In Chapter X (pages 109–126) on the solution of numerical equations emphasis is put upon the method of Newton on account of its several advantages; but an appropriate treatment is also given of other methods.

Chapter XI (pages 127–149), which is independent of the earlier chapters, contains an easy introduction to determinants and their application to the solution of systems of linear equations.

Finally, Chapter XII (pages 150–166) is devoted to the theory of resultants and discriminants.

The reviewer believes that this book will be found highly satisfactory and that it will have wide use.

R. D. CARMICHAEL.

The Teaching of Geometry. By DAVID EUGENE SMITH. Ginn and Company, 1911. v + 339 pp.

THE Teaching of Geometry is a good book. It is "worth the paper it is printed on," which can not be said of some books and it is worth a great deal more, which can be said of comparatively few books. The preface puts the reader in the spirit of the text immediately. The table of contents tells as completely as one page can what is contained in the three hundred and thirty. The first chapter contains a discussion of "questions at issue" in mathematical pedagogy. The reader is given both opportunity and encouragement to range himself on one side or other of these questions, but not without an understanding of what they mean. The next five chapters include some reasons for studying geometry, a brief history of the development of the subject giving necessarily much prominence to Euclid's part in this development and to efforts at improving or modifying his treatment of the subject. The remainder of the book takes up some of the details of classroom work, but no cut and dried rules are given. The author's own words describe the spirit of this text quite excellently: "Get a subject that is worth teaching and then make every minute of it interesting."

J. V. MCKELVEY.

A History of Japanese Mathematics. By DAVID EUGENE SMITH and YOSHIO MIKAMI. Chicago, The Open Court Publishing Company, 1914. v + 288 pp.

THE history of Japanese mathematics as given by Smith and Mikami seems to furnish a parallel in some respects to the history of mathematics in Europe. Problems of a similar sort were studied in the east and west by very different methods with uniformly identical results. The Japanese methods seemed to be painstaking and exquisite in detail, rather than powerful and rigorous as were the European. The "circle principle" similar to the calculus, an equivalent of Horner's method, the value of π, determinants, configurations of circles, ellipses and straight lines on a folding fan, i. e., in the sector of an annulus were among the subjects studied by Japanese mathematicians. In the earlier years, foreign learning was forbidden entrance to Japan. A few pupils studied with teachers of their own choosing. Frequently these teachers kept secret their most precious discoveries or revealed them to their favorite pupils on condition that the information should go no further. Japanese teachers were accustomed for a long time to post problems for solution on the temple doors, frequently using a pupil's name rather than their own.

The "closed door" method of study continued, but with weakening prestige, until the beginning of the nineteenth century, when western learning was freely recognized.

J. V. McKelvey.

Die realistische Weltansicht und die Lehre vom Raume. Von E. Study. (Band 54, Die Wissenschaft, Einzeldarstellungen aus der Naturwissenschaft und Technik). Braunschweig, Friedr. Vieweg und Sohn, 1914. ix + 145 pp.

The purpose of this essay appears very clearly from an announcement by the publishers, according to which the author attempts to show that the question concerning the true nature of space, like others, is a problem of natural science that cannot be answered by "pure reason," as proposed by Kant.

In the theory of the problem of space it is shown that, as in natural sciences in general, nothing can be accomplished without the aid of experience and hypotheses. Of these, so far, only the euclidean hypothesis has gained practical importance, although to the non-euclidean hypotheses must be accorded the same theoretical value (Erkenntniswert).

The first part of the book deals with philosophic questions and is accessible to a generally educated public. The second part requires a fair knowledge of analytic geometry. It is