

*Maxwell Finland***Maxwell Finland***March 15, 1902 — October 25, 1987*

By Frederick C. Robbins

DR. FINLAND, KNOWN TO most people as Max, was a giant in the field of infectious diseases, although physically he was far from a giant, his height being not much over 5 feet. He was a prodigious worker and his bibliography included more than 800 scientific articles and a large number of chapters in books, meeting proceedings, and various reports. Some of his studies on the natural history and pathogenesis of infectious diseases were classics, such as his series of reports on pneumonia. He was a pioneer in the assessment of antibiotics, including their use and misuse, in recognizing the significance of antibiotic resistance, and in pointing out the importance of hospital infections and their control. He was an exemplar of the ideal academic physician, who, in addition to conducting research, was a teacher and a superb physician.

This paragon was born in a small town in the Ukraine in 1902. His forebears included a great-grandfather who was the grand rabbi of Krakow and a grandfather who was cantor in Zashkov. In spite of this impressive background he did not seem to have much involvement in formal religion. At the age of four he came with his family to live in Boston. Like so many immigrants, Max's family valued education. He graduated from Boston English High, ranked second in his class, and was accepted at Harvard College with a scholarship. He thrived in the exciting environment of Harvard of that day. He had such stimulating professors at James Bryant Conant (chemistry and later president), Louis Fieser (chemistry), Richard Cabot (social ethics), Zachariah Chaffee C. (constitutional law), and Winthrop John Vanleuven Osterhout (botany). Max and some other students established a club for Hebrew speakers where they heard reports from Israel. He also taught in a Hebrew school, for which he received some pay. Indeed, by one means or another he largely supported himself throughout his education.

In 1922 Max entered Harvard Medical School. There he came under the influence of Hans Zinsser, chairman of the Department of Microbiology, and Milton Rosenau, chairman of preventive medicine and hygiene. Rosenau was an impressive figure and Zinsser was an exceptionally dynamic and charismatic individual. James Howard Means, chief of medicine at the Massachusetts General Hospital was also influential. After graduation, Max became an intern on the 2nd Medical Service at the Boston City Hospital (BCH). At that time the situation at BCH was almost ideal for someone interested in academic medicine. The Harvard Medical Unit included two medical wards (the 2nd and 4th) and the Thorndike Memorial Laboratory. In addition, there was the excellent Pathology Unit, headed by Mallory, and the South Department, which was the Contagious Disease Hospital. In addition to Harvard, both Tufts and Boston Universities conducted teaching units at the hospital. The Harvard Unit must have been a heady environment for a young man. The Thorndike Laboratory and the clinical services were essentially one unit and extensive clinical research was being conducted there. Max apparently had planned to go into practice, but as it turned out he found the environment at BCH so highly compatible that he spent almost his entire career there as a member of its Harvard Unit.

After his internship Max accepted the position of pneumonia resident at BCH, but he also worked in Rosenau's department, where anti-pneumococcal serum was being produced. In 1929 Finland was asked by Dr. Nye to join his laboratory at the Thorndike. Thus began one of the most remarkable careers in the field of infectious diseases.

The first studies conducted by Max and his associates dealt with pneumonia. At that time the only treatment for pneumococcal pneumonia was administration of type-specific antiserum. The process of treating patients was cumbersome, to say the least. A nasopharyngeal swab was taken and placed in a tube containing culture medium. After a few hours of incubation when enough bacteria had proliferated, material from the culture was exposed to type-specific antisera. If there was a match between the antiserum and the chemical composition of the polysaccharide on the surface of the bacterium, the capsule would swell and it could be seen with an ordinary light microscope (known as the Quellung reaction). If Quellung occurred, the corresponding antiserum (horse or rabbit) was administered to the patient. The patients usually survived the infection, but they invariably suffered from serum sickness, which could be most unpleasant. Finland and his fellows did a series of studies on the treatment of pneumococcal infection conducted with meticulous care, a hallmark of Finland's research throughout. When sulfonamides became available the infectious disease group at the Thorndike was among the first to conduct systematic clinical studies with the backup provided by the Thorndike laboratories.

With the advent of penicillin, again the Finland group did many of the fundamental studies of the antibacterial spectrum, pharmacokinetics, and to some extent mechanism of action. This was repeated as the various broad-spectrum antibiotics were developed. The studies involved careful clinical observations integrated with laboratory investigations and were examples of what the BCH unit made possible.

Finland early recognized that bacteria were developing resistance to the antibiotics in general use. He realized the implications of this and that the indiscriminate use of antibiotics in the hospital and in the community was important in promoting the development of the resistance. He recommended the reservation of certain antibiotics for use only in special circumstances in order to preserve their availability for emergencies. He also was one of the first to sound the alarm about the frequency and importance of infections acquired in the hospital.

Although the contributions just mentioned were important, they by no means reflect the scope of his interests. In fact, he and his collaborators (mainly fellows) explored almost every aspect of infectious diseases that one could mention. The infectious diseases division of Thorndike, headed by Finland for most of its existence, was tremendously productive. As already mentioned, Finland's personal bibliography includes more than 800 scientific papers and an additional 20 to 30 chapters of books and contributions to published proceedings of meetings and symposia.

Finland had a great attraction for young physicians who came to work with him. He took a personal interest in each one and was careful to see that they were recognized for their contributions. Characteristic of him is the history he wrote of the Division of Infectious Diseases. The description of each project begins by identifying the fellow or fellows involved. It is not clear just how many fellows passed through his division, but it probably exceeded 100. The author of this memoir recognized 27 as leaders in the field throughout this country and abroad. It includes such names as Wesley Spink, Lowell Rantz, John Dingle, Charles Rammelkamp, George Gee Jackson, Lewis Thomas, Calvin Kunin, Theodore Eickhoff, and Edward Kass, to name a few.

Finland spent most of his career at BCH in the Harvard Medical Unit. His home base was the Thorndike Memorial Laboratory, a key element in the Harvard Unit. Before retirement in 1968 he had become its director and the director of the Harvard Unit. The Thorndike was an extraordinary organization. It was headed by such luminaries as Francis Peabody, George Minot, William Castle, and Max Finland. On the staff were such well-known figures as Chester Keefer (later to move to Boston University), Soma Weiss, Charles Davidson, Joseph Wearn, and Thomas Hale Ham. Although the Thorndike was not very impressive physically, this remarkable group of people was immensely productive, and it influenced a large body of young men and women who collectively had a profound impact on medical care, research, and teaching for several generations. The famous statement by Francis Peabody in his paper "The Care of the Patient," "The secret of the care of the patient is in caring for the patient," governed the behavior of the Harvard Unit. Although the close relationship between the Thorndike and the Harvard clinical services was exploited to the benefit of clinical investigation, the patients were always treated with respect, even though they were almost exclusively from the poorer segment of society. When I was a fourth-year Harvard student on the Harvard service, George Minot was our visitant. Of course, I regarded him with awe. However, I was most impressed when on rounds we were examining a woman who was in for pneumonia or some acute illness. She worked as a waitress, was single, and had many personal problems. Minot sat down by her bedside and spent 10 to 15 minutes discussing her personal difficulties with evident concern for this aspect of her life. To him she was not just a case of pneumonia. This made quite an impact on the students and seemed to exemplify Dr. Peabody's dictum in action.

In 1973 the Thorndike Memorial Laboratory severed its relationship with BCH and moved to the Beth Israel Hospital, a major Harvard affiliate located about one block from the Basic Sciences quadrangle. Indeed, Harvard severed all relationships with BCH when the governing body of BCH decided to affiliate with a single medical school and chose Boston University. This decision was the result of a number of factors, including the shrinking patient population at the hospital and the close proximity of the Boston University Hospital to BCH. In any case, it ended a 50-year relationship between Harvard and the hospital, which had been remarkably productive and one in which Max Finland had played such a key role.

As mentioned before, Max was a small man physically, but this never seemed to affect his behavior. From the time Max entered Harvard College he was associated with Harvard and its medical school until his death in 1987. He was loyal to the institution and displayed this in many ways including sizeable contributions from his personal resources. He was also influential in stimulating others to contribute, and it is estimated that he was responsible for contributions of approximately \$6 million. In recognition of his many contributions to Harvard and to the health of the public, the Max Finland professorship in clinical pharmacology was funded at Harvard Medical School. The other institutions that commanded his loyalty were the BCH, the Harvard Medical Unit, and in particular the Thorndike Laboratory.

Max never married, but he had a devoted extended family in his many friends and the large number of young people for whom he served as mentor, teacher, and friend. He was a prodigious worker, but he always had time to discuss a problem with colleagues, including fellows or even house officers and students. He enjoyed the symphony, usually taking along a friend or fellow. He also entertained at the Athens Restaurant or a favorite Chinese restaurant (Ye Hong Guey's). My wife and I had the

pleasure of joining him a couple of times at the Chinese restaurant, and they were provincial occasions, with Max the perfect host.

In 1968 Max retired and became the Minot professor emeritus and shortly thereafter he moved his office to the Channing Laboratory headed by Edward Kass. He continued to publish and to supervise fellows. He was also given an appointment at the Veterans Administration Hospital. Thus, Max continued to display one of his main attributes: a remarkable capacity for hard work. One of the prodigious tasks he undertook in his retirement was the editing of a three-volume history of the Harvard Medical Unit at Boston City Hospital. The history includes brief statements by many of the young physicians who spent some time in the unit and who represent a large proportion of the important contributors to academic medicine for over half a century.

Finland received many honors. He was a member of the National Academy of Sciences and recipient of the Kober Medal of the Association of American Physicians, the Bristol Award of the Infectious Diseases Society of America, the Chapin Award of the City of Providence, the Philips Award of the American College of Physicians, the Oscar B. Hunter Award of the American Society of Clinical Pharmacology and Therapeutics, and the Sheen Award of the American Medical Association. He received honorary degrees from Western Reserve and Thomas Jefferson Universities. In 1982 Finland was awarded a doctor of science (honoris causa) degree from Harvard University, something Harvard does not often do for its own faculty. The citation reads: "The University hails a distinguished and loyal son, who for sixty years as physician, teacher, and scholar has given wisdom, energy, and substance to the advancement of clinical medicine."

As a fitting end to this memoir I quote from the presentation of Finland's good friend and associate Charles Davidson when he presented the Kober Medal: "We honor today a man who, with a friendly smile and a quiet and modest manner, has achieved great distinction not only because of his extraordinary contributions to American medicine but also because of his beneficial influence on so many patients, students, colleagues, and friends."

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