The parallaxes which are derived in Chapter VI by a statistical discussion of the proper motions are of especial interest, for it was by applying this method to the Cepheids that Shapley and others determined the distances of the globular clusters.

The mathematical theory of a single star drift and its conflict with observations led Eddington to the division of the stars into two drifts. Both the single and double drift theories are discussed, the former leading up to the determination of the solar motion and the latter connecting with Kapteyn's two stream theory. A later chapter develops Schwarzschild's ellipsoidal hypothesis, and the results obtained by the use of different theories are frequently compared.

Much of the work on stellar statistics, particularly that of a theoretical nature, has been available for twenty-five years, but the practical applications have been few due to the lack of sufficient observed data. The author supplies this want in Chapter VIII.

The last few chapters are largely concerned with the work of Jeans and Eddington on stellar dynamics, and some very recent results have been incorporated. One of the most interesting chapters, at least to the reviewer, is concerned with galactic rotation.

The entire book bristles with probability integrals and complicated mathematical formulas. One wishes that it might be possible to read such a book without encountering the probability integral so often. It is not clear, always, just what the author is trying to show nor what has been proved after a page of formulas. Perhaps this is unavoidable; at least the author warns us in the preface that he is aiming at a mathematical treatment. One wonders occasionally if his equations are not "yes men" who give a mathematical character and amplification to the ideas entrusted to them by their master.

The book is well worth the effort required to read it and is the best available account of the subject. Dr. Smart is to be congratulated on the successful completion of such a comprehensive and scholarly book.

H. E. BUCHANAN

Vectoranalysis. By Siegfried Valentiner. (Sammlung Göschen, no. 354.) Berlin and Leipzig, de Gruyter, 1938. 136 pp.

The first sixty pages are devoted to the definition, algebra, differentiation, and integration of vectors. To motivate the development the author draws freely upon mechanics. In the second part of the book vectors are applied to potential theory, hydrodynamics, and the theory of electricity. Part three deals with linear vector functions, dyads, and tensors with applications to the theory of elasticity. The book contains thirteen carefully chosen figures and closes with a table of the more important formulas used. The notation is conventional.

The task of including so much material in such a few small pages required skillful planning. Although the explanations are in general not detailed, the beginner will find the account readable. For the person already acquainted with the elements of vector analysis the book will be a useful handbook.

V. V. LATSHAW

Grundbegriffe und Hauptsätze der höheren Mathematik, insbesondere für Ingenieure und Naturforscher. By Gerhard Kowalewski. Berlin, de Gruyter, 1938. 156 pp.

Dr. Gerhard Kowalewski, finding that mathematics is taking a less and less prominent place in the German educational system, has felt obliged to do his part in presenting the fundamentals of higher mathematics "without which a profitable study of engineering and the natural sciences is inconceivable."