

Letters to the Editor

Darwin and the Theory of Evolution

I have read with interest the article by Tim M. Berra concerning the work of Charles Darwin (*ABT* 42:8). Far too many people equate Darwin only with his theory of natural selection and fail to recognize that, above all, his insatiable curiosity caused him to deal with biology in its broadest sense.

It is unfortunate that either the original manuscript or the typography used when the article was set has resulted in Darwin being credited twice with the "Theory of Evolution," capitalized as though it were either a major publication or a major pronouncement on the part of Darwin. Darwin was not the author of the theory of evolution. The concept of evolution developed in the minds of the early Greeks by at least 600 B.C.

The term "evolution" occurs nowhere in the first edition of the *Origin of Species*, and only the final word on page 490, "evolved," refers in the past tense to an unfolding of life forms. Lamarck, Haeckel and Darwin, three of the greatest 19th Century evolutionists of Europe, never used the word "evolution" in the original editions of their works. The word "evolution" in Darwin's day was firmly tied to a concept of progress, and Darwin rejected the concept that evolution and progress were synonymous.

It was Herbert Spencer who used the term "evolution" as descent with modification. In his *Principles of Biology* (1864-67) the word "evolution" appears frequently as a synonym for organic change. Darwin, however, rejected the idea that organic change led to an abstract idea of progress, but rather interpreted it

as leading only to increasing adaptation between organism and environment. It is still a popular concept in the lay mind that evolution and progress are synonymous, and that evolution leads only to improvement.

Scientifically, "evolution" is used in the Spencerian sense of descent with modification and not in the vernacular sense of progressive development. Thus, referring to Darwin's "Theory of Evolution" is to imply an unintended insult, as Darwin preferred "descent with modification" and was never comfortable with the term "evolution."

In the segment "Books About Darwin," there is little to indicate Darwin's interest in plants even though, of the major publications cited earlier, fully a third deal directly with plants. A life of Darwin that emphasizes his contributions to botany is by Allan, M., 1977, *Darwin and His Flowers: The Key to Natural Selection* (New York: Taplinger, 318 p.) This work considers Darwin as a botanist and gives a different perspective to his contributions by so doing. It is a worthwhile addition to the books about Darwin.

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Berra Responds

The stated purpose of my article was to point out Darwin's other accomplishments, not to give a history of the concept of evolution. Certainly, a host of evolutionary ideas preceded Darwin's formulation. This is implicit in the bibliography. The fact remains, however, that it was Darwin's well-reasoned

account and thorough documentation which carried the day. When a modern biologist writes of evolution for the educated public s/he means "change of gene frequency" (a functional definition) that Darwin knew as "descent with modification" (a descriptive definition). I am well aware of the various misconceptions of some members of the public about evolution; however, I don't see much merit in exploring the other meanings of the word that are not germane to the purpose of the article. I pointed out Darwin's use of "evolution" in the 6th edition of *The Origin*. I don't want to engage in nitpicking about capitalization. Suffice it to explain that capitalization of Darwin's Theory of Evolution is simply an editorial preference of mine for added emphasis of Darwin's major pronouncement. I do not deny that many others offered faulty evolutionary hypotheses which created the intellectual milieu in which Darwin operated. However, Darwin offered THE Theory of Evolution (the one that works)! For further reading on Darwin's originality I recommend the following: Ghiselin, M.T. 1969. *The triumph of the Darwinian method*. University of California Press, Berkeley, 287 p. and Ghiselin, M.T. 1980. a review of *The Darwinian Revolution* by M. Ruse in *Systematic Zoology* 29:105.

Evolution and Creation

I would like to comment on Mary Lou McReynold's and Wayne Moyer's Letters to the Editor in the September issue of *ABT* (42:6). Apart from the "scientific-ness" of creation versus evolution, there is another aspect of the controversy of