



Reinventing Darwin: The Great Debate at the High Table of Evolutionary Theory

Niles Eldredge

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DESCRIPTION

An insider's provocative account of one of the most contentious debates in science today

When Niles Eldredge and Stephen Jay Gould, two of the world's leading evolutionary theorists, proposed a bold new theory of evolution—the theory of "punctuated equilibria"—they stood the standard interpretation of Darwin on its head. They also ignited a furious debate about the true nature of evolution.

On the one side are the geneticists. They contend that evolution proceeds slowly but surely, driven by competition among organisms to transmit their genes from generation to generation. On the other are the paleontologists, like Eldredge and Gould, who show in the fossil record that in fact evolution proceeds only sporadically. Long periods of no change—equilibria—are "punctuated" by episodes of rapid evolutionary activity. According to the paleontologists, this pattern shows that evolution is driven far more by environmental forces than by genetic competition.

How can the prevailing views on evolution be so different? In *Reinventing Darwin*, Niles Eldredge offers a spirited account of the dispute and an impressive case for the paleontologists' side of the story. With the mastery that only a leading contributor to the debate can provide, he charts the course of theory from Darwin's day to the present and explores the fundamental mysteries and crucial questions that underlie the current quarrels.

Is evolution fired by a gentle and persistent motor and fueled by the survival instincts of "selfish genes"? Or does it proceed in fits and starts, as the fossil record seems to show? What is the role of environmental changes such as habitat destruction and of cataclysmic

events like meteor impacts? Are most species inherently stable, changing only very little until they succumb to extinction? Or are species highly adaptable, changing all the time?

Eldredge sorts through the major findings and interpretations and presents a lively introduction to the leading edge of evolutionary theory today. Reinventing Darwin offers a rare insider's view of the sometimes contentious, but always stimulating work of scientific inquiry.

PRAISE FOR NILES ELDREDGE'S PREVIOUS BOOKS

The Miner's Canary: Unraveling the Mysteries of Extinction

"The Miner's Canary rings with integrity. The author takes care to present opposing views. Some readers, indeed, might view Mr. Eldredge as a little too self-effacing; he is, after all, one of the world's leading experts in his field."—The New York Times Book Review

Fossils: The Evolution and Extinction of Species

". . . an important and informative book. It is also delightfully idiosyncratic. This is no scholarly treatise defending academic argument. It is an essay for everyone interested in the story of earthly life."—The Christian Science Monitor

Life Pulse: Episodes from the Story of the Fossil Record

"This is Earth history on a grand scale; those who enjoy the works of Stephen Jay Gould will appreciate Life Pulse."—Publishers Weekly

ABOUT THE AUTHOR

NILES ELDREDGE is a curator in the Department of Invertebrates at the American Museum of Natural History. He is the coauthor with Stephen Jay Gould of the 1972 paper that proposed the theory of punctuated equilibria, and the author of numerous popular science books, including The Miner's Canary, a New York Times Book Review Notable Book of the Year for 1992.

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