SHORTER NOTICES

Einführung in die Analytische Geometrie und Algebra. Volume I. By O. Schreier and E. Sperner. Leipzig, B. G. Teubner, 1931. 238 pp.

This book represents the course of lectures given for several years by the talented young mathematician, O. Schreier, whose premature death was an irreparable loss to mathematics. As is seen from the title and from the brief list of contents given below, the main feature of the book is a complete fusion of the foundations of analytic geometry and algebra. This basic point of view enables the author to go more deeply into the fundamentals of analytic geometry, and to present essential material of algebra more clearly and elegantly than is usually done. Chapter I (Affine space. Linear equations) contains an exposition of general properties of vector spaces (of finite number of dimensions), the fundamentals of the theory of linear equations, and their geometric applications. Chapter II (Euclidean space. Theory of determinants) contains an exposition of most important properties of determinants and applications to the theory of transformations in geometry (rigid body motions, affine transformations, orthogonalization of systems of vectors, etc.). The last chapter (Theory of fields. Fundamental theorem of algebra) introduces the general notion of a field, and that of polynomials in a field, and gives a proof of the fundamental theorem of algebra. Since the book is supplied with numerous exercises, and the exposition is clear and elegant, it might be successfully used as a text book in this country. We await with interest the appearance of the second volume, promised within one year, which will contain the theory of matrices and linear transformations (elementary divisors), elements of the theory of groups, and projective geometry.

J. D. TAMARKIN

Leçons sur les Fonctions Entières ou Méromorphes. By Paul Montel. Paris, Gauthier-Villars, 1932. xiv+116 pp.

This book reproduces a course of lectures delivered by the author at the University of Cluj in May, 1929. The first chapter is devoted to the formula of Nevanlinna-Ostrowsky and to its applications. Nevanlinna's characteristic function is introduced and the "First fundamental theorem of Nevanlinna" is proved. In Chapter II meromorphic functions are classified according to the growth of the characteristic function. An application of the theory of the characteristic function to the canonical representation of meromorphic and entire functions is given in Chapter III. Chapter IV contains a derivation of the "Second fundamental theorem of Nevanlinna" and its applications to theorems of Picard and Borel. A rapid exposition of properties of normal families is given in Chapter V; their applications to theorems of Picard, Landau, Schottky, Julia are found in Chapter VI. The exposition follows closely the classical monograph of Nevanlinna on meromorphic functions. The reader may feel a little disappointed to find that several more recent results of great importance, announced in the Introduction, are stated without proof.

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