matical studies of the college student, or to mark the completion of formal mathematics for the prospective engineer, or be but the stepping stone to further advanced study for the mathematical student, the arrangement and the presentation in this volume will materially aid the teacher and student. There is sufficient of the spirit of research and rigorous analysis to meet the demands of the last class, while the necessities of the others have not been neglected. The lists of problems are of sufficient variety and extent to meet all ordinary requirements. It will be quite clear to the careful reader that both in illustrations and in exercises, the author has avoided those examples which, however interesting in themselves, present their greatest difficulty or interest because of the dynamics, physics, or other science involved, and beyond that shed little or no new light on the methods of the calculus. In fact the field of dynamics is entirely avoided. On the other hand the author does not attempt to conceal or minimize the real difficulties of calculus by employing trivial examples. The answers to all exercises are conveniently assembled at the end of the text. The index is exceptionally complete. There is no doubt but that this text will be a valued addition to the teacher's library and will find a deserved admission into many class rooms.

D. D. LEIB.

Theorie der Zahlenreihen und der Reihengleichungen. By ANDREAS VOIGT. Leipzig, Göschen, 1911. viii + 133 pp.

THE two fundamental ideas which underlie this work are the following:

1. Instead of considering a number as isolated, one may think of it as belonging to a sequence. Thus the question as to whether b is divisible by a is the question as to whether b belongs to the sequence $\cdots, -2a, -a, 0, a, 2a, \cdots$.

2. Instead of expressing an integer N as a polynomial in x of the form

$$N = a_0x^n + a_1x^{n-1} + \cdots + a_{n-1}x + a_n,$$

one may write it in either of the forms

$$N = b_0x(x-1)\cdots(x-n+1) + b_1x(x-1)\cdots(x-n+2) + \cdots + b_{n-1}x + b_n,$$

$$N = c_0x(x+1)\cdots(x+n-1) + c_1x(x+1)\cdots(x+n-2) + \cdots + c_{n-1}x + c_n.$$