(Perrier) and snow cover (Kotliakov/Krenke). The considerable Russian interest in the radiative properties of the surface is represented in an article by Kondratyev and others. Finally, there are concise reviews of the global water balance by Baumgartner and of future possibilities for remote sensing by Itten.

In a book of this size there will always be minor irritations. For example, there are variations in typeface and notation as a result of photographic copying of the manuscripts, in some of which the equations are hand-written. One might also add that the title is unnecessarily restrictive, as less than one-fifth of the pages are directly concerned with GCMs. The scope of the book is in fact much broader and there are many authoritative reviews which deserve a wide audience. This is an invaluable source of information and ideas and should be essential reading for anyone concerned with the study or numerical representation of land surface processes.

A. SLINGO

Seismic Wave Propagation in Stratified Media

B. L. N. Kennett, *Cambridge University Press, 1983*
x + 342 pp., £30.00

This excellent treatise presents the mathematics of wave propagation in layered elastic media in the framework of a unified notation. Kennett's approach is to work with reflection and transmission properties of portions of the stratification. The advantages of this formalism is that it is easily applied to numerical work and that it leads to stable algorithms, though the implied complex arithmetic makes these somewhat less efficient. Moreover, the fundamental structure of the wavefield in a layered system (rays and reverberations) remains visible in the mathematics. The author skilfully exploits this property to show how various approximations to the wavefield, such as generalized ray expansions, reflectivity and full-wave methods, are related to the full seismic response of the structure. This provides an illuminating insight into the various assumptions and approximations underlying these methods.

The book can be divided into two parts. The first seven chapters develop the basic theory of seismic waves and the mathematical representation of sources. The last three chapters deal with various approximations that are currently in use. Here the author's affinity with the Cambridge school of mathematical seismology is perceptible. I particularly enjoyed the very up-to-date chapter on modal summation to synthesize the wavefield. The two parts are connected by one chapter that gives a more phenomenological account of seismic observations, from exploration seismics to global seismology.

What sets this book apart from recently published books on seismology is that it is limited to a more theoretical account of wave propagation, an account which goes deeper than most books. Yet the mathematics is never really difficult, and the book could easily serve as a text for a more specialized course on seismic waves. My only points of criticism are that the sphericity of the Earth gets a rather stepmotherly treatment and that the price is quite high. Nevertheless, it definitely succeeds as a lucid account of the various methods for the calculation of synthetic seismograms.

G. NOLET