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 "chêber y almocâbala" 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 word shortage is the term actually used in the text, with a note to the effect that the process of making up a shortage is the real significance of the Arab word algebra, of which the English equivalent is "restoration."

Chapter 2 takes up approximate computations, including multiplication, division, and square root, with practical rules for fixing the decimal point and determining the accuracy of the result.

Chapter 3 relates to the measurement of areas of plane figures, including the triangle, trapezoid, and circle, and the evaluation of simple formulas.

Chapter 4 is devoted to the solution of fractional equations and certain standard types of problems, notably that of numbers formed by certain digits, the problem of relative velocities, and the ancient problem of ability and time. The problems in this chapter seem to be either irrelevant or of merely historical interest, and might well be replaced by problems of modern application and significance.

Chapter 5 considers simple transformations of algebraic expressions such as transposition and the use of parentheses, and the multiplication and division of polynomials. The algebraic negative is here again explained as a shortage, such for example as arises when a merchant is unable to fill an order because of insufficient stock on hand.

Chapter 6 explains the distinction between an equation of condition and an algebraic identity, and also takes up the factoring of quadratic expressions.

Chapter 7 is devoted to the solution of quadratic equations. An important feature of this discussion is the careful and complete explanation given of the practical meaning of like and unlike roots, of negative and imaginary roots, of meaningless answers, etc.

In Chapter 8 the elementary theorems of plane geometry are treated, including the properties of similar triangles, the ratio properties of triangles, and the Pythagorean theorem, the latter also being treated by the aid of the trigonometric tangent.

Chapter 9 explains the fundamental idea of coordinate and locus, and illustrates by plotting data giving rise to a linear graph. To illustrate the relation of converse statements, such as "If an equation is of the first degree its locus is a straight line," and its converse "If a locus is a straight line its equation is of the first degree," the pupil is required to give the converse of certain other statements, such as "If my straw hat is ruined a horse has stepped on it."

In Chapter 10 simultaneous linear equations are solved by elimination and by combination.

In Chapter 11 simultaneous equations, including quadratics, are solved by the method of substitution, and also graphically by the intersection of their loci.

Chapter 12 consists of 30 pages of supplementary problems for review.

As a brief summary of the treatment, it may be said that formal definitions are reduced to a minimum, and every effort is made to appeal to the common sense of the pupil. The text is so arranged as to give the pupil a clear idea of the meaning and purpose of algebra and geometry, rather than to set forth a logical and conventional system of mathematical doctrine. This is primarily the ideal to be attained in the coordination of elementary mathematics, and as this idea seems to have been clearly the guiding principle in the selection and arrangement of material in this case, it is interesting to note the vitality and unity it gives to the text. Such a one volume text necessarily covers a limited field, but within its limits it is, with a few exceptions, thoroughly modern in its spirit and aims, as well as eminently teachable.

S. E. SLOCUM.

Second-Year Mathematics for Secondary Schools. 2d edition. By E. R. BRESLICH. University of Chicago Press, 1916.

THIS book is one of the numerous recent attempts to correlate elementary algebra, geometry, and trigonometry for purposes of instruction. The idea of correlation is of course one of great possibilities, but to be successfully realized it must be based on some central and unifying principle, such, for instance, as the function concept advocated by Klein. A careful examination of the present work fails to reveal any such principle of selection or arrangement, and leaves the impression of a haphazard collection of unrelated topics.

In order that the book may be judged on its own merits and not by the opinion of the reviewer, the following brief summary of its contents is given.

Chapter 1 is a tabular statement of the geometric theorems