# MEMORIAL OF A. ALBERT KLEIN

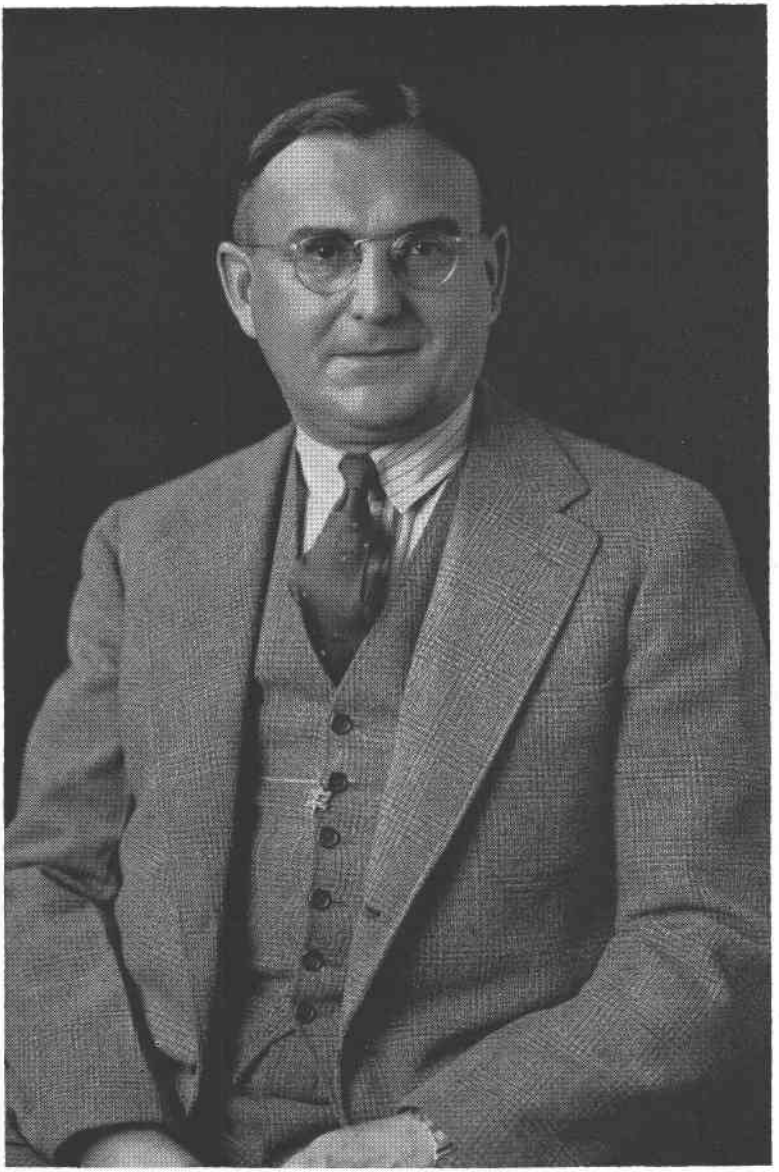
NEWMAN W. THIBAULT, *Norton Company, Worcester, Massachusetts.*

The sudden and wholly unexpected passing of A. Albert Klein on the evening of August 25, 1953, was a shock which will long be felt not only by his host of friends, but by the entire community as well. Unusually young in appearance, action and attitude, "Al" had left the laboratory in his usual good spirit, but suffered a fatal heart seizure as he was relaxing at home after the evening meal.

He was born in Syracuse, New York, May 6, 1889, oldest son of Ella (Kogan) and Samuel David Klein. He attended the local public schools, and graduated from high school in 1905, valedictorian of his class. During the next two years he was employed in the laboratory of the Semet-Solvay plant near Syracuse. Then with the encouragement and counsel of Dr. Edward H. Kraus, who had been his chemistry teacher in the Syracuse High School, he enrolled in the University of Michigan as an engineering student in the fall of 1907. Shortly afterwards, however, he transferred to Liberal Arts, specializing in mineralogy and received his B.S. degree in 1911 under Professor Kraus, who at that time was Director of the Mineralogical Laboratory. "Al" paid his own way through Michigan by assisting in the laboratories his last two years, and playing the violin in college orchestras. He was ever appreciative of the inspiration and assistance given him during his college days by Professor and Mrs. Kraus of whom he spoke with great affection on many occasions during the seventeen years of my association with him. There is no doubt that Professor Kraus contributed more to "Al's" personality than anyone else outside of his immediate family during this formative period of his life.

After graduation, he accepted the position of Assistant Physicist at the National Bureau of Standards, Washington, D. C., remaining in that capacity there and in Pittsburgh, Pennsylvania, from 1911 to 1916. During that period he applied his proficiency in optical mineralogy and physical chemistry to petrographic studies of porcelain, silica brick and Portland cement. With associates at the Bureau, he published a number of papers on these subjects as indicated in the appended bibliography. Those on Portland cement which were issued as *Technologic Papers of the Bureau of Standards* were monumental works of the day, eliciting requests for reprints nearly forty years later.

When he joined the staff of the Research Laboratories of Norton Company, Worcester, Massachusetts in 1916, he was one of the first, if



A. Albert Klein
1889–1953

not the very first, petrographer employed full-time in American industry. With this Company he spent 37 years, first as Research Engineer and for the last twelve years as Assistant Director of Research and later of Research and Development, applying mineralogical techniques, particularly petrography, toward the solution of problems in the abrasive and refractory fields.

So successful was he in these endeavors that he was constantly consulted by personnel from every segment of the Norton organization. He published but few papers, but in addition to thousands of private reports, he contributed immeasurably to the Company and the entire abrasive industry through the advice and suggestions which he freely gave, without thought of personal credit, to all who consulted him. It was particularly significant that many of the younger men sought his counsel on matters often far removed from his chosen field.

"Al's" main interest was always ceramic petrography. Through years of constant contact he had developed that sixth sense which often permitted seemingly intuitive identification of compounds almost at a glance—a marvel to those yet uninitiated. At first he was somewhat reserved in accepting $x$-ray diffraction, but quickly appreciated its value once equipment had been installed. However, he always rightly insisted that it complement rather than replace examination with petrographic or metallographic microscope. Although in direct charge of the microscopic, physical research and chemical sections of the Norton Worcester laboratories, he personally made most of the petrographic examinations to the day of his death.

"Al" and I rarely disagreed as to observation or identification, but discussion was sometimes spirited, occasionally seemingly poignant, with respect to interpretation, consequence or prospects. Through it all, however, there was never a bit of animosity; invariably he closed the matter uproariously with an anecdote appropriate to the occasion.

In partial recognition of his accomplishments he was elected to fellowship in the Mineralogical Society of America, the American Ceramic Society and the American Association for the Advancement of Science. He was a member of the American Crystallographic Association, the American Society for Testing Materials where he was chairman of one sub-committee and member of another, the Worcester Engineering Society and Sigma Xi. He was chairman of the Research Technical Sub-Committee of the Grinding Wheel Institute.

Indefatigible in pursuit of his chosen field during working hours, the remainder of his time was occupied by numerous religious, cultural and civic interests which he pursued with his wife Ann (Shapero) whom he had known since childhood, and to whom he was married on December 28, 1913.

In 1921 they pioneered the establishment of Liberal Judaism in the city of Worcester; they nurtured the foundling with such zeal and devotion that today the outward embodiment, Temple Emanuel, is one of the great synagogues of the nation. Albert Klein drafted the constitution and by-laws, was chairman of the religious committee, director of the choir and for the last thirteen years was president of the Temple. Because of his scientific training he was unusually successful in delving to the core of a problem, seeking facts with utmost fairness, thereby resolving divergent opinions into united action for the common good. In this work, likewise, he gave unstintingly of his time and financial means without thought of public acclaim, preferring to remain merely as another member of the large congregation. He was also active in Jewish cultural and charitable organizations and the establishment of a Jewish homeland in Israel.

But his outside activities were by no means limited by his faith; rather they transcended creed, color and all barriers to the brotherhood of man. He was active in such organizations as the Community Chest, Boy Scouts, Masons and Community Council. During World War II he was a member of one of the local Selective Service Boards which occupied much of his time for several years. He was particularly conscientious, and insisted that all cases be carefully investigated from every point of view in fairness both to the boy and the nation.

He was an accomplished musician, and at one time considered becoming a professional violinist. In his college days he was manager of the band. Later he was a member of local symphony orchestras, but became less active as a player in recent years, devoting most of his musical talent to affairs at the Temple.

Two children were born to Ann and Albert Klein. One, David Louis, is President of Pul-Ver-Ite, Inc., Brooklyn, New York, the other, Dr. Donald Charles, is Executive Director of the Human Relations Council, Inc., at Wellesley Hills, Massachusetts. There are five grandchildren.

The loss of "Al" Klein will long be felt by his family, his associates at Norton Company, the Grinding Wheel Institute and at Temple Emanuel, by his many friends and acquaintances in all walks of life, and by the whole community itself.

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