teach and in what order? A very useful but rather out of place chapter on the theory of irrational numbers is interjected at this point. The theory and application of the Dedekind cut as well as Cantor's theory of irrational numbers are outlined quite fully. Strenuous objection is made to the custom of American texts of applying directly the laws of arithmetical proportions to geometrical quantities. Rational advice is also given against the tendency to number theorems and operations one, two, three, etc., and to compel students to commit this enumeration.

The last seven chapters treat topics rarely found in an elementary American text. The discussion of similarity of plane figures, with some suggested applications, is valuable. The extension of the idea of similarity to circles is very fruitful. Various methods of "measuring" circles are treated, including Huygens' method, although this is pointed out as being of doubtful value in the lower schools. Anharmonic ratios of points on a line and of lines through a point are treated with elegance, and considerable space is devoted to pole and polar with respect to a circle. It seems unfortunate that American texts ignore so largely these fruitful and interesting fields. Pencils and nets of circles, with their properties, are discussed in one chapter and inversion in the plane in another. The last chapter is a long discussion of the Apollonius tac-problem. The methods of Apollonius are first discussed, then the modern solutions of Gergonne, Massfeller, and C. Adams are criticised and tested bv Study's criteria. The authors' discussion of Study's criteria for the best solution of a construction problem is not without interest. This last half of the book is replete with brief scientific discussions and helpful remarks which the reviewer must refrain from pointing out in more detail. The authors are not entirely free from some of the faults they inveigh against, but the volume doubtless deserves a place among other books of its kind, for it is fearless in its criticisms of others, is thorough in research, and has the merit of bringing the history and bibliography up to date.

D. D. Leib.

Complementi di Analisi algebrica elementare. By Federico Amodeo. Luigi Pierro, Naples, 1909. 284 pp.

This little volume is one of a series of elementary text books by the same author and is intended for use in the Istituto Technico of Italy. The author says in the preface that a stu-