

The Dynamic Earth: An Introduction to Physical Geology, 2nd Edition

by **Brian J. Skinner and Stephen C. Porter**, ISBN 0-471-53131-6; John Wiley & Son, New York, 1992; 570 pgs.

Review by **Christopher G. Kendall**

This book is an introduction to physical geology. As with other introductory books aimed at the first year geological student or the nongeologist wanting to gain some background in geological information, this text is illustrated with abundant color photos, and numerous colored block diagrams and maps. The publishers and the authors have taken great pains about the look and feel of this book. It is the sort of text that you can have lying on your coffee table and can browse through and enjoy it's visual impact.

The book is divided into 3 parts: (1) Earth's Materials, (2) Processes that Shaped the Earth's Surfaces, (3) The Evolving Earth.

In the first part, there is a chapter on the Earth and its minerals followed by a chapter on volcanoes and magmatism. There are also subsequent chapters on sedimentary rocks, new rocks from old, metamorphism and metamorphic rock, and then a discussion of geological time.

The next section deals with weathering of soils, mass wasting of streams and drainage systems, ground water, glaciers and glaciation, wind action and deserts and the ocean margin.

The final section of the book, The Evolving Earth, deals with the deformation of rock, earthquakes in the Earth's interior, global tectonics, resources of minerals and energy, a chapter on the planets of the solar system and their moons and the similarities between the tectonics of the physical makeup of the Earth as compared to the other planets, a chapter on our changing planet, etc.

This book is a work of art, with a format that is typical to American texts aimed at educating the introductory student at high schools and the first year at universities. Each chapter commences with a preliminary statement and then important points are outlined with bold headings and bold words throughout the text. The chapters end with summary statements and questions, which will help review what you have read.

As a text for the geophysicist needing some background or general geology, this book may be of some use for understanding the generalities of basic geology.

A glaring omission to this book is a lack of discussion of worldwide sealevel or eustasy and it's relationship to stratigraphic sequences. I'm not surprised that there is no mention of this important phenomenon, since it seems that introductory texts in geology take at least 10 years to catch up with a current geological fad. It's strange to think that something like 70% of the papers presented at International geological meetings focus on the sedimentary response to eustatic sea level changes and the text never mentions this effect. I suppose we must wait for two generations of geologists to die before an introductory geology text will contain information on a subject that occupies the thoughts of most thinking sedimentary geologists today.

Nevertheless, the book is topical enough to have photographic references of Hurricane Hugo, and the recent earthquake in San Francisco. There is a good section on plate tectonics, so at

least that "fashion" has made it to the text.

The only other major omissions in the book are also sedimentological, particularly the carbonate section, which is rather weak. There is also an overemphasis on traditional geomorphological schemes for classifying coastlines and this text hasn't moved away from this Victorian preoccupation. However, this is a beautiful picture book.

Certainly, it is a good text to introduce the first year geology student to the field of geology. It has a fair amount of "meat" to it and if you want to browse and get a feel for the field of geology, this book is for you. If you're looking for an introductory text to teach geology, I would look at this book as a potential buy, though it's a shame that the recognition of sedimentary stratigraphy and eustasy is ignored. As nice as this book is, it is a clone of other introductory texts on geology and seems to be in lock step with the same organization and content, seldom departing from the traditional, prescribed formula.