

## Aaron B. Lerner, MD, PhD: A Personal Remembrance

I have had the rare privilege of being associated with an extraordinary man and his remarkable family for my entire professional career. Before I discuss the seminal scientific accomplishments of Aaron B. Lerner, I want to focus on other aspects of Aaron's life. I first met Aaron officially when I was a medical intern at Yale New Haven Hospital in the spring of 1956; he had arrived at Yale in December 1955. I had requested a dermatology consult. My lack of dermatologic knowledge, including how to perform a biopsy, which he assumed had been done before he arrived on the floor, did not exactly endear me to him. He had to return with the biopsy equipment 20 minutes later and I then had a personal tutorial on punch biopsy technique. Actually, I had first heard of Aaron while I was an undergraduate at Harvard, where a classmate showed me an article by an Aaron Bunsen Lerner describing the mammalian tyrosinase system, an article that enabled my classmate to solve his research problem. I did not realize until 10 years later that Aaron Bunsen Lerner was the same Aaron B. Lerner under whom I began residency training in 1959.

Aaron's finest quality, in my opinion, was his direct, polite, concise manner of speaking to important issues. He never used more words than absolutely necessary. He spoke to inform and persuade. He listened. As you might expect, conventional small talk was not one of his major interests. Aaron pursued his objectives with persistence. He was determined; he never gave up and he almost always succeeded. What Aaron said is what he meant. Subterfuge was never present. A pledge to someone was always kept. A word in confidence was kept in confidence.

Aaron had genuine concerns for his faculty. For example, in the early 1970s, I was recruited to start a dermatology unit at Vanderbilt Medical School. After all the negotiations were completed, there ensued an unraveling of the agreements 4 months before I was to move to Nashville. I canceled the move. The day following the formal cancelation I received a call from the dermatology chair at Johns Hopkins offering me a position because he believed my job at Yale no longer existed. However, unbeknownst to me, Aaron had included me in the budget for the following year because he said he would only be certain that I was actually leaving when he "saw the moving van pulling out." He anticipated problems and acted on them.

Aaron had many interests and skills, which included expertise in woodworking, inventing several pieces of laboratory equipment (of which the Lab Jack is best known), and collecting sculpted frogs, slide rulers, Curta mechanical calculators, and all varieties of steam irons. He wrote a book comparing Einstein and Newton and amassed a huge library of books covering his diverse interests. All of these endeavors reflected his intense yearning for understanding how things worked, including people.

He loved classical music. As a young man, he attended a concert in Minneapolis in which the virtuoso pianist Artur

Schnabel was the soloist. The memory of that event and the collected recordings by Schnabel served as the gold standard by which he judged the recordings of other artists. This became a recurring story whenever the subject of music came up. His record collection was as extensive as all his other collections.

Despite the vicissitudes that Aaron faced in the past two decades, with the support of his wife, Millie, he was always upbeat. He kept abreast of the happenings in the department, the school, and the world. And he never stopped his problem solving.

Perhaps what is not known to many contemporary dermatologists, both clinicians and investigators, is why Aaron Bunsen Lerner was so extraordinary. Yet "extraordinary" does not do justice to him as a person or to his scientific and clinical accomplishments. To fully appreciate the impact that he has had on the specialty of dermatology, one must realize that before he burst onto the scene in 1946 with his seminal work on mammalian tyrosinase, investigative dermatology was a small enterprise that had begun after World War I and was carried on mostly by a handful of European and American dermatologists. The giants—Walter Shelley, Albert Kligman, Richard Stoughton, and Walter Lobitz—were just appearing on the American scene, and Stephen Rothman, who arrived from Hungary in 1938, Marion Sulzberger, and Rudolph Baer had been active for over a decade. For the most part, the research being conducted involved histochemistry, contact and humoral allergy, enzymatic assays, and physiologic studies on sweating and percutaneous absorption.

Aaron Lerner, who was born and grew up in Minneapolis, selected Bunsen for a missing middle name because his classmates often called him "Bunsen Burner" because of his intense interest in chemistry and science in high school. Aaron enjoyed an unusual educational career—all of it at the University of Minnesota. Four months before receiving his high school diploma, he began college. Nine months before being awarded his bachelor's degree, he entered graduate school. One year later, his graduate school requirements for the PhD degree, except his thesis, were completed and he entered medical school. Three years later, he completed his graduate and medical education at the age of 24. During medical school he discovered cryoglobulins—the basis for his PhD thesis—and during this time he also held six jobs to support himself. His PhD in physiological and physical chemistry equipped him with skills that led to the isolation and characterization of MSH, ACTH, and melatonin, placing him in the top tier of researchers in any biological discipline in the 1950s and 1960s. He was the only dermatologist at that time who was so well trained in state-of-the-art science and later became the only dermatologist to be elected to the National Academy of Sciences. He subsequently was also elected to the Institute of Medicine. He was nominated for a Nobel Prize in Medicine in 1969 for the discovery of MSH and in 1993 for the discovery of



Yale Department of Dermatology, June 1984. Front row, from left: Steven Cohen, Irwin Braverman, Aaron Lerner, Joseph McGuire, Sidney Klaus, Ethan Nydorf. Rear row: Kurt Stenn, Leonard Milstone, Michael Goldenhersh.

melatonin. He received the Order of the Rising Sun with Gold Rays from the Japanese government in 1999.

A serendipitous event occurred that was directly responsible for the status of dermatology today. In 1946, Lerner went to the Edgewood Arsenal in Maryland to fulfill his military obligations in the U.S. Army Medical Corps. There he met and worked closely with Thomas B. Fitzpatrick, forming an association that lasted a lifetime. It was Fitzpatrick who convinced Lerner to go into dermatology instead of an academic career in biochemistry, and it was Lerner who interested Fitzpatrick in concentrating his efforts on pigmentation. In the early days of the growth of dermatologic research, Lerner and Fitzpatrick, as well as Harvey Blank, carried out many site visits to evaluate proposals for NIH research and dermatology training grants. Whenever they sensed that some money might be made available from the medical school or the department of medicine, they asked for a new proposal that included some institutional support. They were almost always successful. Together Aaron and Joseph McGuire were the driving force in arranging for the meetings of the Society of Investigative Dermatology to be held in association with the Tri-Society meetings in the 1960s and 1970s. At Yale they both were instrumental in organizing a program that laid the groundwork for the eventual MD-PhD program sponsored by the NIH. The first participant was D. Martin Carter, who entered the program as the first Howard Hughes Medical Institute Fellow.

After completing his Army service, Aaron spent a post-doctoral year at Western Reserve Medical School, where he worked out the metabolism of homogentisic acid, paving the way for later investigators to understand the mechanism and cause of alkaptonuria. As a dermatology resident at the University of Michigan he held the faculty title of Assistant Professor of Dermatology while establishing a research laboratory in the department. On completion of his residency he went to the University of Oregon as an associate professor of dermatology with tenure. He was profoundly influenced at the University of Michigan by two mentors: Udo Wile,

the first chairman, and Arthur Curtis, the current chairman, both of whom had considerable training in internal medicine before obtaining their dermatology training. From the casual comments made by Aaron over the years, it is clear that these two men were responsible for his honed clinical skills and keen interest in the relationship between internal medicine and the skin, as well as his enthusiasm for teaching.

In 1955, Aaron was recruited to Yale by Paul Beeson, Chairman of Medicine, chiefly because of his research. His curriculum vitae gave no hint that Aaron was an astute diagnostician. Within a short time after arrival he simultaneously set up a laboratory, reached out to the community dermatologists in the greater New Haven area to assist in the teaching of residents and students, and began seeing patients himself. He set up the Michigan model of Grand Rounds, which we still use today, in which residents and faculty examine patients without taking a history in order to develop differential diagnoses based on morphology alone. It was clear from the beginning that Aaron considered patient care and teaching as important as research. For more than 20 years, once a week after Grand Rounds, the entire clinical faculty made rounds together on the inpatient services; we knew each other's patients and they knew us; the patients knew the residents and the residents knew the patients. We were a repertory company of dermatologists who could fill one another's shoes when necessary. The core group included Aaron Lerner, Marguerite Lerner, Marie-Louise Johnson, Joseph McGuire, Sidney Klaus, D. Martin Carter, Steven Cohen, Leonard Milstone, and me. Marguerite Lerner went over all the letters to referring physicians and all of our manuscripts to ensure that they were concise and clear and to assist the residents in communicating clearly. Aaron later hired an editorial assistant to perform the same functions as the department became larger. The medical students took a 6-week rotation in which they received lectures, were supervised in the clinic or taken on ward rounds by faculty or attendings, and were given a practical examination using live patients at the end of their rotation. A notable chairman or professor from another dermatology department would discuss the cases with the students.

Aaron's influence was immense. Of 63 Yale medical students who elected dermatology as a career during his 30 years as chairman, 10 became chairmen of departments and 18 academicians; of 60 residents, excluding Yale students, 11 became chairmen and 13 academicians; and of 31 fellows from the United States, Japan, and Sweden, 9 became chairmen.

On a personal level, it is gratifying to remember that Aaron's family and my family always maintained a closeness and a concern for one another, along with a shared pride in our families.

These fun and educationally rich years would eventually come to an end as a result of the profound changes in medicine over the past 20 years. As I was reminiscing about Aaron, these lyrics suddenly came to mind: "Don't let it be forgot, that once there was a spot, for one brief shining moment that was known as 'Lernerlot'."

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