for the evidence it supplies on Darwin's geological activities in London. His secret theorizing was at first conducted against a background of highly public involvement in the debates of the

Geological Society, where he made his name as an influential scientist who could talk on equal terms with Lyell and the other big guns. He was also deeply involved with the publication of the results of the *Beagle* voyage, for which he obtained a grant from the government.

Volume 3 charts the expansion of the group of naturalists with whom Darwin interacted on the species question. The most important addition to the network was the botanist J.D. Hooker, with whom Darwin soon began an extensive correspondence on the problems of geographical distribution. In 1844 he wrote the 'Essay' setting out the details of his theory as it stood at the time, making arrangements for its publication in the event of his early death (his health was already a matter of some concern). As yet, however, even Hooker was left in the dark as to the nature of the theory that Darwin had created.

If the letters throw little direct light on the process by which the selection theory was discovered, the notebooks give us an unrivalled glimpse into the workings of a creative mind edging its way toward a radically new interpretation of nature. The notebooks were originally published by Sir Gavin De Beer in the 1960s, but this splendid new edition makes them far more accessible to scholars. Here we have the main sequence of Notebooks A–E and M and N, dating from 1837 to 1839, in which Darwin recorded his thoughts as he pondered the question of how evolution might work and tried to explore the theory's implications for mankind. We also have the Red Notebook, begun at the end of the *Beagle* voyage, along with the 'Old and Useless Notes,' the Glen Roy Notebook, the zoological notes from Edinburgh, and an abstract of a book on natural theology by John Macculloch. As with the letters, this new edition of the notebooks preserves Darwin's sometimes eccentric spelling and punctuation. It also indicates the original pagination of the text – a critical point given the number of references to the notebooks already in the literature. The editors, Paul Barrett, Sandra Herbert, and David Kohn, provide useful introductory comments for each notebook.

It would be impossible to outline here the immense debate on the origins of the selection theory that has centred on these notebooks during the last decade or more. Suffice it to say that we now have a far more extensive view of the influences that fed into Darwin's thinking than was allowed in the picture constructed in his *Autobiography* and by Francis Darwin in the *Life and letters*. Jonathan Hodge in particular has stressed the importance of Darwin's interest in the question of generation (reproduction), arguing that the selection theory arose out of Darwin's efforts to mediate between the geographical insights of the *Beagle* voyage and his conviction that sexual reproduction was a process designed by the Creator to give living things the ability to adapt to their environment. The roles played by his study of animal breeding, and by his reading of Malthus on population, are now seen as far more problematic than they were in the orthodox interpretation of the discovery. On the strength of the notebooks many scholars are now convinced that

Darwin did not at first see the radical implications of his new world view. He remained, for the time being at least, a theist and an exponent of the view that evolution must in the long run generate progress.

The preservation of a vast collection of Darwin papers has served historians well. Whatever the expectations of those who first created the 'Darwin industry', the papers have allowed us to see the wide range of influences that shaped the creation of the selection theory. A number of traditional myths have been exploded or exposed as distortions imposed by hindsight. Darwin developed a radical new vision of how nature might develop, but he preserved some very traditional ways of thought especially in the field of reproduction. We now have a better knowledge of how he worked and of how he strove to communicate his ideas to others. This latter aspect of his activities will be illuminated even further by later volumes of the letters. But was it really necessary to publish all this material? After all, a great deal has already been done by historians who made regular pilgrimages to Cambridge so that they could consult the originals. The expense and scholarly time invested in this project must have been made on the assumption that a return would be paid through the increased activity made possible by easy availability. Let us hope that all the cherries have not been picked by those who explored the orchard before the gates were thrown open to all.

Of course there is more to it than this. Projects such as the Darwin papers are sustained by an interest that goes far beyond the narrow world of scholarly exegesis. Darwin is a big name because he has been identified as a hero of modern science, the founder both of general evolutionism and of the currently dominant theory of how evolution works. Many biologists who have no intention of doing history themselves will give some support to the promulgation of the hero's legacy. Publishers realize that Darwin is a name capable of attracting wide attention, a figurehead by which the history of evolutionism is identified. Historians of science cannot altogether be blamed for allowing this kind of interest to dictate the direction of their research. The subject needs highly visible symbols that can easily be recognized both by scientists and by the general public. In the field of the history of evolution theory only Darwin's name could have attracted the level of interest and financial support (mostly, it must be noted, from America) that makes such a project possible. To return to the metaphor of investment, Uncle Sam may yet reap a profit if large numbers of research proposals involving a trip to Cambridge are checkmated by the availability of the Darwin papers in every decent library.

We must, however, be very careful to take note of the limitations imposed by this kind of history. Those who are interested in the discovery of the selection theory have much to gain from the publication of Darwin's papers. The complete letters will throw valuable light on the complex process by which Darwin introduced the scientific community to his new idea and induced the majority of naturalists to take it seriously. But however important Darwin's role, he was not the only person

devoted to promoting the idea of evolution in the mid 19th century. If one's interests are dictated by the need to trace the origins of modern evolutionism, then the concentration on Darwin seems natural enough. But if one wants to address the rather different question of how evolutionism came to dominate 19th century thought, one must recognize that the Darwinian network was not the only centre of activity. The very fact that natural selection did not immediately become the most popular theory suggests that the impact of the *Origin of species* must be evaluated with some care. Darwin was able to present his theory in a way that allowed it to break down barriers that were already being weakened by a general pressure toward an evolutionary view of nature. He was able to do this despite the fact that natural selection turned out to be unacceptable to Victorian tastes except in a bowdlerized form that does not reflect what modern biologists see as Darwin's key insight. If historians of Darwinism now have a more complex image of how the theory developed, historians of evolutionism are beginning to recognize that there were also non-Darwinian components that played a major role in making the general idea of evolution acceptable both to scientists and the general public.

The non-Darwinian components in 19th century evolutionism are important, but they will not be properly represented in the Darwin papers. Darwin had sometimes to deal with those who proposed non-Darwinian theories, but he seldom discussed their ideas at length and often broke off relationships altogether, as in the case of Richard Owen. We can already see this problem emerging in volume 3 of the letters, which covers the year (1844) in which Robert Chambers's anonymous *Vestiges of the natural history of creation* appeared. Darwin's disapproval of Chambers's compromise with natural theology is clear, yet the book is mentioned only a few times. The letters thus give no impression of the public interest in *Vestiges*, nor of the impact it had in persuading other naturalists (including A.R. Wallace) to begin thinking about evolutionism. There is mounting evidence that *Vestiges* played an important role by making the idea of progressive evolution seem respectable within liberal circles. It also helped to determine the progressionist framework within which Darwin himself would be interpreted.

As more of the Darwin papers become available, historians who take a broader perspective on the development of Victorian evolutionism must continue to emphasize that these volumes do not contain the whole story. The sheer quality of the editing and presentation must not be allowed to blind us to the vast mass of material reflecting non-Darwinian attitudes to organic development that will never be seen outside the archives. Historians of science cannot afford to ignore the heroes of discovery identified by modern orthodoxy, but they have a duty to remind scientists that the facts which seem so obvious today were once far more problematic. The Darwin industry is centred on a myth which defines Darwin as the key figure in the history of evolutionism. Like most myths, this is a distortion of the true picture: Darwin was important, but he functioned within a complex intellectual and social

environment containing elements that have no modern counterpart. The true picture may become more difficult to see as the myth gathers substance through its imposition of a selection policy dictating which archival material is thought suitable for publication. We do need to understand the complex process which allowed Darwin's theory to play such a vital role in stimulating the development of evolutionism. But we also need to remember that the Victorians welcomed the *Origin of species* for reasons that do not necessarily correspond to those that would be acceptable to a modern biologist.