analysis from the standpoint of the applications to geometry, mechanics, and physics. In the early revisions of the text Appell made notable changes with a view to strengthening the preparation for the study of mechanics and physics. The fourth edition appeared in 1921 and, in addition to representing the course given at l'École Central, it included certain material which figured in the program of admission; the reader, however, was assumed to have a knowledge of the exponential and logarithmic functions, elementary differential calculus, complex numbers, and the elements of analytic geometry.

In presenting the first volume of the new edition, Georges Valiron has made numerous changes not only in the choice and order of the subject matter but also in the method of treatment. He reminds us that the book is not intended to be a mathematical encyclopedia, but rather a course of instruction which is progressively more difficult and introduces new notions only as they are needed. For example, complex numbers are not presented until very late in the course when the advantage of their use in certain problems is readily appreciated.

The first three chapters, which have been added by Valiron, serve as a geometric introduction and are based on lectures commonly given at the beginning of the course in mechanics at the Sorbonne. In these eighty pages the author introduces the vector notation and then develops the elements of plane and solid analytic geometry. Although Valiron's treatment is more extensive, it reminds one somewhat of Appell's *Éléments de la Théorie des Vecteurs et de la Géométrie Analytique.*

Beginning with the fourth chapter the new edition develops the present program of analysis and geometry for the certificate in general mathematics of the Faculty of Sciences of Paris. This program has been in use since 1931 and it preserves the spirit of Appell's work even though the general plan has been somewhat altered. The scope of this portion of the book is indicated by the chapter headings: 4. Fonctions d'une variable. Limites. Continuité. 5. Fonctions dérivables. 6. Fonctions primitives. Intégrales. Différentielles. 7. Fonctions exponentielle et logarithmique. 8. Méthodes d'intégration. 9. Intégrales définies dont une limite est infinie où portant sur une fonction non bornée. 10. Fonctions de plusieurs variables. 11. Courbes planes ou gauches. Courbure. Enveloppes. 12. Étude des courbes en coordonnées polaires. 13. Intégrales curvilignes. Calcul des aires et des volumes.

A comparison with the fourth edition shows that Valiron has rearranged the subject matter considerably. There are frequent additions; in particular, the chapter on exponential and logarithmic functions is new. Vector methods have simplified many of the discussions; this is especially noticeable in the study of plane and space curves. In this first volume very little use is made of infinite series. Numerous well-chosen examples from the fields of geometry and physics are solved in the text and much emphasis is placed on graphic representation and methods of approximation. The figures are numerous and very well drawn. The text is attractively printed and the number of typographical errors noted was small.

C. H. YEATON

The Theory of Linear Operators from the Standpoint of Differential Equations of Infinite Order. By H. T. Davis. Bloomington, Indiana, Principia 1936. 14+628 pp.

List of contents: 1. Linear operators. 2. Particular operators. 3. The theory of linear systems of equations. 4. Operational multiplication and inversion. 5. Grades defined by special operators. 6. Differential equations of infinite order with constant coefficients. 7. Linear systems of differential equations of infinite order with constant