## PREFACE.

to lead him to investigate these laws for himself as soon as he has sufficiently advanced in his course. Nos. 8, 9, 10 and 11 afford instances of such exercises.

Others of the questions proposed are preparatory or interpretation exercises. These might well have been omitted, were it not that they are generally omitted from the text-books and too often neglected by teachers. Practice in the interpretation of a new notation and in expression by means of it, should always precede its use as a symbolism itself subject to operations. Nos. 28 to 86 of Ex. iii., and nearly the whole of Ex. xv. may serve for instances.

By far the greater number of the exercises are intended for practice in the methods exhibited in the solved examples. As many as possible of these have been selected for their intrinsic value. They have been gathered from the works of the great masters of analysis, and the student who proceeds to the higher branches of mathematics will meet again with these examples and exercises, and he will find his progress aided by his familiarity with them, and will not have to interrupt his advanced studies to learn processes properly belonging to elementary Algebra. In making this selection, it has been found that the most widely useful transformations are, at the same time, those that best exhibit the methods of reduction here explained, so that they have thus a double advantage. A great part of the exercises have, of necessity, been prepared specially for this work.

Articles and exercises have been prepared on the theory of substitutions, on Elimination, &c., but it has finally been decided to hold these over for Pt. ii., which will probably appear if the present work be favorably received. SECT. 1 SECT. 2 SECT. 3

SECT. 1. SECT. 2.

SECT. 1.-SECT. 2.-SECT. 3.-SECT. 4.-SECT. 5.-

SECT. 1.-SECT. 2.-SECT. 3.-SECT. 4.-

SIMPLE EQ Prelim

SIMULTANEO Equatio

EXAMINATION

iv