

## LITERATURE REVIEWS

*Readers are invited to submit reviews of current literature relating to origins. Mailing address: ORIGINS, Geoscience Research Institute, 11060 Campus St., Loma Linda, California 92350 USA. The Institute does not distribute the publications reviewed; please contact the publisher directly.*

### NEO-DARWINISM IS NOT DEAD

ARGUMENTS ON EVOLUTION: A PALEONTOLOGIST'S PERSPECTIVE. 1989. Antoni Hoffman. NY and Oxford: Oxford University Press. xiii + 274 p. Cloth, \$29.95.

*Reviewed by L. J. Gibson, Geoscience Research Institute*

This book is written as a critical analysis of certain recent evolutionary concepts proposed as alternatives to Neo-Darwinism. Hoffman is a well-known European paleontologist, and his thesis is that Neo-Darwinism is much better off than some of its detractors seem to believe.

The first five chapters act as an introduction and provide a background for the next seven chapters, which contain the real argument of the book. After dismissing creationism and puzzling over transformed cladism in Chapter 1, Hoffman briefly describes some of the challenges to orthodox Neo-Darwinism in Chapter 2. These include controversies over the relative importance of natural selection, the role of ontogenetic patterns, the decoupling of microevolution and macroevolution, and the neutral theory of evolution. Chapter 3 contains a brief summary of modern Neo-Darwinian evolutionary theory. The value of the fossil record is discussed in Chapter 4. Particular applications include paleoecology, hypotheses concerning phylogeny, and establishing time correlations. This chapter ends with the statement that uncertainties in the fossil record do not make it worthless, but it must not be taken at face value. This is a surprising statement to hear from a paleontologist. In Chapter 5, Hoffman discusses some philosophical aspects of the difficulty of reconstructing historical events. Two points of interest here are the difficulty of disproving any hypothesis, and the danger that one's view of nature may determine one's approach to inquiry.

The next four chapters are grouped under the heading "Macroevolution." Chapter 6 concentrates on an unhelpful effort to give a

suitable Neo-Darwinian definition to the term macroevolution. Punctuated equilibrium is dissected in Chapter 7, after which the pieces are discarded one by one. Whether species should be treated as individuals or as classes is a philosophical question discussed but not answered in Chapter 8. In Chapter 9, Hoffman characterizes the concept of species selection as an explanation in search of phenomena; in other words, a concept built on imagination rather than data.

Chapters 10 through 12 discuss various aspects of “megaevolution,” which Hoffman considers (Chapter 10) to mean the largest-scale supra-specific patterns in space and time. Mass extinction is the subject of Chapter 11. The periodicity of mass extinction is dismissed and even the reality of mass extinctions as worldwide or instantaneous events is challenged. Supposed diversity patterns through the Phanerozoic are discounted in Chapter 12, with the conclusion that so-called mega-evolutionary phenomena are merely aggregations of microevolutionary phenomena. In Chapter 13, the concluding chapter, Hoffman emphasizes the individualistic nature of living organisms and processes affecting them.

Throughout the book, Hoffman admirably maintains a posture of open-mindedness to new data. Although he does successfully point out weaknesses in the arguments he attacks, I did not find answers to the problems pointed out by these alternatives. Nevertheless, Hoffman has shown that Neo-Darwinism is not ready to give up yet.