A bibliography of 319 entries lists the sources of the sequences in the main table. This is followed by a convenient index, which gives the listed numbers of sequences relating to a specific topic, the principal sequence of its type being identified therein by an asterisk.

This unusual book may be considered as a companion to the report of Robinson and Potter [1], which deals with the identification of noninteger numbers having a prescribed decimal expansion. Because of its wealth of material and extensive bibliography, the book should be of considerable educational value to many readers.

J. W. W.

1. H. P. ROBINSON & ELINOR POTTER, *Mathematical Constants,* Report UCRL-20418, Lawrence Radiation Laboratory, University of California, Berkeley, California, March 1971. (See *Math. Comp.*, v. 26, 1972, pp. 300-301, RMT 12.)

39 [7, 13.15].—PETER BECKMANN, *Orthogonal Polynomials for Engineers and Physicists,* The Golem Press, Boulder, Colorado, 1973, viii + 280 pp., 24 cm. Price $15.—.

The preface gives several reasons for writing the book and states that, as the title implies, it is for the "application minded reader, and I have tried to be convincing without splitting hairs. The reader looking for local limit lemmas and epsilonics has the wrong book." There is little I find to recommend in this volume. The author's style and apparent sense of humor seem out of place to the reviewer. One of the reasons given for writing the book is that, though orthogonal polynomials were once a "bewildering and confusing collection of many systems...", they "can now be derived from a general weighting function...." The author's statement is not clear. Further, he means the classical orthogonal polynomials, but he does not say so. On this point, one of the appendices is a collection of integrals and other relations involving the classical orthogonal polynomials lifted from [1]. The economy noted by the author does not seem to apply here for he is apparently unaware of the fact that many properties for the Laguerre and Hermite polynomials (the latter is a special case of the former) follow from those of Jacobi by invoking a certain confluent limit process; see [2, Vol. 1., Chapter 8].

Epsilons and deltas aside, to be convincing one should expect complete and correct statements. The author states in the preface, "I have endeavored to give applications to some of the problems where today's action is—numerical analysis, random processes, wave scattering and the like. I did include a brief chapter on partial differential equations, but I suspect that today's engineers will be more appreciative of things like the telescoping trick for orthogonal expansions, which is given here in somewhat more general form than..." in a recent book which shall pass unnamed. The author is referring to the scheme for evaluating a sum involving orthogonal polynomials by use of the recursion formula for such polynomials employed in the backward direction. On p. 120, he says that the scheme is "unbeknownst to many wizards of numerical analysis." The author seems unaware that the principle is far more general than the one he gives. He presents no references to original papers, and the round-off error problem of computing with recursion formulas is not even mentioned.

The volume is divided into two parts. Part I—Theory, is composed of three chapters—introduction, orthogonal functions and orthogonal polynomials. Part II—Applications—is also composed of three chapters—numerical analysis, partial differential equations, and probability theory and random processes.

If some one must seek information on the topics covered in this book, I believe he has the wrong book.

Y. L. L.

1. I. S. Gradshteyn & I. M. Ryzhik, *Tables of Integrals, Sums, Series and Products* (in Russian), 4th ed., Moscow, 1963. (See *Math. Comp.*, v. 20, 1966, pp. 616-617 and references given there.)

2. Y. L. Luke, *The Special Functions and Their Approximations*, Vols. 1 and 2, Academic Press, 1969. (See *Math. Comp.*, v. 26, 1972, pp. 297-299.)

40[7].—Harry E. Rauch & Aaron Lebowitz, *Elliptic Functions, Theta Functions, and Riemann Surfaces*, The Williams and Wilkins Co., Baltimore, Maryland, 1973, xii + 292 pp., 24 cm. Price $20.—.

According to the preface, this volume is designed as a text for advanced undergraduate students and graduate students who have had an introductory course in complex variable theory. The authors also have in mind readers interested in self-study, applied workers and researchers in pure mathematics.

The subject matter of the text is aptly described by its title. The material is quite classical and is divided into four chapters—I. Riemann Surfaces and Elliptic Functions, II. Theta Functions and Elliptic Functions, III. Elliptic Integrals of Second and Third Kinds and the Representation of Elliptic Functions, IV. Transformation Theory. There are also seven appendices spread throughout the text.

There is no dearth of material from which mathematical courses can be developed. Fundamental courses aside, it is subject matter of current research interest which for the most part dictates the contents of a course. The topics covered by the volume at hand are classical and have been thoroughly worked over. As far as I know, except for numerous mathematical tables of functions, there is little research done on the subjects. The authors claim in the preface that there is a revival of interest in theta functions of several variables, and as a consequence believe treatment of the single variable case useful. However, there are no references to back this statement. Indeed, except for a few references to books (and these are mostly classical and not easily inaccessible to most readers), there are but two references to original papers