generating systems with the property that each subsystem with the same cardinality is also a generating system, universal homomorphic images, and universal subgroups.

Among many notable features of this book which should be mentioned are the excellent bibliography, the exercises with a wide range of difficulty which cover virtually every topic presented, and the statement of eighty-six unsolved problems which already have led to new contributions to the theory of abelian groups. The book is printed in the same large clear type and format as the Hungarian mathematical journals and is remarkably free of misprints.

This book is an important addition to mathematical literature and is highly recommended to anyone whose interests touch the theory of abelian groups.

R. A. BEAUMONT

Special functions. By Earl D. Rainville. New York, Macmillan, 1960. 12+365 pp. $11.75.

This work of 365 pages and 21 chapters introduces the reader to a large number of "special" functions and their properties, and with this purpose (the author informs us) the material of the book has been the basis of a course given by him since 1946. Most of these functions are classical: the Gamma function, Hypergeometric function, Bessel functions, Elliptic functions (including the Jacobi elliptics), and the important orthogonal polynomials.

With regard to these long-known and deeply studied functions one merit of the book lies in bringing under one cover, at less than encyclopedic length, this large variety of important tools of classical analysis. There also are results on generating functions that are perhaps not well known, so that one comes upon relatively new material; and in addition the book discusses, in some detail, Generalized hypergeometric functions, with special reference to polynomials defined in terms of these. Much of this information is not easily accessible elsewhere, and represents a valuable part, and in a certain sense the most interesting part, of the volume.

Chapters 1 and 3 are short introductions to infinite products and asymptotic series; and Chapter 2 discusses the Gamma and Beta functions. Chapters 4 and 5 take up the hypergeometric function and its generalizations. Here one finds the author's own results on contiguous function relations. Chapter 6 treats Bessel functions briefly (there are so many available sources of information for these); and briefly again, 7 touches on the confluent hypergeometric function.

With Chapter 8, on Generating Functions, we enter the region of the author's special interest. If $\{f_n(x)\}$ is an infinite sequence of func-