NATIONAL ACADEMY OF SCIENCES

VICTOR KUHN LA MER

1895—1966

A Biographical Memoir by

LOUIS P. HAMMETT

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June 15, 1895–September 26, 1966

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VICTOR LaMER had a lifelong devotion to the cause of good science and good teaching of science. That he was a perfectionist shows throughout his scientific work. In everything he did the background in principle was thoroughly studied, the experimentation was of the highest possible precision and showed the most careful attention to detail and to completeness, and the publications that resulted were clear and effective. He had the ability and the willingness, which are all too rare, to recognize the limitations of a theory as well as its strengths. In many areas his work remains a key reference, sometimes even after several decades.

He taught a central course in the graduate curriculum in chemistry at Columbia University, and he taught it with a continuing interest that reached deeply into the history of the subject as well as into the logic of its organization. He expected much of his students: He could be emphatic in his disapproval of carelessness or incompetence, but he could be equally emphatic in his praise of ability and accomplishment.

He gave richly of his time and his energy to the doctoral candidates who worked with him. He schooled them well in his own principles of probity, precision, and thoroughness, and they looked on him with respect and affection.

LaMer's own doctoral work, carried out with Henry Sher-

man, was in the field of the chemistry of food and nutrition—a subject to which his thesis made important contributions, especially in the application of statistical methods. His interests soon turned, however, to physical chemistry. In 1922 and 1923 a fellowship took him to Europe, where he arrived in Brønsted's laboratory in Copenhagen at an exciting period. New vistas in the old field of electrolyte chemistry had suddenly been opened by the ideas of Brønsted and Debye, and LaMer became a leader in the exploitation and development of these ideas. His publications of the next decade on the activity coefficients of multiply charged ions and on the rates of reactions involving such ions still deserve the most careful study and attention from anyone concerned with the chemistry of electrolytes. He and his co-workers also did important theoretical work on electrolyte solutions.

When in 1931 the existence of deuterium was discovered at Columbia, LaMer did pioneering work on the properties of solutions in heavy water. His studies on acid–base equilibria in that solvent were especially significant. In 1933 he questioned the prevalent myth that activation energy is independent of temperature, and shortly thereafter he and his students demonstrated experimentally that it does depend sharply on temperature for reactions involving ions in solution. This lent valuable support to the then nascent transition state theory of reaction rate, a theory that has revolutionized the way in which chemists interpret the rates of reactions in solution. In the same year he reported a study of acid–base equilibria in the poorly ionizing solvent benzene. This was a ground-breaking investigation in a field that has since become one of major importance.

With the arrival of World War II, LaMer undertook as a patriotic service the investigation of smokes and other fine dispersions. He and Sinclair established principles and developed what is now a standard apparatus for the preparation of monodisperse aerosols. They further discovered a new optical

effect—the higher order Tyndall spectra—that enables one to measure particle size rapidly and simply.

When the war ended LaMer was of an age when many scientists tend to slow down and to continue along well-trodden paths. For him, however, the post-war period was one of adventure into new fields and of highly original activity. His interest in gaseous dispersions expanded to liquid systems, he made contributions to the difficult problems involved in sedimentation and filtration, and he developed principles and made valuable new observations with respect to flocculation and dispersion—processes of potentially large technical importance as well as of purely scientific interest. Novel studies of the rate of evaporation through surface monolayers also combine scientific interest with potential applications of value for the conservation of water supplies.

Victor Kuhn LaMer was born in Leavenworth, Kansas, on June 15, 1895, the son of Joseph Secondule LaMer and Anna Pauline Kuhn. He obtained the A.B. degree at the University of Kansas in 1915. During the next two years he was a high school teacher, a student at the University of Chicago, and a research chemist at the Carnegie Institution of Washington. In 1917 he was commissioned 1st Lieutenant in the Sanitary Corps, U.S. Army. He entered graduate school at Columbia University in 1919 and obtained the Ph.D. degree there in 1921. Appointed instructor in general and inorganic chemistry at Columbia in 1920, he rose through various grades at that institution, attaining full professorship in 1935. Awarded a Cutting Fellowship, he worked at Cambridge University in 1922 and at the University of Copenhagen in 1923. He was a member of Division 10 of the Office of Scientific Research and Development, 1940–1945. He became Emeritus Professor of Chemistry in 1961, but continued his scientific activities. He held the position of Senior Researcher in Mineral Engineering

at Columbia, and he continued until 1965 as editor of the *Journal of Colloid and Interface Science.* He had been the founding editor of that journal in 1956, and in March 1966 a *Festschrift* edition honored him on his retirement as editor and on his seventieth birthday. He was in England to present a paper at a meeting of the Faraday Society at the time of his sudden death in Nottingham on September 26, 1966.

LaMer was honored by the Presidential Certificate of Merit in 1945, by the Kendall Award in Colloid Chemistry in 1956, by the honorary D.Sc. degree of Clarkson College of Technology in 1962, and by election to the Royal Belgian Academy of Arts, Letters, and Sciences and to the Royal Danish Academy of Science. He was Honorary Professor of San Marcos University of Lima, Peru, in 1950, Fullbright Professor at Copenhagen in 1953, and Fullbright Lecturer in Australia in 1959.

He was elected to the National Academy of Sciences in 1948. He was also a member of the American Chemical Society, the American Physical Society, the Faraday Society, and Sigma Xi and Phi Lambda Upsilon; he was a Fellow of the New York Academy of Sciences, of which he had been President in 1949. He was a member of the Cosmos Club of Washington and of the Men's Faculty Club of Columbia University.

On July 31, 1918, he married Ethel Agatha McGreevy. They had three daughters: Luella Belle (Mrs. A. P. Slaner), Anna Pauline (Mrs. Alex Burgo), and Eugenia Angelique (who died in childhood). The LaMers lived in Leonia, New Jersey, which was the home of many others of the Columbia faculty, and were active in social and community affairs of that town.

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KEY TO ABBREVIATIONS

Am. J. Phys. = American Journal of Physics
Am. J. Physiol. = American Journal of Physiology
Ann. N.Y. Acad. Sci. = Annals of the New York Academy of Sciences
Chem. Rev. = Chemical Reviews
Ind. Eng. Chem. (Anal. Ed.) = Industrial and Engineering Chemistry (Analytical Edition)
J. Am. Chem. Soc. = Journal of the American Chemical Society
J. Biol. Chem. = Journal of Biological Chemistry
J. Chem. Educ. = Journal of Chemical Education
J. Chem. Phys. = Journal of Chemical Physics
J. Colloid Sci. = Journal of Colloid Science
J. Phys. Chem. = Journal of Physical Chemistry
Phys. Rev. = Physical Review
Proc. Nat. Acad. Sci. = Proceedings of the National Academy of Sciences
Trans. Faraday Soc. = Transactions of the Faraday Society

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