SHORTER NOTICES

La Réduction des Séries Alternées Divergentes et ses Applications. By J. Ser. Paris, Gauthier-Villars, 1935. 6+43 pp.

Séries Lacunaires. By S. Mandelbrojt. (Actualités Scientifiques et Industrielles, No, 305; exposés sur la théorie des fonctions publiés sous la direction de P. Montel. II.) Paris, Hermann, 1936. 40 pp.

The first pamphlet is a sequel to a previous work by the same author, entitled *Calculs Formels des Séries de Factorielles.* The discussion throughout is almost entirely of a formal nature. The first part of the book is concerned with formal transformations of series obtained by use of the notion of a reciprocal sequence. If a sequence is regarded as the set of values taken on by a function $f(x)$ for positive integral values of the variable, the reciprocal sequence will consist of the coefficients obtained when the function is developed formally in a Newton interpolation series. The second part of the work is concerned with the numerical calculation of the coefficients of a factorial series corresponding to a function whose values are known for positive integral values of the variable.

The second monograph contains a succinct account of various important results connected with Hadamard's fundamental work on the relationship between the coefficients of a power series and the singularities of the corresponding function, and Julia's important extensions of the notions inherent in Picard's theorem on the behavior of a function having an essential singularity. The author considers both power series and the more general Dirichlet series, but devotes himself primarily to the discussion of series of lacunary type. A considerable number of the theorems developed in the book are due to Professor Mandelbrojt himself.

Proofs of theorems are given only in broad outline, and are omitted entirely where the method used is not of general interest. The author stresses the close relationship between the notion of a Julia line for an integral transcendental function and a singular point for a non-integral function. In this connection he introduces a method of demonstration which may be used to obtain results concerning singular points or results concerning Julia lines.

C. N. MOORE

Theorie der Gruppen von Endlicher Ordnung. By Andreas Speiser. 3d edition. Berlin, Springer, 1937. 10+262 pp.

Although the third edition of this standard text contains only eleven pages more than the second edition, there are more than eleven pages of new material, compensation having been made by setting the type more compactly. The first edition of this book was reviewed by G. A. Miller in this Bulletin, vol. 29 (1923), p. 372; the second also by G. A. Miller, vol. 34 (1928), p. 526. Mention will be made here only of the changes and additions in the third edition.

The second chapter (Normalteiler und Faktorgruppen) has been entirely rewritten and Speiser now uses the generally accepted term "Homomorph" for a many-to-one mapping of one group on another. In recognition of the recent development of structure (lattice) theory he has introduced diagrams and a theorem (theorem 25) typical of this theory.