OBITUARY

ARTHUR DEHON LITTLE

"DEDICATED to Industrial Progress." These words, carved on the west wall of the vestibule of the A. D. Little Laboratories in Cambridge, Massachusetts, are the key to the spirit of the research institution founded in 1886 by Dr. Arthur D. Little in conjunction with Roger B. Griffin. No less is this inscription an expression of one of the chief motives of the life of its author. Dr. Little continuously bore witness to his conviction that research was the price of progress in industry. "To those with vision," he claimed, "science is bringing countless new opportunities for constructive and profitable effort, while it is likely to take whatever they may have from those who will not see." He carried this theme into his contacts with the financial world, where often final decisions are made affecting industrial policy. "While every chemist will admit he needs a banker," he wrote, "the fact that every banker needs a chemist is not yet recognized in financial circles."

Dr. Little's conception of the value of science, chemistry in particular, to industry was complemented by his resolute stand for the dignity of the profession of chemistry. With him it was almost an axiom that the chemist was worthy of recognition by men of affairs. In this connection, Dr. Little had in mind chemists with something more than technical knowledge. He meant for scientists, generally, to have an outlook on life which embraced the widest possible acquaintance with the achievements of mankind. In other words, the scientist was to be a member, in good standing, of the "fifth estate," characterized by him as "composed of those having the simplicity to wonder, the ability to question, the power to generalize, the capacity to apply, in short, the company of thinkers, workers, expounders and practitioners upon which the world is absolutely dependent for the preservation and advancement of that organized knowledge which we call science."

A native of Massachusetts, Arthur D. Little was born in Boston on December 15, 1863, the son of Thomas J. and Amelia Hixon Little. His early education was obtained, in part, in the public schools of Portland, Maine. He enjoyed telling how, for ten cents, in that city one afternoon in 1875 or 1876 he witnessed the chemical demonstrations of a traveler, and how the interest aroused by the experiments stirred in him the determination to become a chemist. He began experiments in his grammar school days in a home laboratory, and throughout the rest of his life he never lost contact with the facilities of a laboratory. The more formal part of his education was received at the Massachusetts Institute of Technology, where he was a member of the class of 1885. He never pursued graduate studies, but he held several honorary degrees. In 1918 the University of Pittsburgh conferred on him the doctorate in chemistry. The University of Manchester, England, granted him the honorary doctorate of science in 1929, as did Tufts College in 1930 and Columbia in 1931.

After working a year as a chemist to the Richmond Paper Company at Rumford, Rhode Island, his life's work began in 1886, when, in partnership with Roger B. Griffin, he founded a scientific research organization to aid clients. This was the first such institution in the United States. The new firm carried on a general commercial practise of chemistry until Mr. Griffin died in 1893 as the result of injuries received in the laboratory. The early years of the work fell in a period when industry was not convinced of the value of investigations, and Dr. Little often found it necessary to stand his ground with the zeal of the pioneer. During that time valuable patents were taken out on processes for the manufacture of chrome-tanned leather, potassium chlorate and cellulose acetate.

In 1900 a new partnership was formed with Dr. Willis R. Whitney, which continued until the incorporation of the firm in 1909. The present dignified building with its well-equipped laboratories and library was erected on the banks of the Charles River in Cambridge in 1917. Out of the laboratories has come a long list of industrial developments. Among the contributions are processes for smoke filters, for newsprint from southern woods, for the recovery of naval stores, for the utilization of waste products from lumbering, for the production of non-inflammable movie films, artificial silk, airplane dopes, automobile finishes, stereotype mats, and other things.

Through much of his mature life, Dr. Little held prominent positions in his scientific societies. In 1899 he became the second chairman of the Northeastern Section of the American Chemical Society, following Professor Arthur A. Noyes in that position. The American Chemical Society honored him as its president in 1912 and in 1913. In 1919, he was president of the American Institute of Chemical Engineers and in 1928–1929 of the London Society of Chemical Industry. In addition to strictly professional societies, Dr. Little was a member of the American Academy of Arts and Sciences, of the Franklin Institute of Philadelphia and of the Royal Society of Arts.

Dr. Little always found time to continue associations with the Massachusetts Institute of Technology. He was president of the Alumni Association in 1921–1922 and in 1923 he was made a life member of the corporation of the institute, after serving as a term-mem-

ber from 1912 to 1923. Probably his most outstanding achievement for education was his conception and initiation of the School of Chemical Engineering Practice of the Massachusetts Institute of Technology. According to the plan of this course, a carefully selected group of graduate students spends six months at three field stations, located at Bangor, Maine; Buffalo, New York; and Boston, Massachusetts. Six different manufacturing companies open their plants for the instruction of students who devote their attention chiefly to the application of theory to practice and to quantitative measurement of the efficiency of the so-called "Unit-operations" carried on at these plants. Dr. Little's long association with the Institute culminated in the provisions of his will, which directed that his controlling interest in Arthur D. Little, Inc., be held in trust for the benefit of the Massachusetts Institute of Technology. Thus the company which absorbed his chief efforts for almost half a century will be continued, in part by the cooperation of his alma mater.

A portrait of Dr. Little is not completed by an account of his business and scientific activities. He had the pleasure of being a member of the Century Club and the Chemists' Club of New York; the Country Club of Brookline, Massachusetts; the Examiner, St. Botolph and Union Clubs of Boston. His interest in literature was recognized by membership in the Odd Volumes Club of Boston and in the Thursday Evening Club. Through the pages of "The Handwriting on the Wall," his convictions on the value of scientific research to industry reached a wide public. The early volume with Roger B. Griffin on "The Chemistry of Paper Making" is known to all who are interested in the manufacture of paper. In 1931 he was awarded the Perkin Medal as "The American Chemist who has most distinguished himself for his services to applied chemistry."

During the world war Dr. Little was a consultant to the Chemical Warfare Service of the Signal Corps. He was in charge of airplane dopes, acetone production, etc., and he invented the "sucked-on" gas filter which was adopted as part of the standard equipment of the United States Army. Other public services included the chairmanship of the Advisory Committee of the National Exposition of Chemical Industries, membership in the Division of Engineering and Industrial Research of the National Research Council. He served, also, as a member of the Advisory Board of the Superpower Survey of the U. S. Geological Survey.

In the midst of heavy demands on his time and energies, Dr. Little had the ability to find room for life's amenities. Younger chemists found him ready to discuss their problems with them. He made them feel that their difficulties were his. He took pains to become personally acquainted with all members of the research staff. The pleasant atmosphere of the lunch room, on the second floor of the laboratory building, often became the background for informal conversations. The museum, directly connected with Dr. Little's office, contains exhibits of the earliest and latest work of the laboratories. Here one can see an expression of Dr. Little's own artistic temperament contrasted with present-day modernistic tendencies in advertising. Examples of such early developments as researches on textile fibers and the manufacture of paper from southern woods still bear witness to Dr. Little's personal work. Here, also, are representative samples from his collection of water-marked papers and the famous silk purse from the sow's ear. In his home Little had a collection of small-size pieces of Chinese porcelains.

On January 22, 1901, he married Henrietta Rogers Anthony, of Boston. They made their home in Brookline, Massachusetts, but spent part of the summer at Northeast Harbor, Maine, and the winter season found them in Florida.

Dr. Little died at his summer home on August 1, 1935. He is survived by Mrs. Little, by a brother, Edward H. Little, of Newtonville, Massachusetts, and by a nephew, Royal Little, of Providence, Rhode Island.

AVERY A. ASHDOWN

RECENT DEATHS

DR. FREDERICK LESLIE RANSOME, professor of economic geology at the California Institute of Technology, for many years geologist in the U. S. Geological Survey, died at Pasadena on October 6 at the age of sixty-seven years.

DR. WILLIAM E. GEYER, professor emeritus of physics at the Stevens Institute of Technology, last surviving member of the original faculty of 1870, died on October 8 at the age of eighty-seven years.

DR. EUGENE WESLEY SHAW, formerly of the U. S. Geological Survey, later chief geologist to the Iraq Petroleum Company, died on October 7 at the age of fifty-four years.

THE death is announced of Dr. Samuel Cox Hooker, research organic chemist, formerly a director and one of the chief technicians of the American Sugar Refining Company, at the age of seventy-one years.

PENNOCK MARSHALL WAY, vice-president and general manager of the Arthur H. Thomas Company, Philadelphia, died on October 4. Mr. Way was a member of the American Chemical Society and of the American Association for the Advancement of Science.

PROFESSOR SIR JOHN CUNNINGHAM MCLENNAN, emeritus professor of physics at the University of