

Martin Jesse Klein

Martin Jesse Klein, a physicist, distinguished historian of modern physics, and general editor of *The Collected Papers of Albert Einstein* (Princeton University Press), died 28 March 2009 in Chapel Hill, North Carolina.

Born in New York City on 25 June 1925, Martin graduated at the age of 14 from James Monroe High School in the Bronx, where he and classmate Leon Lederman began their lifelong friendship. He received his bachelor's degree in 1942 and his master's in 1944, both in physics, from Columbia University. As part of the effort during World War II, he worked as a physicist at the Columbia Underwater Sound Reference Laboratory in 1944–45 and as a member of the US Navy Operations Research Group in 1945–46. He received his PhD from MIT in 1948 for his dissertation, "Statistical Mechanics of Critical Point Phenomena," supervised by Laszlo Tisza. Martin was a member of the faculty of the physics department at Case Institute of Technology (now Case Western Reserve University) from 1949 to 1967, and he served as acting chairman of the department in his last year there. Martin's work in physics was primarily concerned with how statistical physics provides the connection between thermodynamics and the microscopic features associated with

molecules. Many of his papers in the 1950s addressed fundamental features of the theory more than applications to specific problems. His work in statistical mechanics was in the Dutch school; he paid careful attention to scholarship and the relation of his results to others' work and to the topic being addressed.

When Martin was a National Research Council fellow at the Dublin Institute for Advanced Studies in 1952–53, his interest in Paul Ehrenfest was stimulated when Erwin Schrödinger referenced Ehrenfest's work during a conversation with Martin. In the 1950s, when still primarily a physicist, Martin began to examine the origins of several theoretical developments in the 20th century, particularly the Ehrenfests' work on understanding the second law of thermodynamics and Albert Einstein's quanta. Ehrenfest's life and work were the route that led Martin from theoretical physics to the history of physics. He learned Dutch and spent 1958–59 as a Guggenheim fellow at the University of Leiden, where Ehrenfest had been a professor of theoretical physics. During his visit he came to know Ehrenfest's wife and collaborator, mathematician Tatyana Ehrenfest-Afanasyeva, and was given access to his papers, notebooks, manuscripts, and correspondence. In 1959 Martin published a two-part

paper on Ehrenfest's contributions to quantum statistics and an edition of his collected scientific papers.

In the 1960s Martin extended his historical range and published a series of seminal papers by Max Planck and Einstein on the foundation of quantum theory. He also translated into English and published letters on wave mechanics by Einstein, Schrödinger, Planck, and Hendrik Lorentz. In 1966–67 he received a second Guggenheim fellowship to complete his biography of Ehrenfest, titled *Paul Ehrenfest: The Making of a Theoretical Physicist* (North-Holland, 1970), which was greeted with acclaim by both physicists and historians of science. Martin later turned to the investigation of the foundations of thermodynamics and statistical mechanics in the 19th century, writing important papers on Ludwig Boltzmann, Sadi Carnot, Rudolf Clausius, J. Willard Gibbs, and James Clerk Maxwell.

Having made the transition from theoretical physicist to historian of physics, Martin moved to Yale University in the fall of 1967 as a professor of both physics and the history of physics. In 1974 he was named Eugene Higgins Professor, one of the top-ranking chairs for scientists at Yale, and became emeritus in 2000.

By 1988 Martin was recognized as one of the world's preeminent historians of modern physics. In that year he assumed the job of general editor of *The Collected Papers of Albert Einstein* and oversaw the publication of volumes 3 through 6, which cover the years 1909 through 1917. In that period Einstein devoted his efforts mainly to developing a general theory of relativity. Martin stepped down as editor after a decade. To date, 12 volumes of the projected 25 have been published.

Martin was elected to many societies, including the National Academy of Sciences (1977), a rare honor for a historian of science. In 2005 he was the first recipient of the Abraham Pais Prize for the History of Physics, presented by the American Physical Society and the American Institute of Physics.

Martin had a major influence on the history of physics. His many students aimed to emulate his scholarly style of focusing on fundamental conceptual issues and the intellectual framework in which they developed. Other historians of science were deeply influenced by his papers, and they, too, became his students. Physicists have been heard to say admiringly of his work that "he gets the physics." Martin's refined sense of style and his profound understanding of physics and its history were evident in his enthralling, lucid, and enlightening lectures and

writings. Those who knew him frequently, and aptly, described him as generous, gracious, and elegant.

Raymond Mountain

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