

SYMPOSIUM ON THE CHEMISTRY OF LIQUID AMMONIA SOLUTIONS¹

INTRODUCTION TO THE SYMPOSIUM

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Researches concerning liquid ammonia solutions were initiated in this country about forty years ago at the University of Kansas. The pioneers in this field were Cady, Franklin, and Kraus, all of whom are well known in American chemistry for their contributions to the science. Much of the earlier work on the physical properties of ammonia solutions is due to Cady. Franklin not only contributed to our knowledge of the physical and chemical properties of these solutions but, in addition, developed a rational system for nitrogen compounds, which has enabled workers to classify and predict reactions on the basis of the more familiar reactions of oxygen compounds in an aqueous medium. Chemistry as a whole, and especially liquid ammonia chemistry, has recently suffered a great loss in the passing of Franklin. The absence of his scientific contributions, as well as his unusually fine personality, is greatly felt by American chemistry.

Kraus' interest in ammonia solutions has been sustained over this period of more than forty years. His earlier work was primarily concerned with the physical properties of ammonia solutions, with special reference to the ionization theory and the properties of metals. He later became more interested in the chemistry of ammonia solutions, since it was early recognized that ammonia is a very suitable solvent for studying the chemistry of many types of compounds, some of which are incapable of existence in an aqueous medium.

It was also recognized at a rather early date that liquid ammonia is an excellent solvent for organic compounds; as a matter of fact, it appears to resemble alcohol more than any other solvent in its ability to dissolve

¹ This Symposium was held under the joint auspices of the Division of Physical and Inorganic Chemistry and the Division of Organic Chemistry at the Ninety-sixth Meeting of the American Chemical Society, held at Milwaukee, Wisconsin, September, 1938.

organic substances. Thus, it is not surprising that in the past two decades a great deal of attention has been given to the chemistry of ammonia solutions of organic compounds.

Between the fields of organic chemistry and inorganic chemistry is another, that of the metallo-organic compounds. A considerable portion of our present knowledge of the chemistry of these compounds has been gained through studies in which liquid ammonia has served as the solvent medium.

Accordingly, it is more than appropriate, it is essential that organic and inorganic chemists get together to present results of their investigations of ammonia solutions. It was with this purpose in mind that this symposium was organized.