

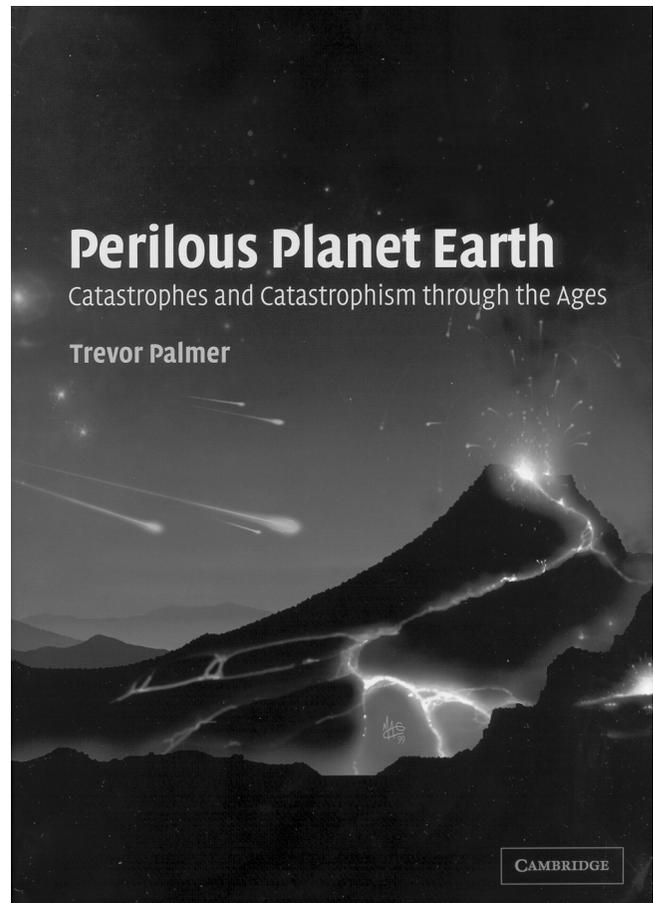


Book Review

Perilous planet Earth—Catastrophes and catastrophism through the ages, by Trevor Palmer. Cambridge University Press, 2003, 522 pp., \$75.00, hardcover, (ISBN 0–521–81928–8)

This certainly is a hefty volume—about 370 pages of text and almost 150 pages of notes and references. The author, a biologist by training, who has worked on inherited medical disorders, enzymology, and evolution, has tried to give a complete history of catastrophism in biology and geology. The book spans a wide range, from catastrophism in mythology, religion, philosophy, and science, from the ancient times to today. Topics from the Cretaceous-Tertiary (K-T) boundary to Noah's Flood to even Atlantis are mentioned and discussed. There are 30 chapters, divided into two (rather uneven) parts. The first part, entitled “Catastrophism: The story of its decline and fall . . . and resurrection,” is divided into 23 chapters, which make up the bulk of the volume. Without listing all the chapters, just to give an overview of the breath of topics covered, some chapter titles should be mentioned: “Natural theology and Noah's Flood: The high-water mark of catastrophism,” “Lyell triumphant: Gradualism dominates geology,” “Atlantis: Rational and irrational theories of a ‘lost’ civilization,” “Human evolution: Gradual or punctuational?,” “Chaos in the solar system,” “Mass extinctions and the course of evolution.” The second part (“Catastrophes and the history of life on Earth”) repeats and summarizes the modern point of view of catastrophism (well, the point of view of the author), again ranging from the role of catastrophes in evolution, extinctions, ice ages, Atlantis, and the rise and fall of civilizations.

The author certainly has to be congratulated for taking on this vast topic. The book is fairly well-written and covers its subject in a thorough way. It should not be confused with a textbook, and it is not well illustrated (there are only a few pictures, mainly small drawings—portraits of scientists); rather, it reads like an oversized essay (or maybe a series of essays). Trying to read the book in one sitting (well, you will need several days and evenings for this task) does not work as well as reading some chapters and then returning to the rest bit by bit, with 3 or 4 chapters at a time. This is because, in some cases, I felt that the topics jump around a bit between chapters. The author certainly is authoritative when covering the subject of evolution from a biological point of view and gives an excellent historical treatment—with a lot of space devoted to Darwin and his achievements and shortcomings. There is also a very detailed overview of catastrophes in the geological evolution of the Earth, especially the K-T



boundary. The historical development of the impact hypothesis for the K-T mass extinction is described in great detail, but not always precisely (in some cases, a rather selective citation of the players in the field is given). In particular, after reading the relevant chapters in the book, one gets the impression that almost all the work on impacts and extinctions was made by researchers from the United Kingdom and the USA (with maybe a couple of others thrown in), but there is no balanced review of the topic. Also—and maybe the author never intended to do this—there is no real critical assessment and “where do we stand today” review of the topic. The general reader will ask, “Okay, fine, this is what somebody found or thought in 1985, but how do we see this topic today? What was concluded after more studies?” Of course the field is still evolving, so maybe the author just wanted to let the reader decide what to think.

Reading the book is highly recommended to everybody who has a bit of an interest in history and is working in earth

and planetary sciences, especially those interested in impacts. The book may also be suitable for interested lay people, but everybody should be warned that it takes some effort to work through this hefty volume. On first glance, I thought that the 150 or so pages of references and notes would be an excellent tool; but after reading through the book, I was disappointed in this aspect. First, the references are not in alphabetical order, but are numbered and by chapter, I guess as is usual in the humanities (but is somewhat impractical in science). Then many numbers list more than one publication. Most irritating of all, though, is the fact that very often only secondary references are quotes. The same half dozen or so review books (most of them popular accounts by the major researchers in the field) are quoted over and over, instead of the original literature. One example (of hundreds): on p. 275,

the author notes, “A series of short papers on the subject appeared in *Nature* in April 1984.6.” However, looking at note 6 in the appendix lists some pages in four popular books on the topic, not the *Nature* papers themselves, as one would have expected. This limits the usefulness of the reference section severely. These gripes aside, I still think that it is worthwhile to read this book—to remind us how science develops (not in a straightforward fashion).

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