astronomical information for the current year and a briefer summary for the succeeding year. There are usually one or more appendices containing articles on various topics. This year M. Bigourdan writes on proper motions and radial velocities of stars—a summary which, starting at the beginning, takes the reader to the work which is now in progress at many observatories. A valuable feature is the full index of all matters contained in the current issue with references, where necessary, to the previous four volumes.

ERNEST W. BROWN.

Die Grundlagen der Geometrie als Unterbau für die Analytische Geometrie. By Lothar Heffter. Leipzig and Berlin, B. G. Teubner, 1921. ii + 27 + viii pp.

The author's purpose is to provide a foundation for the study of analytic geometry and this he proposes to do by stating a set of projective postulates sufficient for the introduction of the double ratio, the fundamental concept of the projective scale. He explicitly states his intention to ignore the question of the independence of his postulates—and would have us regard them as "one possible way of idealizing the results of observation" rather than as a purely abstract gift from heaven. His undefined elements are point, line, plane and incidence. He lists twenty "axioms of alignment" (Verknüpfung), arranged in ten pairs of dual propositions, three "axioms of order" (separation), and one of continuity. To secure the restriction to the affine and then to the euclidean metric geometries, he introduces one axiom of parallelism and one axiom of orthogonality. To those interested in a brief formulation of the postulational foundation, from a projective point of view, for the study of analytic geometry the little pamphlet will be of value.

J. W. YOUNG.

Les Théories d'Einstein. By Lucien Fabre. Paris, Payot et Cie., 1921. 225 pp.

This book will be found of interest because of its valuable survey of the historical background of Einstein's theories. The author sometimes fails to define the symbols used. (For example, on pages 161, 179, and 243, and on page 196 there are incorrect definitions.) In spite of these defects, however, the book is one of the best elementary expositions of Einstein's work that has been published.

C. N. REYNOLDS.