"It may be too bold an attempt to include in the brief space of a small manual the principles of two vast and important theories. Nevertheless it seemed useful, in spite of the greater conciseness required, to unite both theories in order to avoid the repetition necessary in treating them separately, and also to show that the icosahedron theory, which is capable of appearing in the field of analysis as an elegant and independent creation of a special type, is only the first of a series of related constructions very closely bound together. From this point of view it would have been better still to take another step and include also the theory of the automorphic functions; but this would clearly be impossible.

"To save space, and for greater symmetry of treatment, I have assumed that the reader, besides having a certain familiarity with the more elementary parts of mathematics, has also some notions of several more advanced theories: analysis situs, functions of a complex variable and Riemann surfaces, elliptic functions, abelian integrals, linear differential equations, theory of numbers."

The program which the author thus places before himself has been carried out, we think, with much care and good judgment. He has treated his subject with admirable simplicity, directness, and unity. Not only will this work greatly facilitate the efforts of the reader to master these comprehensive theories, but it will be of particular service to those whose main interests lie outside this special field, by enabling them to become familiar with its general topography without an undue expenditure of time.

The book is printed in large, well leaded type. By using a paper as thin as is consistent with opaqueness and by cutting down to a narrow margin, the publisher has produced a small and handy volume without any sacrifice of legibility.

J. I. HUTCHINSON.

Vorlesungen über Zahlentheorie. Einführung in die Theorie der algebraischen Zahlkörper. By J. SOMMER. Leipzig, B. G. Teubner, 1907. iv + 361 pp.

THE generalizations of the ordinary theory of numbers which, following Gauss's introduction of complex integers, have been made by Kummer, Dirichlet, Dedekind, and Kronecker constitute an extensive and exceedingly interesting part of mathe-