In Memoriam

Dr. Joseph Edward (“Ed”) Rall 1920–2008

ED RALL, AN EMINENT THYROID SCIENTIST AND CLINICIAN, the founder of a legendary thyroid group at the National Institutes of Health (NIH) in Bethesda, MD, and a leader in the management and growth of intramural NIH during the second half of the last century, died on February 28, 2008, shortly after his 88th birthday. He was born in Naperville, IL, a small community outside of Chicago; graduated from North Central College in Naperville, where his father was president; and received his medical training at Northwestern University Medical School (MD 1945) and Wesley Memorial Hospital in Chicago. While a student at Northwestern he was a teaching assistant in pharmacology and a research fellow in experimental medicine, and published papers on the parasympathetic nervous system with Carl Dragstedt. His fellowship and residency at Mayo Clinic in Rochester, MN, began in 1945, was interrupted by 2-year military service in Germany at the end of World War II, and was completed in 1950. It was at Mayo that Ed began his career in endocrinology and thyroidology under the mentorship of early leaders in radioiodine kinetics research, Raymond Keating, Alexander Albert, and Marschelle Power. In 1952 he received the Ph.D. from the University of Minnesota for his work on the metabolism of labeled thyroid hormone.

In 1950 Ed moved eastward, accepting a position with Rulon Rawson at the Memorial Sloan Kettering Cancer Center in New York City, where he remained for the next 5 years. Rawson's group was engaged in the early development of treatment for metastatic thyroid cancer with radioactive iodine (I-131), and Ed became a key member of the team of radiation physicists and clinicians treating patients at MSK and at Brookhaven National Laboratory. In modern terms, this would be called a phase 1 study to evaluate toxicity as well as effectiveness, and it devised methods for assessing bone marrow (1) and pulmonary radiation and in defining the safe limits of therapy. In subsequent years, Benua, Sonnenberg, and colleagues (2) reviewed the results in a large series of patients and established the principles of whole-body I-131 dosimetry still in use today. At Brookhaven, Ed met Robert Conard, who became director of the Marshall Islands study of radiation-induced thyroid cancer caused by atom bomb testing and enlisted Ed in this work. This contributed to his later involvement with the National Academy of Sciences Committee on the Biological Effects of Ionizing Radiation.

A by-product of radioiodine treatment of thyroid cancer and hyperthyroidism was the ability to examine the radioactive products. This led Ed, working with Jack Robbins, to explore the labeled thyroid proteins including thyroglobulin,

the secreted thyroid hormone in blood, and the association of the hormone with serum proteins. This work continued after Ed and Jack moved to the NIH, and in 1960 they published a landmark paper (3) in *Physiological Reviews* titled “Proteins associated with the thyroid hormones” and developed the then revolutionary, now classic, hypothesis that it is the free hormone, only a tiny fraction of the total, that is the active hormone.

In 1955 Ed was invited to organize and lead a new laboratory in Bethesda, the Clinical Endocrinology Branch, at the National Institute of Arthritis and Metabolic Diseases. Within a few years he assembled one of the world's leading centers for basic and clinical thyroid research. His breadth of knowledge, enthusiasm, and personal involvement were key elements in the group's success, its core of senior scientists remaining intact for more than 25 years. A close relationship with the other NIH endocrine groups created a superb

atmosphere for training in all aspects of the field. Data clubs, journal clubs, and clinical rounds of these groups, often in combination, created an outstanding educational experience, frequently stimulated by Ed's presence and influence. After about 5 years, while continuing his personal research within the Branch, Ed was appointed Institute Scientific Director, a position he held for over 20 years, and in 1983 he became Deputy Director of Intramural Research for NIH. These were formative years in the establishment of a stable academic community within a rapidly expanding government agency, and an exciting time in the enormous expansion of scientific knowledge and technology. Ed was one of the pilots, and the NIH benefited greatly from his broad and also detailed knowledge of multiple disciplines ranging from mathematics to chemistry and physics, and to clinical medicine. His interest in research fellows and in development of their training programs was important during this period. In 1991 Ed returned to the laboratory and in 1995 retired to Scientist Emeritus, still continuing research with a small group of international fellows, working on invertebrate hormone receptors, until failing health began to limit his activity.

Ed was active in the broader scientific community, both nationally and internationally, serving as President of the American Thyroid Association in 1964 and receiving the Distinguished Service Awards of the American Thyroid Association in 1967 and The Endocrine Society in 1983. Among his many honors, he was elected to membership in the Association of American Physicians, the National Academy of Sciences, USA, the Societe de Biologie, France, and the Royal Academy of Medicine, Belgium, and received honorary de-

grees from the University of Naples, Italy, and Charles University, Prague, attesting to his international prominence.

But Ed's life was not totally consumed by science. He was a devoted tennis player and sailor; he helped manage a working farm on the banks of the Potomac River acquired by him and several NIH colleagues; his home, with his charming and gracious wife, Caroline, and his son and daughter, was a frequent meeting place for friends and colleagues from all over the world. He enjoyed and lived his life in the fullest sense and has left his mark on several institutions, on his field of endeavor, and especially on the many individuals who came to know him.

References

1. Rall JE, Foster CG, Robbins J, Lazerson R, Farr LE, Rawson RW 1953 Dosimetric considerations in considering hematopoietic damage from radioiodine. *Am J Roentgenol Radium Ther Nucl Med* **70**:274-282.
2. Benua RS, Cicale NR, Sonenberg M, Rawson RW 1962 The relation of radioiodine dosimetry to results and complications in the treatment of metastatic thyroid cancer. *Am J Roentgenol Radium Ther Nucl Med* **87**:171-182.
3. Robbins J, Rall JE 1960 Proteins associated with the thyroid hormones. *Physiol Rev* **40**:415-489.

—Jacob Robbins, M.D.*

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*Sadly, Dr. Jacob Robbins, an outstanding endocrinologist and role model, died suddenly on May 12, 2008, a few weeks after writing this tribute—The Editors.