jor occurrences of komatiites, plus some specialized papers discussing many of the intriguing aspects of this type of magmatism. The 29 papers have been grouped into seven sections, two of which (those on regional surveys and on the geochemistry and composition of the mantle in the Archaean) constitute more than half of the book. The other five sections, more or less equal in length, cover history and definitions, textures, alteration, economic geology, and petrogenesis.

The editors state that the volume has two principal objectives, to summarize present knowledge of komatiites and to present new information and emphasize areas of study in which problems still exist. They succeed quite well in the former but fail in the latter. Most of the work in the volume has been published elsewhere, with new data appearing only in a few papers on trace elements and isotopes. However, the book succeeds quite well as a review and is an excellent source of references, especially for the world's komatiite occurrences, many of which are given almost overly succinct treatment, though key references are cited.

The regional survey section is the longest in the book, comprising 12 contributions. Classic geological cross sections are given in only two of the 12. This reflects either the vast amount of work required before our understanding of the regional settings of these enigmatic rocks is satisfactory or the vast amount of work it is going to take to get today's crop of field geologists back to basics.

The contributions are generally well organized and the diagrams usually clear. Large print and an acceptable frequency of misprints make the book visually pleasing and easy to read. However, the photomicrographs are not of particularly high quality and have commonly been reproduced at a much larger size than is warranted by the information they carry. Whether the papers have abstracts seems to be based on whether their authors felt like providing them. Like most books of its type, *Komatiites* suffers from unbalanced coverage of the data and a lack of continuity between sections. Arndt and Nisbet have attempted to overcome these difficulties by including an introductory preamble to each section.

On the whole the book is a worthwhile acquisition for anyone interested in petrology, the mantle, igneous geochemistry, Archean geology, or simply teaching senior undergraduate geology. Certainly it provides a polite and informative reply to the student question, "Where should I go to read up on komatiites?" The specialized researcher will not find too much to excite him or her, however. *Komatiites* could be considered as a suitable companion volume to *Basalts*, edited by H. H. Hess and Arie Poldervaart, or *Andesites*, edited by R. S. Thorpe.

CHRISTOPHER BROOKS
Department of Geology,
University of Montreal,
Montreal, Quebec H3C 3J7, Canada

Planetology

Formation of Planetary Systems. Formation des Systèmes Planétaires. Papers from a school, Grasse, France, Aug. 1980. A. BRAHIC, Ed. Cepadues, Toulouse, France, 1982. 894 pp., illus. 295 F.

Speculations about the origin of the solar system are undoubtedly as old as intelligent life on Earth. This volume is a snapshot of the speculations as of 1980. In a foreword, Curien attributes the passion of planetologists to rapid growth of their field in the era of space exploration. True, there are many new facts that were not at hand for Lucretius, Descartes, Buffon, Kant, or Laplace. But the facts at hand are sufficient only to color a very small part of a very large canvas that is still mostly blank. Thus, today's natural philosophers are still free to spin their creative hypotheses in the spirit of their illustrious predecessors. And spin they do. The book begins with Brahic's recounting of the history of speculation about the origin of the solar system. The tone is set by a lovely quote from Poincaré in which he concludes that despite a paucity of facts the human mind is irresistibly drawn to this topic. "It is for this reason that cosmogonic hypotheses are so numerous and varied; it is for this reason that every day new ones spring up, equally as uncertain but nevertheless as plausible as the more ancient theories."

Following the historical introduction the book is divided into four parts: Astrophysics and Cosmochemistry, Dynamical Evolution, The Solar System Today, and Other Planetary Systems and Life. Multipart lectures are interspersed with short contributed papers. Most of the lectures are thorough and useful. Part of their utility comes from their being introductory in nature, with the goal of teaching scientists in other fields. For example, two series of lectures, one by Burns and one by Greenberg, make a nice introduction (totaling almost 150 pages) to dynamical processes in the solar system. There is a wealth of information in lectures by Elmegreen, Lattimer, and Allegre in the part of the book on astrophysics and cosmochemistry. However, overall the book retains a free-wheeling spirit. Even the part The Solar System Today, which one would suppose to be factual, contains a potpourri of papers on some of the more speculative topics, such as planetary rings, the origin of the moon, the geological evolution of Mars, and the origin of the satellites of Mars. The introductory lecture series in this section is a highly readable and entertaining overview of the solar system by Owen. The section on other planetary systems and life consists of two very short contributions.

The major failings of the book have to do with details, but distracting details. I assume the book was produced from camera-ready typescript prepared in English by a mostly French-speaking staff, for typographical errors appear at the rate of about one per page. Higher-order errors such as scrambling of superscripted mass numbers or breaks in the text that were clearly meant to be filled in by an author I can only attribute to some breakdown in the editorial process. Hyphenation at the ends of lines is totally unrelated to syllables. There is no indication in the table of contents whether a paper is a short contribution or a lecture series; there are no running author or title headings at the tops of pages; and there is no index.

Nevertheless, the vigor and enthusiasm of the European planetary sciences community and the drive and sense of humor of the editor are strongly reflected in this very lively book.

LAUREL L. WILKENING
Department of Planetary Sciences,
Lunar and Planetary Laboratory,
University of Arizona, Tucson, 85721

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Applied Therapeutic Drug Monitoring. Vol. 1, Fundamentals. Thomas P. Moyer and Roger L. Boeckx, Eds. American Association for Clinical Chemistry, Washington, D.C., 1982. 242 pp., illus. Paper, $15.

Applying Mathematics. A Course in Mathematical Modelling. David Burghes, Ian Huntley, and John McDonald. Horwood, Chichester, England, and Halsted (Wiley), New York, 1982. 194 pp., illus. $44.95. Ellis Horwood Series in Mathematics and Its Applications.

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