

## Obituary



*Walter C. Hamilton*

### **Walter Clark Hamilton 1931–1973**

The scientific community suffered a tragic loss with the premature death of Walter Clark Hamilton on 23 January 1973. Walter was only 41 and in the prime of his scientific career when he fell ill shortly before Christmas and succumbed to cancer about a month later.

Walter was born in Austin, Texas and reared in Stillwater, Oklahoma. After three years as a student at Oklahoma A and M College he graduated in 1950 with a B.S. degree in Chemistry. During the academic year 1950–1951 he was a student at the Eidgenössisches Technisches Hochschule in Zürich as a Swiss Government Fellow. Typical of Walter's vitality and wide-ranging interests not only was he associated with the Physical Chemistry Institute of the ETH during this

period, but he was Program Director of the Akademische Arbeitsgemeinschaft für Radio- und Pressefragen of the University of Bern and participated in the production of a series of educational radio programs.

Upon returning to the United States Walter entered graduate school in Chemistry at the California Institute of Technology, where he carried out his research under the stimulating guidance of Verner Schomaker. Although Walter was nominally interested in experimental electron diffraction from gases, his unusual mathematical talents soon became apparent as he readily developed the application of least-squares methods to the analysis of electron-diffraction data. He also found time to carry out X-ray crystal-structure analyses before receiving his Ph.D. degree in 1954.

During the academic year 1954–1955 Walter was a National Science Foundation Postdoctoral Fellow, as-

sociated with Charles Coulson at the Mathematical Institute of Oxford University.

From Oxford Walter returned to the United States to the position of Research Associate in the Chemistry Department at Brookhaven National Laboratory. There he remained until his death, having risen through the ranks of Associate Chemist and Chemist to Senior Chemist. He was appointed Deputy Chairman of the Chemistry Department in 1968.

During his years at Brookhaven Walter was responsible for developing a group that was one of the foremost in the world in the applications of neutron and X-ray diffraction to the solution of important problems in chemistry and biology. To such work Walter brought great enthusiasm, tremendous personal charm, and remarkable chemical and mathematical abilities. Walter was interested in both the theoretical and practical sides of structural crystallography. His contributions to the theory include his classic work on problems of extinction. The practical applications in his work are manifold: he contributed markedly to our structural knowledge of hydrogen-bonded systems, of rare-gas compounds, of the various structural forms of ice, and more recently to the precise structures of the naturally occurring amino acids.

Walter's mathematical abilities were unusual. Though he was trained as a chemist, his first book *Statistics in Physical Science* (1964) is purely mathematical in content. It displays his unusual talents for making mathematics intelligible and usable to those less gifted than he. Walter, always the practical man, was also an expert programmer. Many of his programs are currently in use throughout the scientific community. He was instrumental in developing the computer-controlled diffractometer system at the High Flux Beam Reactor at Brookhaven, a time-sharing system developed when time sharing was in its infancy. At the time of his death Walter was actively engaged in the problems of remote computing and display, attempting to develop the Brookhaven computer as the center of a network that would serve a wide crystallographic community.

In addition to his book on statistics, Walter was the co-author of two additional books, *Hydrogen Bonding in Solids* (1968) and *Symmetry* (1972), and was sole or co-author of over 130 papers. Typical of Walter's wide-

ranging interests, these papers may be found in such diverse journals as *Reviews of Modern Physics*, *Journal of Chemical Education*, *Journal of Pharmacological Science*, and *Biochemistry*.

Walter willingly devoted his energies to the crystallographic community. Thus he served on the U. S. National Committee for Crystallography, the National Research Council's Division of Chemistry and Chemical Technology, the NRC Committee on Chemical Crystallography, and the NRC Committee on Computers in Chemistry. He was President of the American Crystallographic Association in 1969. Since 1969 Walter served as a Co-editor of *Acta Crystallographica*. He had served on the Computing Commission and on the *International Tables* Commission of the IUCr and was Co-editor of *International Tables for X-ray Crystallography*, Volume 4, which is now in press. He will also be remembered by many for the superb job he did as Chairman of the Local Committee for the Eighth General Assembly and Congress of the IUCr, held in Stony Brook in 1969.

These basic facts concerning Walter's superb scientific and administrative skills tell an incomplete story of the loss that we have all suffered with his death. Walter was ever enthusiastic and generous. He gave freely of his time to help others in their scientific work and to help keep the scientific machinery going. His skills were ever evident when difficult scientific problems arose in private discussions or at scientific meetings. Walter was invariably the first to perceive the essence of a new idea; he was usually the first to detect flaws in a line of reasoning. He always gave credit to those with good ideas, and he gently helped those whose ideas were not so good. Because of his great personal charm, enthusiasm, and honesty he was approached readily for help and advice not only by highly esteemed colleagues of his age and experience, but also by aspiring young scientists. He had the rare ability to interact with individuals of all ages, backgrounds, and interests. Walter will be deeply missed by the very many who respected and loved him for his remarkable scientific abilities and for his superb personal qualities.

JAMES A. IBERS