

ON A NEW EDITION OF STOLZ'S ALLGEMEINE
ARITHMETIK, WITH AN ACCOUNT OF
PEANO'S DEFINITION
OF NUMBER.

Theoretische Arithmetik. Von O. STOLZ (Innsbruck) und J. A. GMEINER (Wien). I. Abtheilung: *Allgemeines. Die Lehre von den rationalen Zahlen.* Leipzig, B. G. Teubner, 1901. iv + 98 pp.

THIS publication of about 100 pages is the first instalment of a new and revised edition of Stolz's *Allgemeine Arithmetik* (1885-86),—a work which has long since proved indispensable to all who desire a systematic and rigorous development of the fundamental elements of modern arithmetic.

The revision thus far completed (probably about one seventh of the entire work) covers the first four chapters:

I. On quantities (Größen) and operations (Verknüpfungen) in general.

II. On the natural numbers and the four fundamental operations.

III. On the general properties of any direct operation (Thesis, $a \circ b$) and its inverse (Lysis, $a \sim b$), as deduced from certain fundamental formal laws; in particular, the analytic theory of (absolute) rational numbers.

IV. On the synthetic theory of (absolute) rational numbers, with a treatment of systematic fractions.

The remaining chapters in the first part will contain (if the order in the old book is preserved) the theory of negative and irrational numbers, with an account of euclidean "ratios," followed by an elaborate treatment of the theory of limits as applied to functions of a real variable and to infinite series of real terms. The second part will then contain the theory of operations on complex numbers, including chapters on infinite series, infinite products and continued fractions. The complete work will belong to the Teubner series of mathematical textbooks.

As one turns the pages of the new edition one is struck first of all by the great improvement in the general appearance of the book. The title itself, "theoretical arithmetic," is much