

BOOKS: PALEONTOLOGY

A Fondness for "Beetles of the Paleozoic"

Allison R. Palmer

Fossils can be an unending source of personal pleasure and intellectual stimulation for those who have eyes to see. This allusion is evoked throughout Richard Fortey's latest book, an authoritative introduction to the world of trilobites and their aesthetic and scientific potential.

Trilobites are extinct marine arthropods second only to dinosaurs as fossils of public interest. Thou-

Trilobite! Eyewitness to Evolution by Richard Fortey

Harper Collins, London, 2000. 283 pp. £15.99. ISBN 0-00-257012-2. Knopf, New York, 2000. 288 pp. \$26. ISBN 0-375-40625-5 (available 31 October).

They dominate the fossil record of the Paleozoic's first 60 million years, and long afterwards they continued to be important components of marine communities. Even though only modestly diverse by the Permian, they were occasionally common until the major mass extinction that ended the Paleozoic. Fossil trilobites range in size from larvae less than a millimeter in diameter to giant adults several tens of centimeters long; most fall in the 2 to 10 centimeter range. When their often elaborate mineralized exoskeletons are preserved intact, trilobites are objects of natural art prized by collectors. Good photographs of examples of such spectacular specimens accompany Fortey's text.

Although their scientific importance is generally not appreciated, trilobites surpass the dinosaurs in their contribution to evolutionary theory. They were abundant, they were taxonomically and morphologically diverse, and their communities changed rapidly throughout their 300-million-year history. Their fossil record provides evidence of evolutionary continuity and of important global and near-global extinctions in the

sands of species are known, all of which are restricted to the Paleozoic Era (545 to 250 million years ago). Trilobites were among the first animals with mineralized shells to appear on the evolutionary scene.



Exuberance of spines. Devonian trilobites, such as this *Dicranurus* from Morocco, exhibit a remarkable variety of spinose forms.

marine environment. It also contributes substantially to debates about evolutionary patterns, such as gradual versus punctuated change. All arthropods molt during development. Series of trilobite growth stages are preserved often enough so that questions of evolution by arrested or accelerated development can be tested. The remarkable structure of the trilobite compound eye provides information about habitat preferences and visual capabilities early in the record of invertebrates.

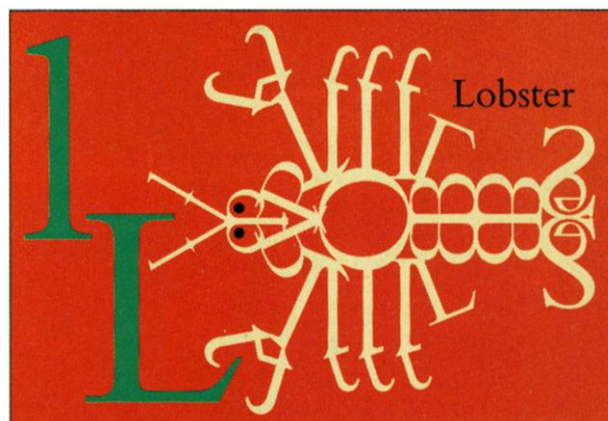
Because most of the present world's land areas were submerged during various parts of Paleozoic time, trilobites are found in marine sedimentary rocks on all continents. Trilobite faunas were geographically distinct almost from the time of the group's first occurrences, but the geography of the early Paleozoic was vastly different from that of today. Thus, trilobites provide key evidence to show the original continuity of now widely separated parts of that ancient world as well as the accreted nature of exotic terranes along present and past continental margins.

Fortey, a senior paleontologist at London's Natural History Museum, brings trilobites, their geological and evolutionary significance, and their practitioners past and present alive for readers of all ages and

levels of previous experience with these fossils. His semi-autobiographical account is written with style, humor, and a distinctly British accent that add to its charm. Technical vocabulary is minimal and comfortably defined within the narrative as needed. The personal joys and hazards of collecting around the world are evoked with elegant descriptions of collecting sites that

would be the envy of any travel writer. *Trilobite!* is a book to stimulate or enrich interest in trilobites rather than a scientific treatise. The many intriguing topics—including the search for information about rarely preserved anatomical features, interpretations of functional morphology, the beauty of the trilobite eye, and the challenges of studying an organism that not only molts but often disintegrates after death into many discrete parts—are presented without distracting citations. The few references listed at the end are enough to lead a reader more deeply into the technical literature. The book is a worthy addition to the shelves of anyone who has ever had any interest in or experience with these "beetles of the Paleozoic."

BROWSINGS



Bembo's Zoo. An Animal ABC Book. Roberto de Vicq de Cumpitch. Henry Holt, New York, 2000. Unpagged. \$17.95, C\$26.95. ISBN 0-8050-6382-X.

Graphic designer de Cumpitch has created an imaginative abecedary of animals from antelope to zebra. His pictures use only the shapes of the letters (in a Bembo font) in their subjects' names.

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