In the notes on page 54, the statements concerning perfect numbers and the largest known prime are not up to date.

However, the author has succeeded in his aim to write an attractive account of the main properties of periodic decimals and to use that topic as a concrete means to acquaint the immature reader with some important theorems of the theory of numbers and to arouse his curiosity to pursue the theory further.

L. E. DICKSON.

Compendio de Álgebra de Abenbéder. Texto árabe, traducción y estudio por JOSÉ A. SÁNCHEZ PÉREZ. Madrid, 1916. (Junta para Ampliación de Estudios e Investigaciones científicas, Centro de Estudios históricos.)

THE translator, who has an enthusiastic hope that some day an adequate history of mathematics in Spain will be written, sees in this manuscript a contribution of material for such a book. But the translation is of value for another reason: it makes accessible to the mathematical world in general another of the works compiled by the Mussulmans between the eighth and fifteenth centuries. Sr. Pérez begins his introduction with a brief account of certain phases of the history of mathematics in his own country and closes it by thirty pages of discussion of questions relating to the contents of this document and its authorship and date.

The Compendio de Álgebra is contained in manuscript 936 of the Escurial library (Arabic section). There are forty-six folios in Arabic characters of Spanish type. The date, as given in the document, is the year 744 since the Hegira. Abenbéder understands that the object of algebra is the solution of equations. He explains his subject in the form of ordinary discourse, without employing the notations of algebra. The work is divided into two parts—the theoretical and the practical. In the former, the first six "questions" treat the six forms of equations given by Al-Khowarizmi. Some of the particular equations used are those met with so frequently in these early texts: for example, (in our notation) $x^2 + 10x = 39$ and $x^2 + 21 = 10x$. There are also six "chapters" explaining the fundamental operations with the square roots of numbers and six others dealing with the rules of signs and with the squares and cubes of the unknowns.

The practical part of the book starts out with six problems illustrating the six types of equations. Five of these might well be placed in the next chapter, which contains eleven problems "concerning ten." In each of these sixteen exercises, the number ten is to be divided into two parts according to to some specified condition: for example, the product of the parts divided by their difference equals five and one fourth. Then follow seven collections containing forty-eight examples in all. Half of these are "problems of the squares"; such as, one more than one third of a square multiplied by one more than one fourth of the square equals twenty. Another group of five questions about soldiers involves arithmetical progressions. There are also "problems of commerce," "problems of the gifts," and others concerning our old friends the couriers, who have, by various methods of travel, been pursuing one another so industriously through the pages of algebra textbooks for centuries. After a formal statement that the end of the book of "chéber y almocábala" has been reached, there are appended a problem involving an arithmetic progression and also three meager rules for the solution of the three types of the complete quadratic.

E. B. COWLEY.

First Year Mathematics. By GEORGE W. EVANS and JOHN A. MARSH. New York, Chas. E. Merrill Company, 1916.

As its name indicates, this work is intended for use in the first year of the high-school course, and is a correlation of elementary algebra, plane geometry and the fundamental ideas of coordinate and locus.

In Chapter 1, simple equations in one unknown are introduced as a means of abbreviating arithmetical processes, with applications to ratio, linear and angular measurement, valuation problems, angles and angle relations and circular measurement. It may be noted that the term "stripe" is introduced in this chapter to denote a pair of parallel lines. Also, that it is pointed out in detail that precision of measurement is indicated by the number of significant figures in the result rather than by the number of decimal places. In explaining negative quantities the historical method is followed by assigning to the negative the primitive idea of a shortage to be made up, or caused to disappear, by the addition of a quantity sufficient to cover the shortage. The