

EDWARD DWIGHT WASHBURN
1881-1934

Edward Dwight Washburn came to Illinois to take charge of the division of Physical Chemistry in the Department of Chemistry at the University of Illinois, in 1908. He had only just taken his degree of Ph.D. at the Massachusetts Institute of Technology but was selected for this important position because of his recommendation as a young man of unusual promise by Professor A. A. Noyes.

His thesis for the degree was based on an experimental study of the hydration of ions in which he had used the optical rotation of raffinose as a marker while the ions of an electrolyte were transferred in opposite directions in the solution by electrolytic conduction.

Dr. Washburn soon demonstrated the wisdom of our choice by a series of masterly researches carried out by himself and by his students working in the field of the conductivity of electrolytes.

Since conductivity depends in part on the viscosity of the solution he developed a new and very accurate viscosimeter with which the viscosity of water at different temperatures was determined and also the viscosity of solutions of raffinose.

A very careful theoretical and experimental study of the iodimetric titration of arsenious acid laid the foundation for the development of the iodine coulometer. Before, the only chemical method considered sufficiently accurate for the quantitative measurement of electrical currents was the silver coulometer. Washburn and Bates developed the iodine coulometer to a comparable degree of accuracy and Bates completed the study by a careful comparison of the silver and iodine coulometers at the Bureau of Standards in Washington.

For a number of years the Department of Ceramics at the University of Illinois was without a Head because no one available could be found who combined the training in the art with a fundamental knowledge of physical chemistry. Finally it was decided to ask Dr. Washburn to take charge of the Department. During the six years which followed, in spite of his imperfect knowledge of the art of Ceramics, he made notable additions both to the science and the art of the subject. The effect of this period in his life was still apparent in his work as Chief Chemist of the Bureau of Standards.

Germans are very expert in the laborious collection of data from the literature. They have not been so successful in selecting the best

values available from a mass of confused material. At the organization of the Union of Pure and Applied Chemistry, in London in 1919, it was decided to compile Critical Tables of Numerical Data of Physics, Chemistry and Technology and in 1922 Dr. Washburn was asked to take the position of Editor in Chief for this undertaking. With the aid of a competent Board of Editors and a very large band of experts, the work was carried through. The Critical Tables will long remain a monument to his ability and steady, self-sacrificing devotion to the execution of an extremely difficult task.

In 1926 Dr. Washburn was selected by a group of eminent chemists and physicists as their first choice for appointment as the Chief Chemist of the Bureau of Standards.

Soon after the discovery of the isotope of hydrogen called deuterium by Harold C. Urey, for which Professor Urey received the Nobel prize, Dr. Washburn suggested that "heavy water" might be concentrated by electrolysis. This provided the only successful method thus far used for the separation of deuterium in quantity.

Dr. Washburn married Miss Sophie de Veer of Boston in 1910. She died in 1932, two years before Dr. Washburn. They have left four children, William de Veer, Janet, Roger D. and Barbara.

Further details and a list of Dr. Washburn's published papers will be found in a Biographical Memoir soon to be published by the National Academy of Sciences.

WILLIAM ALBERT NOYES