especial attention, while the theory of imaginary quantities will be studied mainly to secure thoroughness in subsequent parts of his course.

As it has frequently been a part of the author's duty to ascertain what is really left of a course of mathematical study in the minds of those who have been through college, some hints on the best methods of study in connection with the present work may be excused. If asked to point out the greatest error in our usual system of mathematical instruction from the common school upward, he would reply that it consisted in expending too much of the mental power of the student upon problems and exercises above his capacity. With the exception of the fundamental routine-operations, problems and exercises should be confined to insuring a proper understanding of the principles involved: this once ascertained, it is better that the student should go on rather than expend time in doing what it is certain he can do. Problems of some difficulty are found among the exercises of the present work; they are inserted rather to give the teacher a good choice from which to select than to require that any student should do them all.

It would, the author conceives, be found an improvement on our usual system of teaching algebra and geometry successively if the analytic and the geometric courses of mathematics were pursued simultaneously. The former would include algebra and the calculus, the latter elementary geometry, trigonometry, and analytic geometry. The analytic course would then furnish methods for the geometric one, and the latter would furnish applications and illustrations for the analytic one.

The Key to the work, which will be issued as soon as practicable, will contain not only the usual solutions, but the explanations and demonstrations of the less familiar theorems, and a number of additional problems.

The author desires, in conclusion, to express his obligation to the many friends who have given him suggestions respecting the work, and especially to Professor J. Howard Gore of the Columbian University who has furnished solutions to most of the problems, and given the benefit of his experience on many points of detail.