THE FUNDAMENTAL PRINCIPLES OF ALGEBRA.*

This section of the Association, over which I have the honor of being called upon to preside, may be said to be a double section, for it comprises both mathematics and astronomy; as a consequence, the addresses which have been delivered by my predecessors fall into two distinct groups, the mathematical and the astronomical. Of the former class I have had the pleasure of listening to three: Professor Gibbs on Multiple Algebra, Professor Hyde on the Development of Algebra, and Professor Beman on a Chapter in the History of Mathematics. Each of these addresses was devoted to one feature or other of the development of Algebra, and the subject which I have chosen for to-day is another aspect of the same wonderful phenomenon. It is a subject which interests alike the mathematician and the philosopher, and indeed all thinking men, for it concerns the foundations of that science which is generally acknowledged to be the most perfect creation of the human intellect.

I propose then to review historically and critically the several advances which have been made respecting the fundamental principles of algebra. Here I am mindful of the advice which Horace gives a young

* Address by the Vice-President and Chairman of Section A., Astronomy and Mathematics, of the American Association for the Advancement of Science, Columbus meeting, August, 1899.