distracts the reader from the main lines of development. But that is in the nature of the subject, and this book provides a source to which the student may confidently be referred by a lecturer who, owing to the apparently inevitable lack of time, has to omit detail, or even sections of the development. H. G. ANDERSON

RIBENBOIM, PAULO, *Functions, Limits, and Continuity* (John Wiley and Sons, Inc., 1964), vii+140 pp., 45s.

The author has set out to develop analysis from a common sense beginning in a text which demands no specific previous knowledge of mathematics. He has written for students who feel the need of understanding rather than calculating, and he has taken care to motivate and explain all new ideas, and to relate them to everyday intuition. He has restricted himself to a small domain, excluding most of the applications usually taught in a calculus course, to make the book less formidable and also to focus attention on essential principles.

For the most part the author has succeeded admirably in accomplishing his aims. The material is classical, but it comprises just those parts of elementary classical analysis which have motivated modern developments. The outlook and terminology are always modern, and the presentation is generally simple and clear. I would mention particularly the leisurely treatment of the Heine-Borel theorem and its applications at a stage by which many authors have unashamedly stepped up the pace.

The book is literally on functions, limits and continuity; infinite series, for example, are not treated. After a two-page chapter on sets, there are chapters on integers and rationals, construction of reals, points of accumulation, sequences, functions, limits of functions, continuous functions, and uniform continuity. In the first main chapter I felt that the student might be confused by one or two points. The definition of the natural numbers, including the induction principle, is taken for granted in the text, but it should have been pointed out that this was to be discussed in the exercises at the end of the chapter. The real numbers are introduced by Cantor's method, but Dedekind's construction and the axiomatic method are treated in an appendix. A second appendix deals with cardinal numbers.

The layout is excellent, and the print is clear though small. I found singularly few misprints. P. HEYWOOD

BUDAK, B. M., SAMARSKII, A. A. AND TIKHONOV, A. N., *A Collection of Problems on Mathematical Physics*. Translated by A. R. M. Robson. Translation edited by D. M. Brink (Pergamon Press, Oxford, 1964), ix+770 pp., 80s.

This is a translation of a Russian work of the same title, originally designed for use in the Physics Faculty and the external section of Moscow State University. The modest title scarcely gives an idea of the range of the problems selected for discussion. The authors disclaim any attempt to illustrate all the methods used in Mathematical Physics. They omit, for instance, operational and variational methods and generally those depending on integral equations, confining themselves to exemplifying various techniques—separation of variables, integral transforms, source function, etc. for the solution of hyperbolic, parabolic and elliptic differential equations, as used in various branches of mathematical physics. The enunciations of the problems—over 800 in all—occupy the first 158 pages. Solutions, often in summary form, take up 566 pages. This is followed by a " supplement " which includes notes on coordinate systems and some special functions. The list of references at the end consists largely of works in Russian, not all of which are available in English translation; perhaps in a subsequent edition some references to more readily accessible sources could be given.