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CONTENTS

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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE PAST AND FUTURE OF THE STUDY OF SOLUTIONS[1]

SOLUTIONS have been known since earliest times, and the problems which they represent have been studied by a long line of very able investigators. All of the early work on solutions has been inseparably linked with the study of chemical phenomena. Indeed, up to the year 1887 chemical views of solutions have predominated. So for example, in his lectures delivered at Yale College in 1837, Benjamin Silliman, Sr., considered solutions as chemical compounds; and in his memorable work on theoretical chemistry which appeared in 1863, Herman Kopp treated solutions as chemical compounds that exhibit variable proportions, which mode of treatment was retained by A. Horstmann when in 1883 he wrote the second volume of the new edition of Kopp's work, now known as Graham-Otto's "Lehrbuch der physikalischen und theoretischen Chemie." Ever since the days of Lavoisier, when the so-called law of definite proportions was first recognized, a distinction has been drawn between compounds which follow that law and combinations that do not. Chemical combinations which exhibit definite qualitative and quantitative composition that can not be varied gradually by small increments arbitrarily chosen were soon termed definite chemical compounds, whereas solutions, whose composition may be varied gradually, quite arbitrarily—at least

[1] Address of the vice-president and chairman of Section C—Chemistry—American Association for the Advancement of Science, Boston, 1909.