



## IN MEMORIAM

Charles A. Dekker  
Professor of Biochemistry, Emeritus  
UC Berkeley  
1920 – 2008

Charles Abram “Chuck” Dekker joined the University of California, Berkeley, faculty in 1951 and soon became a highly respected member of the academic community as a specialist in nucleic acid chemistry, a devoted teacher and mentor of undergraduate and graduate students, and a tireless member of numerous administrative committees. In addition to his departmental commitments, Dekker gave his time freely to campus administration, with service on the Council for Special Curricula; Committees on Educational Policy, International Education, Health and Medical Sciences, and Building Campus Development; and on the Representative Assembly. He also served on the systemwide University Committee on Educational Policy, on the Assembly of the Academic Senate, and on the Academic Council. Following retirement in 1985, he remained a loyal supporter of the University until he passed away peacefully at his home in El Cerrito, California, on September 6, 2008.

Chuck was born in Chicago, Illinois, on April 9, 1920, and grew up in Grand Rapids, Michigan, where his father, Harry Dekker, was registrar and professor at Calvin College, a small (1,300 students in 1950), “distinctively Christian, academically excellent liberal arts college... of the Christian Reformed Church.” (The quotation is from the college website.) Chuck attended the Grand Rapids Christian High School in a college preparatory program, after which he went on to major in mathematics and chemistry at Calvin College. He entered the graduate program in biochemistry at the University of Illinois in 1941, but his studies were interrupted in 1944 by World War II when he withdrew to enlist in the Navy as an ensign. He served in the North Pacific, aboard the USS Concord and the USS Leyte, until his discharge with the rank of lieutenant (j.g.) in 1946. He returned to Urbana to continue graduate work leading to the Ph.D. degree in 1947 under the supervision of Professor William C. Rose, an eminent biochemist who specialized in mammalian metabolism and nutrition.

In the same year, Chuck married Alice Misegades and the two went off to Yale University Medical School, Rose’s alma mater, where Chuck did postdoctoral research for two years (1947-1949) with the famous protein chemist Professor Joseph Fruton. He then continued postdoctoral training at Cambridge University (1949-1951) with Professor Sir Alexander (later Lord) Todd, who received the 1957 Nobel Prize in chemistry for his work on the structure of polynucleotides and nucleotide coenzymes. There, Dekker was introduced to nucleic acid chemistry and what was to be the focus of his scientific career. While at Cambridge, he learned the newer techniques for nucleic acid analysis, particularly paper chromatography, and applied them to confirm that the uracil that several workers had found in digests of DNA (deoxyribonucleic acid) was an artifact formed by chemical degradation of cytosine.

Dekker was recruited by Professor Wendell Stanley, who had come to Berkeley in 1948 from The Rockefeller Institute to establish the Virus Laboratory (an Organized Research Unit) and a new Department of

Biochemistry in the College of Letters and Science. Stanley had the somewhat novel plan to assemble a biochemistry faculty whose individual training covered all of the major research specialties in the field. At that time, these included carbohydrates, lipids, proteins, nucleic acids, physical biochemistry, enzymology and virology. Dekker, having trained with the world's top nucleic acid chemist, was a clear choice to exploit this important subject.

This was an exciting time in the biosciences, stimulated in part by the dramatic proposal by Watson and Crick of a model, the so-called "double helix," for the secondary structure of DNA. One of Dekker's early publications at Berkeley aimed to clarify the Watson-Crick model by marshaling extensive experimental data suggesting that the DNA was not composed of two intact strands, but that the individual chains were occasionally interrupted at nonoverlapping intervals. Dekker went on to wide-ranging studies of ribonucleases, the enzymes that catalyze hydrolysis of the phosphodiester bonds in RNA (ribonucleic acid), a polymer in which ribose and uracil replace the deoxyribose and cytosine of DNA. In a search for new enzymes of use in sequencing RNA, he and his students purified ribonucleases from a variety of sources, including bacteria, fungi, and several human secretions, and then studied their specificities of action and the structural differences in their glycosylation patterns. Along the way, they developed many new methods for separation and characterization of the enzymes. These studies paralleled work in other laboratories on the different ribonucleases that are involved in the posttranscriptional processing of RNA to give a variety of shorter forms, each type having a unique cellular function. A former student has noted, "Secretory ribonucleases provide cytotoxic activity against a wide range of pathogens. Thus, ribonucleases studied and characterized in Chuck Dekker's laboratory over twenty-five years ago are considered to present substantial therapeutic potential and may be useful in treatment of inflammatory disorders." The broad scope of Dekker's research brought him into close association with other important nucleic acid chemists, including Gobind Khorana and Michael Smith, both Nobel laureates, during time he spent as a visiting scientist at the University of British Columbia. He also returned to Cambridge University on sabbaticals in 1958 and 1966.

Dekker was especially valued for his role in teaching, advising and mentoring students. To quote a colleague, "Chuck was an extremely devoted and effective teacher at both the undergraduate and graduate levels. He served as an advisor to many students, some who had difficulties in dealing with their mentors. His interest in students and his sensitivity to their concerns about surviving in a competitive environment led to the rescue of some who then went on to complete their graduate work successfully." This concern for students was confirmed by several of those he mentored. One, who obtained his Ph.D. with Chuck, has commented, "Dr. Dekker had an open heart. He loved people and thus had exquisite sympathy for their hopes and dreams. He saw their full potential and nurtured it. He tended his students with the same delicacy, patience, and wisdom as he did his beloved irises. In response, they bloomed." Another observed, "Dr. Dekker always allowed us grad students to make our own discoveries and explorations, and work it out on our own. It allowed us to become self-sufficient researchers. He was patient. He spent innumerable hours with me on my thesis, going over very tedious language, insisting that it be clear and correct. The writing skill has been a lifelong benefit, learning to write so that it said what I wanted it to say, something my English teachers had tried in vain to do." To paraphrase a third student, "The Boss was a Professor, yes; but, even more, he was a teacher who cared."

The reference above to irises reflects Chuck's longtime hobby, in connection with which he served as president of the Sidney B. Mitchell Iris Society and on the board of the Oakland-East Bay Garden Center. His interest in iris culture found expression in the masses of these showy flowers that covered the hillside behind his home; and, on one occasion, he appeared at a dinner party with the trunk of his car filled with bulbs to be distributed generously to the other guests. His other postretirement activities included work on El Cerrito neighborhood earthquake preparedness, service on the Richmond-Regla, Cuba, Sister City Committee, world travels with Alice under the Elderhostel program, and a continuing loyal support of the Cal Bears.

Chuck was an exemplary academician and a good man who will be missed by all who knew him. He is survived by his wife Alice, a sister Ahleen, daughters Laurie, Emily, and Mary, sons Steven and Harrison, along with seven grandchildren and many nieces and nephews.

Clinton Ballou