

*Vorlesungen über Zahlen- und Funktionenlehre.* Erster Band, erste Abteilung. By ALFRED PRINGSHEIM. Leipzig, B. G. Teubner, 1916.

THIS is the first part of the first volume of an introductory treatise on the theory of functions of real and complex variables. The author proposes to include in the first volume, in addition to a detailed logical treatment of the rational numbers, a complete exposition of the material treated by him in his two articles in the *Encyklopädie*: "Irrationalzahlen und Konvergenz unendlicher Prozesse" and "Unendliche Prozesse mit komplexen Termen," the only part omitted being the theory of infinite determinants. The part of the first volume under review concerns itself with the following principal topics: the system of real numbers, convergent sequences of such numbers, limits, orders of infinity and of infinitesimals, and double sequences of real numbers.

The book is intended primarily for students who are beginning the study of higher mathematics, and the theory is built up throughout from first principles. In fact the author declares in his preface that no previous mathematical knowledge is in general necessary for the comprehension of the first volume. In spite of the elementary character of the exposition, rigor of proof is nowhere sacrificed and the reader is made acquainted with the modern viewpoints in the domain of analysis that is treated.

CHARLES N. MOORE.

*I Numeri reali e l'Equazione esponenziale  $a^x = b$  per le Scuole Medie Superiori.* By Dr. GAETANO FAZZARI. Palermo, Libreria Scientifica D. Capozzi, 1918. 75 pp. Lire 1.80.

THIS little book, as its title indicates, is devoted mainly to the theory of real numbers. It has no scientific pretense, as the author states in the short preface, but contains an exposé of the theory as Dr. Fazzari has presented it for several years to his students at the R. Liceo Umberto I in Palermo.

The book is divided into two parts. In part I is found the theory of real numbers, the development being essentially that of Dedekind. It commences with the definition of a class of rational numbers; i. e., a series of rational numbers satisfying a given condition. Of two classes  $A$  and  $A'$ ,  $A$  is said to be inferior to  $A'$ , and  $A'$  superior to  $A$ , if each element of  $A$  is less than every element of  $A'$ .