

T. Lyle Hazlett: His Role in Industrial Medicine, 1920-50

D. John Lauer, M.D.

Rather than discoursing on Bernardo Ramazzini in this Ramazzini Lecture, I wish to talk about Dr. T. Lyle Hazlett, one of the true pioneers of occupational medicine in the United States, and his contributions to the field during the years of 1920 and 1950. Among his contemporaries were others whose careers demonstrate equally well the trends in occupational medicine and hygiene during this period. I refer to such eminent men as Sawyer of Rochester, Lanza and Greenberg of New York, Selby and McCord of Detroit, Geier and Kehoe of Cincinnati, Legge of California, Lynch of Boston, Gehman of Wilmington, Cummings of Denver, and Sayers of Washington, each of whom deserves to be chronicled as a pioneer. I have chosen Dr. Hazlett because of his influence upon my early career, and upon the careers of others.

The following quotation is the opening sentence of an article announcing a fellowship in Industrial Medicine which appeared in the August, 1944, issue of a journal known as *Industrial Medicine*: "The development of industrial medicine in recent years has changed an ill-defined field of medical practice into one requiring a definite body of knowledge and of functional skills." Dr. Hazlett, its author, was then Professor of Industrial Hygiene at the Medical School of the University of Pittsburgh and Medical Director of Westinghouse Electric and Manufacturing Company. In announcing this graduate course in Industrial Medicine, probably the first full-time organized study series, the foundation for a dynamic and far-reaching medical specialty for the future was laid.

Early Years

Dr. Hazlett was born April 19, 1885 in Butler County in western Pennsylvania, the son of an immigrant Presbyterian minister. His mother, Margaret Ann Lyle, died shortly after his birth, and until his father remarried nine years later, he was reared by a niece of the Reverend Hazlett. Little is known of his youth beyond the fact that he aspired to become an engineer and pursued a course in civil engineering at Grove City College and at West

Virginia Wesleyan College. After completing his studies, he took a job as assistant engineer on a railroad construction project in West Virginia, where a tunnel he helped build is still in use.

Late in 1904 he moved to Pittsburgh to become a salesman for the wholesale hardware business owned by his mother's family. Between sales trips through Ohio, Pennsylvania, and West Virginia he formed a close association with the family physician, accompanying him on house calls in a horse and buggy. The medical profession appealed to him so much that in 1908 he dropped his job as salesman and entered medical school at the University of Pittsburgh.

Following his graduation in 1912, Dr. Hazlett interned for one year and spent a second year as resident staff physician at Pittsburgh's South Side Hospital. He had been in private general practice only a few months when World War I broke upon Europe in August 1914. Imbued with a spirit of adventure, he joined the American Red Cross and was enroute to Russia by late autumn. He spent 1915 at a military hospital in Kiev. In 1916 he was detailed to head a hospital for Russian troops in northern Persia. His diary reveals that the work was tedious and the glamour, minimal. The hospitals were primitive; the staff and equipment, inadequate. The case load of wounded soldiers was heavy and there were frequent outbreaks of typhus. In April 1916 Dr. Hazlett suffered an acute attack of typhus. Late in that year he returned to the United States by way of Siberia, China, and Japan.

There is a romantic touch to Dr. Hazlett's Russian experiences. Sometime during 1915, a small group of American Red Cross nurses reported for duty at the Kiev Hospital. Although he allowed in his diary that none were very good looking, one of these young ladies caught his fancy. She helped nurse him through his typhus illness and one may conjecture that he followed her around the world, for she, traveling with the nurses, returned home eastward through Siberia, China and Japan three months before he did. They were subsequently married.

When the United States declared war on Germany in April 1917, Dr. Hazlett, as a member of the Pennsylvania National Guard, organized a field medical unit which was sent to Camp Hancock, Georgia, for training. The division embarked for England in May of 1918 and for the bat-

From International Telephone & Telegraph Corporation, 320 Park Ave., New York, NY 10022

Presented as the Ramazzini Society Oration, Hot Springs, Va., October 18, 1978.

fields of France in June. Dr. Hazlett served as commanding officer of Field Hospital 112, the first American hospital to serve at Chateau Thierry, until the division returned home in June 1919 and he was mustered out of the Army as a Lieutenant Colonel, Medical Corps.

In the same month he accepted an appointment as Medical Director of the Pennsylvania State Sanatorium for Tuberculosis at Mt. Alto. He soon became aware that a large number of patients came to the hospital from industry, an observation that set into motion his overriding determination to contribute to the control of this disease which had been a scourge for centuries. During the year and a half he served at Mt. Alto he introduced the use of cottages for the care and isolation of patients, stimulated the interest of several of the larger industrial concerns of western Pennsylvania in supporting cottages for their own afflicted employees, and raised the morale of both staff and patients. He also attracted the attention of Westinghouse Electric Company officials, who invited him to direct the company's medical activities.

His appointment as Medical Director of Westinghouse on December 1, 1920, marked the beginning of his direct involvement in the health of the worker and in industrial medicine. For the next 30 years his dedication, his imagination, his organizational abilities, and his persuasiveness were devoted to improving the health environment of the worker. During that period Westinghouse grew from 36,000 employees to 106,000 and its medical department expanded from a handful of physicians and nurses to 12 full-time physicians, 22 part-time physicians, 91 registered nurses, three industrial hygiene engineers, two chemists, three technicians and a corps of clerks and stenographers.

Contribution to the Treatment of Tuberculosis

Treatment of tuberculosis brought Dr. Hazlett into industrial medicine and continued to engage his energies. He wrote frequently on the subject. "Tuberculosis Prevention Work in a Large Plant," published in the *Journal of Outdoor Life* in 1925,² seems to have been the first of many articles published in both lay and medical journals.^{3,4} In essence, he recommended early detection, prompt diagnosis through chest x-ray and laboratory tests, and treatment in a sanatorium or at home. Rehabilitation included a return to selected work and systematic follow-up examinations. Today all of these measures would seem only simple and logical, but in the 1920's and 1930's the stigma of the disease severely beclouded simple logic.

Dr. Hazlett regarded education as an important component of tuberculosis control. In presenting his philosophy and program for the control of the disease to the New York Tuberculosis Association in 1944, he wrote, "No plan for tuberculosis control is complete unless education on the subject is continuous and has been made a large part of the program."⁵ He was responsible in 1943 for the publication of a series of eight leaflets on the following topics:⁶

1. What Is Tuberculosis?
2. War and Tuberculosis
3. Do I Have Tuberculosis?
4. How the Doctor Diagnoses Tuberculosis
5. Infected Sputum Spreads Tuberculosis
6. Hygienic Living Protects from Tuberculosis

7. Good Nutrition Helps Prevent Tuberculosis

8. The Modern Treatment of Tuberculosis

Dr. Hazlett's concern for tuberculosis prevention led to broader concepts of preventive medicine.⁴ He advocated a careful medical examination, including chest x-ray, for every employee at the time of employment. Although the main purpose of the examination was to detect tuberculosis, it provided an opportunity to inventory the employee's total health. Dr. Hazlett recognized that the information could be used not only as an aid to proper job placement, but also to prevent or correct other illnesses and disabilities and to educate the worker about health.

Contribution to the Field of Industrial Hygiene

As early as 1925 Dr. Hazlett saw the need for an engineer associated with the medical department. Beginning in 1926 he annually submitted a budget request for an engineer, citing the need to make the total environment of the worker a prime factor in health conservation, the need to measure the environment in order to determine the magnitude of health hazards, and the need to recommend measures to control such hazards. Each year this budget request was disallowed until, in 1933, a spate of compensation claims for silicosis burst upon all of industry, including Westinghouse, and his request for an engineer was honored hastily. Thus began one of the earliest programs of industrial hygiene equipped with a laboratory in U.S. industry. It was a fruitful collaboration of physician and engineer in what Dr. Hazlett termed "medical-engineering to protect the health of the worker."⁷ Edgar Barnes was the engineer and his first task was to make dust studies in the company foundries. By 1938 the demand for hygiene services was such that another engineer was authorized; by 1941 still further expansion of professional personnel and laboratory space and equipment were necessary.

From the beginning, Mr. William Yant, industrial hygiene and research engineer at the Bureau of Mines and later at the Mine Safety Appliance Company, was Dr. Hazlett's consultant on matters pertaining to programs, personnel and training in the fields of hygiene and safety. When Dr. Hazlett was given direct responsibility for the company safety program in 1937, in characteristic fashion he sought an energetic professional engineer to head this section and gave him full support as he modernized the company's safety activities.

Throughout his career in industry, Dr. Hazlett maintained that there was a connection between health and accident prevention and that the physician, before he could determine a person's fitness for a job, needed to be familiar with the work environment and the physical and mental demands of that job. He recognized that he needed to collaborate with the safety engineer and the hygienist, when and where such personnel existed. These matters seem self-evident today.

Sometime during the early 1930's, the company's Relief and Benefits Association was transferred to the medical department. Administering the "Relief," as it was called, gave Dr. Hazlett new perspectives on the worker's needs in sickness and health and an opportunity to research the magnitude of illness on the economic and social life of the worker and on the industry. In a paper published in

T. Lyle Hazlett: His Role in Industrial Medicine/Lauer

1941 he reported that "a review of 400 cases on a disability roll showed 10.5% of cases were tuberculosis. These represent an accumulation over a 10-year period in a plant with an average population of 15,000 workers."¹

Role in Industrial Medical Education

Dr. Hazlett devoted much of his energy to the promotion of education. He served on several hospital staffs. "As early as 1922," he wrote, "the dean of Pittsburgh Medical School supported the need to emphasize the role of industrial medical problems in our medical school because of our highly industrialized community."² From that time until 1936, industrial medical problems were the subject of lectures given by the Department of Preventive Medicine. In 1936 a Department of Industrial Hygiene was established and Dr. Hazlett was appointed Professor of Industrial Hygiene and Head of the Department. The objective of the department was "to provide undergraduate and graduate instruction in industrial medical problems, and to establish facilities for research on specific industrial problems as they pertain to the health and well-being of workers."³ Initially, undergraduate instruction consisted of an eleven-hour course of lectures in the senior year. Dr. Hazlett wrote that these lectures attempted to correlate the work of students in chemistry, physiology, toxicology, and preventive medicine with application in industry. An analytical laboratory was established, and hospital facilities were available for the investigation of occupational disease.⁴

In 1944, Dr. Hazlett edited *Introduction to Industrial Medicine*, a compilation of the lectures given to the medical students by himself and ten other persons. He contributed background material and lectures on dust, diseases, and silicosis.

It is interesting to note that Dr. Hazlett convinced the local county medical society to establish a Committee of Industrial Hygiene. In 1938 this committee and his department at the medical school co-sponsored an intensive one-week course in industrial medicine for practicing physicians of industry. Thirty-eight men registered and attended.

In a report to the AMA Conference on Medical Education in 1939, Dr. Hazlett outlined the following duties and responsibilities of the physician in industry:⁵

1. Safeguarding the health of industrial workers in their working environment. Included are attention to air hygiene, lighting, noise, fatigue syndrome, and sanitation; appropriate placement of workers from both a mental and a physical standpoint; periodic examination, especially of workers exposed to known health hazards; and recommendations for the elimination of any unhealthful practices.

2. Medical care of occupational injuries and diseases, and emergency medical care of on-the-job illnesses.

3. Clinical research. The constant development of new processes, materials, and combinations and the effect of these on the human body present the graduate in medicine his greatest opportunity in the study of occupational environment; careful clinical observations can provide knowledge of the effects of a constant daily dosage of a known material over a period of years.

4. Health education. No group is more easily accessible or more desirous of knowing health facts than those

employed by industry.

During World War II Dr. Hazlett was able to fulfill a major ambition, the provision of more health information in his company. He appointed a physician to monitor the nutrition program in the factories and to disseminate information by lectures, demonstrations and pamphlets. A continuing flow of materials on a wide range of health-related subjects emanated from the medical department.

Contribution to Professional Organizations

Dr. Hazlett first became active in organized industrial medical work with a committee appointment in 1926. Many subsequent appointments followed. He worked with colleagues from all parts of the country in the American Association of Industrial Physicians and Surgeons (AAIPS), the forerunner of our present American Occupational Medical Association (AOMA), and was particularly active on its education committee. He seemed to reach the peak of his career when, at its annual convention held in 1941 in Pittsburgh, the AAIPS named him its president.⁶ During World War II he represented the association on a liaison committee with the USPHS and other organizations. He participated vigorously in efforts to achieve recognition of industrial medicine as a specialty.

Other organizations among the many in which Dr. Hazlett was active are the National Safety Council, the American College of Physicians, the American Public Health Association, medical societies, and the Pittsburgh Medical Directors Club, which he organized in 1943. In 1948 the AAIPS presented him with the Knudsen Award, and, in 1958, he collaborated with William Hummel on a history of industrial medicine in western Pennsylvania, 1850-1950.⁷

Stand on Social Issues

As one would expect of a man from his background, Dr. Hazlett spoke out on social issues in his lectures and papers. For example, in 1930 he stated: "Industry should be charged with proper living wage, proper working hours, and proper work surroundings, and also with taking an interest in all community health problems."⁸

In a paper presented before the Southern Medical Society in 1940, he spoke of the problem of fatigue and its relation to accident prevention. He suggested that the time had come to initiate rest periods during the work shift and that the physician in industry could contribute to the full value of such rest intervals by making observations and studies.⁹

Conclusions

The temptation is great to compare the industrial health issues of the period 1920-50 with those which confront us today. Direct comparisons would not be valid. We can, however, look at the earlier period for guidance. Tuberculosis and dust diseases, especially silicosis, exploded into public concerns much like the environmental cancer issues of today. Tuberculosis has been conquered but silica problems are still with us.

I expect some of the same anxieties beclouded the discussions then as now. One wonders if the same acrimoniousness prevailed. I expect it did, although at a level several magnitudes less, because a much smaller

segment of society was involved than is participating today in our national concern with the diseases of cancer.

It is noteworthy that in our medical schools today the interest in occupational medicine as an organized curriculum is not much greater than it was in the 1930's, on the part of either students or faculty at the undergraduate level. Yet, the growing importance of the field is recognized by organized labor, by government, and increasingly by management.

The opportunities for careers in occupational medicine, hygiene, and toxicology are infinitely more abundant now. In the earlier period they were limited to a few jobs in industry, a few in universities, and a few in state and national government health and labor departments. There were none in labor organizations.

The ever-increasing interest of the public in the environment, especially as it affects health in the workplace, brings with it opportunities for vivid news stories, for newspaper and television interviews, and for appearances before congressional committees and executive agencies holding public hearings. Such appearances can be heady experiences for the occupational physician and hygienist, among others, and showmanship, grantsmanship, and the like may supersede more traditional talents. Inaccuracies, superficialities and challenges to one another's integrity in the absence of data can easily follow. We seem to be badgered into advocacy rather than measured discussion. Emotions flare, attitudes harden and positions become fixed. Maybe here we might turn to our predecessors. I expect that in such situations Dr. Hazlett would have quoted Holy Writ: "And why beholdest thou the mote that is

in thy brother's eye, but considerest not the beam that is in thine own eye?"

Dr. Hazlett's words seem as true today as when he wrote them in 1944: "The development of industrial medicine in recent years has changed an ill-defined field of medical practice into one requiring a definite body of knowledge and of functional skills."¹³

I wish to acknowledge the help and encouragement I received from Dr. Hazlett's son and namesake, Theodore L. Hazlett, Jr. Without his help, and that of many others, it would have been too difficult to put this piece together. Let me name a few with my gratitude: Edgar Barnes, Wilbur Speiker, Daniel Brown, Frank Gatto, Mary O'Rourke, W. Leigh Cook, Campbell Moses.

References

1. Sellick H and Whittaker AH: Occupational Health in America. Detroit: Wayne University Press, 1962.
2. Hazlett TL: Tuberculosis prevention work in a large plant. *J. Outdoor Life*, 1925.
3. Hazlett TL: Placement of the worker. *Ind Med* 10:535-536, 1941.
4. Hazlett TL: Value of good physical and mental health in industry. *Pa Health* 8:12-16, 1930.
5. Hazlett TL: Introduction to Industrial Medicine. Pittsburgh: University of Pittsburgh Press, 1944.
6. Hazlett TL: Tuberculosis in industry. *Ind Med* 13:239-241, 1944.
7. Hazlett TL: Industrial medical problems in war production. *Ann Intern Med* 20:371-375, 1944.
8. Hazlett TL: The value of industrial hygiene. *Am J Public Health* 37:421-425, 1947.
9. Hazlett TL: Fundamentals of industrial hygiene. Proceedings of the AMA Annual Congress of Medical Education and Licensure, Chicago, Feb. 13 & 14, 1939.
10. Hazlett TL: Industrial health in relation to undergraduate and graduate medical education. *Pa Med J* April 1941.

Perception of Stress

People who suffer from stress have a subjective impression that their lives are controlled by outside forces and they can't do anything about them. People who thrive on stress have the opposite, objective feeling that "I can manage; I can even manipulate; I can determine my own destiny. I am not dependent on outside control or outside decisions."

— Dr. Peter Brocher, Menninger Foundation, Topeka, as quoted in "Stress May Not be Hazardous to Your Health" by Bernie Ward, in *Sky*, Delta Airlines, March, 1979.