



Ruben L. Woodward

RICHARD L. WOODWARD

1913-1981

BY GORDON G. ROBECK

RICHARD L. WOODWARD, consulting engineer and a former Vice-President of Camp, Dresser and McKee, Inc., of Boston, died at the age of sixty-seven on March 15, 1981. He had served for many years as a highly effective leader of government environmental engineering research and as a private consultant throughout the world. Because of his total dedication to knowledge and to its practical application to solving water supply problems, his influence will continue for many years among researchers and designers.

Born in Kansas City, Missouri, on December 11, 1913, Dr. Woodward received his B.S. degree in civil engineering from Washington University, St. Louis, in 1935; his M.S. degree in sanitary engineering from Harvard University in 1948; and his Ph.D. in nuclear physics from Ohio State University in 1952.

After working briefly with a consulting firm in St. Louis, Dr. Woodward joined the U.S. Public Health Service in 1937, where he served with distinction for twenty-six years. His assignments took him to Washington, D.C., Atlanta, and Cincinnati, and they usually emphasized engineering problems associated with water quality and resources. Analysis and interpretation of data plus the writing of clear, concise reports were his strong points in these early days of his career. The famous *Ohio River Water Pollution Investigation Report* is just one example of a major contribution that he made to the understanding of stream sanitation. Later, in the 1950s, after he finished a special study period in nuclear physics, he became a national leader

in the research designed to help form the scientific and technical basis for the revised U.S. Drinking Water Standards. To accomplish this he effectively developed a staff of researchers of various disciplines that worked harmoniously as a team mainly because of his quiet devotion to knowledge and his openness to suggestions from all staff members.

The revised Drinking Water Standards were issued in 1962, and he then retired from the U.S. Public Health Service as a Sanitary Engineer Director in 1963. After a few years as a Senior Research Associate at the Harvard School of Public Health, he joined the consulting firm of Camp, Dresser and McKee in Boston for the next fifteen years, spending much of the time as Vice-President of International Affairs. While he was there, some of his most notable work included the water treatment plant in Bangkok, one of the world's largest; the advanced wastewater treatment plant for Greater Chicago; a water supply and sewerage master plan for Alexandria, Egypt; and water treatment plants for Taipei, Singapore, Manila, Bogota, and Istanbul.

Dr. Woodward was an active member of nine professional societies and a dozen prominent technical committees. He became a member of the National Academy of Engineering in 1977. He served as a Representative of the American Society of Civil Engineers to the U.S. Environmental Protection Agency's Committee on Federal Drinking Water Standards. He was a Diplomat of the American Academy of Engineering. He served on the panel on Public Water Supplies for the Committee on Water Quality Criteria of the National Academy of Sciences. He was also a member of the Subcommittee on Water Supply of the Committee on Sanitary Engineering of the National Research Council from 1955 to 1964.

The author of more than forty papers on water and wastewater in professional journals, he received the Thomas R. Camp Medal of the Water Pollution Control Federation, the Research Award of the American Water Works Association, the Clemens Herschel Award of Harvard University, and the Meritorious Service Medal of the U.S. Public Health Service. Some of his prize-winning papers involved unique treatment of water to control organic contaminants, algae, viruses, and other pathogens. He and his team members enriched

the literature on the subject of better public health through the application of engineering principles to waste and water quality control.

Dr. Woodward was able to do this quietly because of a unique ability to lead a multidisciplinary group of scientists and engineers by the force of his intellect and knowledge rather than by virtue of rank or position. He truly opened the gates for staff members to contribute their own ideas and then arranged for their professional involvement and growth outside the organization. The team spirit was outstanding. Although occasionally ill in recent years, Dr. Woodward continued his search for recent research findings and their application into designs wherever it was practical throughout the world.

Many of the suggestions he made for understanding and correcting environmental problems are still being followed, so his pace setting will remain of great influence in public health practice. No person could be expected to do more: He served his country and profession with distinction.