In the appendix one finds supplementary and critical remarks on the several chapters of the text. In place of a bibliography there is a reference to the article on the same subject in the German encyclopedia by E. Steinitz. There is a four page index.

This volume will doubtless be of considerable value as a source of extra material in a course on projective geometry.

L. W. COHEN

Number: The Language of Science. A critical survey written for the cultured non-mathematician. By Tobias Dantzig. New York, Macmillan, 1930. xii+260 pp.

While this book was written for the cultured non-mathematician it aims to be useful also to the mathematician even if it demands no mathematical equipment beyond that which is offered in the average high-school curriculum. The headings of its twelve chapters are as follows: Fingerprints, the empty column, number lore, the last number, symbols, the unutterable, the flowing world, the act of becoming, filling the gaps, the domain of number, the anatomy of the infinite, and the two realities. From these headings it may be inferred that the book is largely devoted to a discussion of philosophical questions and deals with an extensive range of ideas. It has the very commendable aim of contributing towards stressing the cultural side of mathematics.

The book contains a number of interesting quotations from the works of eminent mathematicians as well as portraits of the following: Leibniz, Fermat, Poincaré, Euler, Abel, Newton, G. Cantor, Descartes, Gauss, Galileo, and Kronecker. It does not aim to be a history of mathematics but contains a large number of references to historical questions. These are obviously introduced with a view to increase the interest of the reader and slight inaccuracies involved therein are of secondary importance. It may, however, be desirable to note here a few modifications which can easily be incorporated into later editions of this unique and inspiring work.

On page 44 there appears the widespread interchange of the definitions of excessive and defective numbers to which attention was called in School and Society, volume 18 (1923), page 621, and two pages later it is stated that Euclid contended that every perfect number is of the form $2^{n-1}(2^n-1)$. It is true that Euclid proved that such numbers are perfect whenever 2^n-1 is a prime number but there seems to be no evidence to support the statement that he contended that no other such numbers exist. On page 96 it is stated that the arithmetization of mathematics began with Weierstrass in the sixties of the last century. The fact that this movement is much older was recently emphasized by H. Wieleitner, Jahresbericht der Deutschen Mathematiker-Vereinigung, volume 36 (1927), page 74. On page 87 it is stated that the *arithmos* of Diophantus and the *res* of Fibonacci meant whole numbers, and on page 89 we find the statement that in the pre-Vieta period they were committed to natural numbers as the exclusive field for all arithmetic operations. On the contrary, operations with common fractions appear on some of the most ancient mathematical records.

G. A. MILLER