

Topics in Geobiology 40

Series Editors: Neil H. Landman · Peter J. Harries

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The Trace-Fossil Record of Major Evolutionary Events

Volume 2: Mesozoic and Cenozoic

This volume addresses major evolutionary changes that took place during the Mesozoic and the Cenozoic. These include discussions on major evolutionary radiations and ecological innovations on land and at sea, such as the Mesozoic marine revolution, the Mesozoic radiation of vertebrates, the Cenozoic evolution of mammals, the evolution of paleosol biotas, and the evolution of hominids. The role of mass extinctions at the end of the Triassic and at the end of the Cretaceous is assessed.

This volume set provides innovative reviews of the major evolutionary events in the history of life from an ichnologic perspective. Because the long temporal range of trace fossils has been commonly emphasized, biogenic structures have been traditionally overlooked in macroevolution. However, comparisons of ichnofaunas through geologic time do reveal the changing ecology of organism-substrate interactions. The use of trace fossils in evolutionary paleoecology represents a new trend that is opening a window for our understanding of major evolutionary radiations and mass extinctions. Trace fossils provide crucial evidence for the recognition of spatial and temporal patterns and processes associated with paleoecologic breakthroughs.

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