

The Collected Papers of Charles Darwin. Edited by Paul H. Barrett. The University of Chicago Press, Chicago and London, 1977. Two volumes, xviii + 277, viii + 326 pp. \$20.00 each.

"Charles Darwin is one of the greatest among the creators of modern science. The phenomenon of creativity is little understood, and the inner workings of a creative genius are an enigma. Anything that can throw light on these phenomena is interesting."

One can scarcely improve on these words of Theodosius Dobzhansky, which open the foreword to the first of these two volumes containing 152 of Darwin's scientific articles. Although most of Darwin's books are widely available, these short articles are not, and Dobzhansky confesses that, despite his own lifelong interest in Darwin, he found that he had read only four of them. The articles span 50 years, from an 1832 letter to six titles in 1882, the year of Darwin's death. According to the editor (Professor of Natural Science at Michigan State University), all of Darwin's known articles are included, and his letters to editors, notes, and prefaces to books, as well as two papers by Darwin's sons, an unpublished student paper by Darwin, and the most complete bibliography of Darwin presently available.

It seems to me that no one determined to understand the phenomenon of evolution and its history in human thought—whether biologist, philosopher, historian, or for other reasons intellectually curious—could fail to be gratified at having these two volumes available. They are the kinds of books one can pick up for a brief or lengthy interlude and never fail to be fascinated. One finds himself entering another era, immersed in a more personal and informal understanding of Darwin's thought and progress than may elsewhere be available. One is awed repeatedly over the breadth of the man's knowledge and interests, his problem-solving ability, his patience, and his capacity to bring to bear on the questions he judged crucial evidence from a staggering variety of directions. As an evolutionary biologist I found myself humbled continually by glimpses into how much Darwin understood a century and a quarter ago, though I confess as well to feelings of gratitude when I thought I detected occasional evidence of inconsistency of argument or failure of staunchness on stands I would now regard as unassailable.

Within the past 20 years dramatic refinements of evolutionary theory have revived interest in the analysis of natural selection and stirred new efforts to determine how the human species has been produced during evolution and what that means for our views of ourselves and our future. It is a problem that seems to be surpassed by others now and then only because we are temporarily stymied in the paradoxical task of self-analysis. Life on earth remains the most complicated phenomenon we are likely to encounter in the universe for some time to come, and evolution is the only scientific theory advanced to account for it. Yet philosophers return to the physical sciences for succor regarding the nature of science and scientific

theories, and continue to wonder how evolution differs from the other great theories, how biologists use it, and why biology advances brilliantly on its basis. I think these volumes help answer the question. From outside biology it is not difficult to fail to comprehend both the unmatched diversity and complexity of living phenomena and the reasons why biologists, faced with apparent contradictions to evolutionary theory, regard them not as evidence of its failure but as topics of special interest to pursue in evolutionary terms. This kind of acceptance of natural selection can derive—perhaps is inevitable—from the thoughtful accumulation of everyday knowledge of organism after organism. Perhaps no biologist since Darwin has surpassed him in this regard, particularly with the concomitant skills of generalizing, and of testing of hypotheses in natural situations. How he did these things emerges from these volumes, and Professor Barrett, as Dobzhansky notes, “has earned the gratitude of all students of Darwin and of biological evolution by preparing this two-volume anthology”

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