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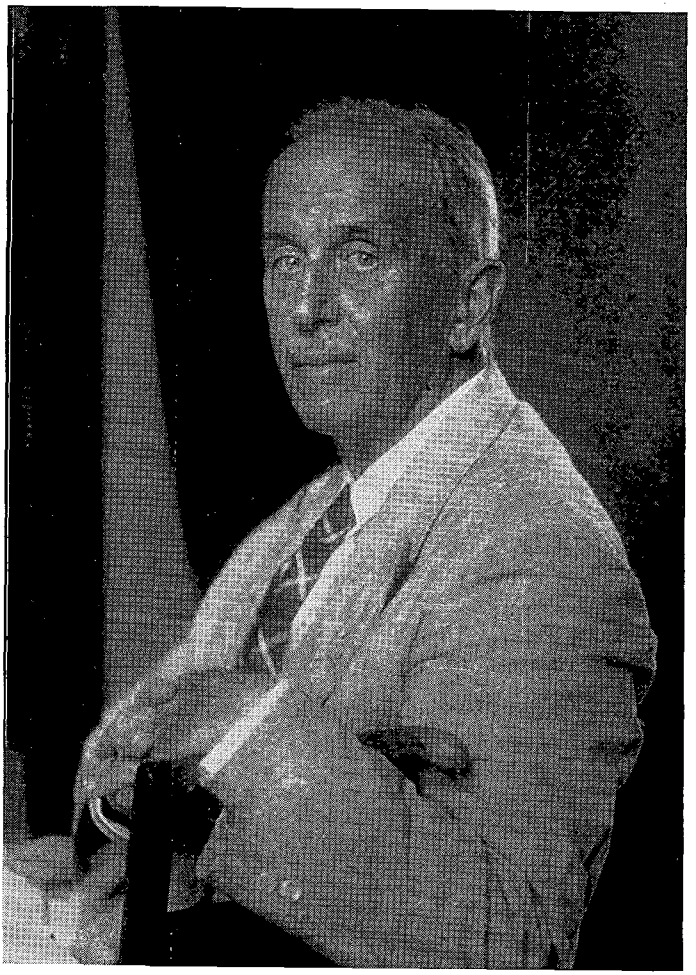
WARFIELD THEOBALD LONGCOPE

1877—1953

A Biographical Memoir by
WILLIAM S. TILLETT

Biographical Memoir



Warfield T. Longcope.

WARFIELD THEOBALD LONGCOPE

March 29, 1877–April 25, 1953

BY WILLIAM S. TILLETT

WARFIELD THEOBALD LONGCOPE was born in Baltimore, Maryland, on March 29, 1877, the son of George von S. and Ruth Theobald Longcope. He was the oldest of the children in the family of three boys and one girl. In his acceptance of the Kober Medal of the Association of American Physicians, awarded to him in 1948, Dr. Longcope said: "Whatever the geneticist may say, we must owe much of what we are to our ancestors. If we can blame them for our misdeeds, so must we be grateful to them for the genes that afford us a more acceptable inheritance. Old Nathan Smith of Dartmouth and Yale, my great-great-grandfather, who treated typhoid fever in the latter part of the eighteenth century by hydrotherapy must have been richly endowed with medical genes, for there have been doctors in every generation of the family since that time." His mother's brother, Dr. Samuel Theobald, was the first Professor of Ophthalmology at The Johns Hopkins Medical School.

His father died just as Dr. Longcope was entering medical school and left him with a sense of financial responsibility for the family, a circumstance which restricted the extent of his extracurricular activities during a considerable period of his early medical career.

In his schooling in Baltimore, he first attended a private school under the direction of Dr. Deichman. He received his undergraduate collegiate education at Johns Hopkins University, graduating with an A.B. degree in the class of 1897. He straightaway entered the Hopkins Medical School, receiving an M.D. degree in 1901.

On December 2, 1915, he married Janet Dana. To them were born four children: Barbara (Mrs. Fenwick Keyser), Duncan, Mary Lee (Mrs. M. L. Johansen), and Christopher, who has followed his father's career in medicine, having graduated from the Hopkins Medical School in 1953, and is at present (1957) serving as a medical officer in the U. S. Navy.

In 1946, in his seventieth year, Dr. Longcope retired as Professor of Medicine in The Johns Hopkins Medical School and as Physician-in-Chief to The Johns Hopkins Hospital, positions which he had held for twenty-four years.

He and Mrs. Longcope then went to live in their summer home at Lee, Massachusetts, in the Berkshires. But, as will be evident from a subsequent account of his career, he was by no means idle, even though officially retired.

He died at his home in Lee on April 25, 1953, at the age of seventy-six.

When one reviews the academic activities through which Dr. Longcope developed in relation to the direction and form that academic medicine was beginning to assume in the succeeding decade after his graduation, it becomes clear that he had, unwittingly, prepared himself for the newly conceived form of full-time medicine for clinical departments that was being developed. Although not the first full-time Professor of Medicine at Johns Hopkins, after the untimely death of Dr. T. C. Janeway and the temporary acting professorships of the war and postwar years, he, with his special type of training and investigational interests, was conspicuous in being peculiarly well suited to carry forward at Hopkins the broad concept of a department of clinical medicine as being the fusion in its members of research, patient care, and teaching.

It is of interest to see how the man with his special interests and capabilities proceeded in the special academic environment to develop in it and then extend it to others for its fullest values. It is informative, therefore, to trace Dr. Longcope's career following graduation, because not only did he himself develop, but his growth

reflects what was happening historically to medical education during that same period.

Dr. Longcope entered the area of clinical medicine through the door of pathology, which, at the time of his graduation from medical school, was rapidly emerging in this country as the discipline of medical science that dominated the study and understanding of disease. William H. Welch had brought the full force of his effective influence into academic medicine through the introduction at the founding of The Johns Hopkins Medical School of the modern pathology of the day as it had been developed in Germany during the latter part of the nineteenth century.

William Osler, the first Professor of Medicine at Johns Hopkins, further advanced the importance of morphological pathology by his constant correlation of clinical observations at the bedside with the findings on the autopsy table.

It is easy to understand, therefore, how the teachings and points of view of Welch and Osler dominated the thinking of student Longcope. Graduating in 1901, he was in the fifth class following the founding of the Hopkins Medical School and consequently partook of the scholarly advantages of the Hopkins concept of medical education as being a true graduate exercise both in character and in point of view.

Accordingly, following his acquisition of the M.D. degree, Dr. Longcope's first position was Resident Pathologist at the Pennsylvania Hospital in Philadelphia. He served in this position for three years under the guidance of Dr. Simon Flexner. In 1904 he replaced Dr. Flexner as Director of the Ayer Clinical Laboratory and served in this capacity until 1911.

Although at the time it perhaps was not apparent, by hindsight it seems clear that Dr. Longcope, in selecting the type of position made available in the Ayer Clinical Laboratory for his first postgraduate activity, was creating a type of clinical activity that was to develop later into the full-time academic medical education that is essentially universal at the present time.

It is of some interest to elaborate this point. Prior to the construction of the Ayer Laboratory, the previously existing clinical laboratory of the Pennsylvania Hospital has been described as "a dark and evil smelling corner in the basement, mostly reserved for urine examinations." It is understandable that at that time no clinician had any prime interest in the activities of the laboratory, which served only as a minor accessory to the physical examination of the patient under the conditions of a well-planned bedside manner. However, when in 1898 the new Ayer Building was completed, light and airy, and equipped with new apparatus, the harbinger of a new place for the laboratory in clinical medicine had arrived, and in time workers in the laboratory would assume a dignified and respected position in promoting the best medical care for patients and in a broader understanding of the processes of disease.

At the beginning of this era, although the medical profession gave lip service to the value of laboratory activities, Dr. Longcope it has been stated, was regarded by his colleagues as sort of "wacky" in spending so much time in the laboratory when he might have been practicing medicine. Furthermore, the bacteria with which Dr. Longcope concerned himself in the laboratory were still somewhat "theoretical" in practical medicine. As a result Dr. Longcope was known in some Philadelphia medical circles as "Bugs" Longcope.

The scope of Dr. Longcope's activities in the Ayer Laboratory included pathology, biochemistry, bacteriology, and serology. And in this connection it is important to note that he performed the tests, prepared the reagents, analyzed the results, and exhibited, as attested by his extant notebooks, that he also analyzed and studied the results for their possible significance in relation to the diseases of the patients.

In addition to the laboratory activities, Dr. Longcope also visited the wards frequently and often gave valuable advice, particularly about diagnosis, based on the combined laboratory and clinical findings. In 1909 he received an additional appointment as Assistant Professor of Applied Clinical Medicine in the University of Penn-

sylvania. In this position he devoted more time to clinical activities and was able to bring to them the close correlation of bedside clinical observations with the pathological findings derived from autopsy room and laboratory.

In these efforts, therefore, Dr. Longcope represented the first Hopkins graduate to extend to another medical school the teachings and point of view in internal medicine which Osler had initiated at the founding of The Johns Hopkins Medical School.

In 1911, Dr. Longcope became Associate Professor of Medicine at the College of Physicians and Surgeons, Columbia University, New York City. In accepting this position at the age of thirty-four, his activities and interest became permanently directed toward the combined function of clinician, teacher of internal medicine, and laboratory investigator.

When he had finished his term of service at the University of Pennsylvania, it is apparent, by reflection, that following his first eight years after graduation he emerged as a uniquely trained clinical academician who set a new standard of learning in several different scientific disciplines, all merging in a broader approach to the problems of disease and in an understanding of the nature of disease both etiologically and pathologically.

It is not unreasonable to surmise that the authorities of the Columbia University College of Physicians and Surgeons sensed the development of a new era in medicine, because in 1911 they appointed Dr. Longcope as Associate Professor of Medicine and three years later, at the age of thirty-seven, he became Bard Professor of Medicine in that institution and Director of the Medical Service of the Presbyterian Hospital, New York City. To these positions he brought the multiple-faceted sources of knowledge by means of which he developed into one of the distinguished professors of medicine both in this country and abroad.

His fulfillment of his position at Columbia was interrupted by the First World War. In August, 1917, four months after the entry of this country into active combat, he assumed active duty in Washing-

ton in the Office of the Surgeon General of the Army. He also served overseas. At that time he devoted a considerable proportion of his military assignment to studies of the two great scourges of the soldiers during the 1917–1919 period, namely, influenza and hemolytic streptococcal infections, both of which occurred in epidemic proportions and with high mortality rates.

Upon his return to civilian life, he again assumed his academic duties at Columbia University. However, in 1922 he made his final change of position by becoming Professor of Medicine, Chairman of the Department, and Physician in Chief, Johns Hopkins Hospital. He now returned to his native Baltimore and the Medical School and Hospital where, as a student, his medical interests had been first developed.

For several years he was also President of the Board of Scientific Directors of the Rockefeller Institute for Medical Research.

Following retirement from Hopkins, he took up residence at Lee, Massachusetts; he continued, however, with clinical activities and teaching. He acted as consultant for a number of hospitals in the Berkshires, participating in discussions and conferences with the local practicing physicians, much to their enlightenment. In addition he made repeated visits to the nearby Albany Medical School, where he conducted clinics for the undergraduate students. He also was adviser to research groups both at that Medical School and at the New York State Department of Health Laboratories.

It is obvious from what has been written in the foregoing paragraphs that Dr. Longcope, following his first position after graduation, rose through the academic ranks to full professorial stature in two of the country's outstanding medical institutions. This recognition by the universities attests to his basic proficiency. Yet it leaves undescribed the impact of the man and his personality on the field of his endeavors, on his associates and students, and on the changes taking place in academic medicine during his period of activity.

In physical size he was somewhat smaller in height and lighter in poundage than the average. He was not brusque in his manner,

nor did he give external evidence of inner turmoils. His approach to people was friendly and gentle, cultural and intellectual. His effectiveness was not through the medium of imposing through dynamic force his ideas on his associates and pupils, but his influence was nonetheless effective.

One of his former young associates has said of him: "The other thing that impressed me about the Professor was that with very rare exceptions his office door was always quite literally open and access to him was available at almost all times. I am sure that this made his life more difficult but it did a great deal for the spirit of the Department. Finally, as you know as well as I, he and Mrs. Longcope, through extensive planning, continually opened their home to the younger generation of medical people." Said another: "The Professor exhibited a wonderful blend of noninterference with the research activities of members of his department, combined with eagerness and willingness at any time to sit down and exchange ideas and contribute sound suggestions for developing further experimentations. His fund of knowledge in all the preclinical and clinical disciplines of medicine was surprisingly extensive."

This fine academic and personal relationship between Longcope and his associates is indicated by the large number of them that later went on to responsible positions in the academic medical life of the nation.

In reviewing his earliest bibliography, the effects of contact with Welch and Osler became apparent through the interests in the field of experimental pathology and infectious diseases. Although there is an apparent diversity of subjects studied at the beginning, the circumstance is reconciled by recognizing that Dr. Longcope was himself working in both bacteriology and pathology in the Ayer Laboratories, and under these conditions he made contact, in these relatively new fields, with new findings that were exciting to him. Accordingly, "Bugs" Longcope described in early articles such findings as tuberculosis of the aorta, micrococcus zymogenes, paracolon infections, streptococcus mucosus. One of his earliest continuous

studies was that upon syphilis of the aorta which correlated in a thorough manner the pathological, etiological, clinical, and therapeutic aspects of this disease. Still another study which emerged from his environment of pathology was Hodgkin's Disease. His first publication on this subject was in 1903. Subsequently he wrote comprehensive pathologico-clinical monographs for Osler's *Modern Medicine* and *Oxford Medicine*. In addition, over many years he made intermittent efforts to establish the etiological agent of Hodgkin's Disease. He never published these negative results, but he surveyed the field of detailed bacteriology and, to some extent, virology.

In the ensuing years following his appointment to the Columbia College of Physicians and Surgeons, Longcope's research activities took a particular direction which was maintained throughout the remainder of his academic career. The scope of the studies involved immunological phenomena, perhaps best described as altered tissue responses (allergy) to foreign agents, both nonviable, such as foreign proteins or bacterial products, and viable bacteria. In 1915 the title of his Harvey Lecture was "The Susceptibility of Man to Foreign Proteins."

With his background of familiarity with both laboratory procedures and clinical manifestations of disease in patients, he was particularly well suited to explore this field.

With the advent of the therapeutic use of specific antitoxins and antibacterial sera derived from animals, and their subsequent widespread development as specific methods of treatment for severe acute bacterial infections, the foreign protein effects in man, ranging from the anaphylactic type of responses to the so-called serum sickness, became topics of increasing interest. From studies of these types of artificially induced human ailments, speculation broadened to consider the possibility that perhaps some of the "natural" diseases of man that follow acute infections might be based upon a mechanism similar to serum sickness, in which instances the source of the incitant of the disease would be foreign protein of either the bacterial bodies themselves or products elaborated by the offending organisms.

One notes in his bibliography Dr. Longcope's first interest in this subject in an article entitled "The Production of Experimental Nephritis by Repeated Protein Injections," published in 1913. Continuously after that study, he approached the problem of nephritis, particularly acute hemorrhagic nephritis, which was his major problem throughout the remainder of his career, through experimentation that involved the possibility that nephritis was an altered tissue response to the bacteria (usually hemolytic streptococci) of the acute infection that preceded the development of nephritis in much the same manner that serum sickness developed in the weeks after the therapeutic injection of immune sera.

Although the question is not yet finally settled, the point of view that acute nephritis is based upon an altered tissue response involving antigen-antibody reactions is still widely advocated.

A final intensive investigation by Longcope emerged from the Second World War. Observations in Great Britain with an antagonist for war gases, known as BAL (British Anti-Lewisite), brought out the fact that this substance promoted the excretion of metallic poisons, such as arsenic, mercury, and others. Longcope and his associates contributed to the usefulness of BAL in civilian cases of metallic poisoning.

His final clinical report, which was published six years after his retirement and based on cumulative data of both his pre- and post-retirement periods, was a comprehensive appraisal of Boeck's Sarcoid. In a reprint of the article sent to this author, his inscription read "I suppose this is my 'Swan Squawk' in clinical reporting."

CURRICULUM VITAE

Born March 29, 1877, in Baltimore, Maryland. Son of George von S. and Ruth Theobald Longcope. Died April 25, 1953, in Lee, Massachusetts.

Married Janet Dana in 1915. Children: Barbara (Mrs. Fenwick Keyser), Duncan, Mary Lee (Mrs. M. L. Johansen), and Christopher Longcope, M.D.

Johns Hopkins University, A.B., 1897. Johns Hopkins University, M.D., 1901. St. John's College (Maryland), LL.D., 1934. University of Rochester School of Medicine and Dentistry, D.Sc., 1941.

Resident Pathologist, Pennsylvania Hospital, Philadelphia, 1901–04. Director, Ayer Clinical Laboratory, Pennsylvania Hospital, Philadelphia, 1904–11. Assistant Professor, Applied Medicine, University of Pennsylvania, Philadelphia, 1909–11. Associate Professor, Practice of Medicine, Columbia University, New York, 1911–14. Bard Professor, Practice of Medicine, Columbia University, New York, 1914–21. Associate Physician, Presbyterian Hospital, New York, 1911–14. Director, Medical Service, Presbyterian Hospital, New York, 1914–21. Professor of Clinical Medicine, Cornell University Medical College, February-July, 1922. Visiting Physician, 2nd Division, Bellevue Hospital, New York, February-July, 1922. Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland, 1922–46. Physician in Chief, Johns Hopkins Hospital, Baltimore, Maryland, 1922–46.

Major, Medical Officers Reserve Corps, August, 1917. Active duty in the Medical Division, Office of the Surgeon General, U. S. A., at Washington until July, 1918. February, 1918, commissioned Lieutenant-Colonel, Medical Corps, U. S. A. May, 1918, commissioned Colonel, U. S. A. Overseas with the American Expeditionary Forces until January, 1919. Upon return to America commissioned Colonel, Medical Officers Reserve Corps.

Member: Association of American Physicians (President, 1945–46); American Medical Association; American Association for the Advancement of Science; National Academy of Sciences; Society for Clinical Investigation (President, 1919); American Association of Immunologists (President, 1935); American Society for Pharmacology and Experimental Therapeutics; American Society for Experimental Pathology; American College of Physicians (Fellow); Harvey Society; Academy of Medicine, New York (Fellow); Medical and Chirurgical Faculty of Maryland; American Academy of Arts and Sciences (Fellow); Royal Society of Medicine, London (Honorary Fellow); Société des Hôpital, Paris (Honorary member); Scandinavian Congress for Internal Medicine (Honorary Fellow); Interurban Clinical Club; Century Association, New York; Hamilton Street Club, Baltimore.

KEY TO ABBREVIATIONS

Amer. Jour. Med. Sci. = American Journal of Medical Science
Amer. Jour. Obst. = American Journal of Obstetrics and Diseases of Women and Children
Amer. Med. = American Medicine
Amer. Rev. Tuberc. = American Review of Tuberculosis
Ann. Int. Med. = Annals of Internal Medicine
Arch. Int. Med. = Archives of Internal Medicine
Boston Med. Surg. Jour. = Boston Medical and Surgical Journal
Bull. Ayer Clin. Lab. = Bulletin of the Ayer Clinical Laboratory of Pennsylvania Hospital
Bull. Hist. Med. = Bulletin of the History of Medicine
Bull. New Eng. Med. Center = Bulletin of the New England Medical Center
Centralbl. f. Bakt. Parasit. = Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten
Cleveland Med. Jour. = Cleveland Medical Journal
Educ. Rev. = The Educational Review
Internat. Clin. = International Clinics
Johns Hopkins Hosp. Bull. = Johns Hopkins Hospital Bulletin
Jour. Amer. Med. Assn. = Journal of the American Medical Association
Jour. Clin. Invest. = Journal of Clinical Investigation
Jour. Exp. Med. = Journal of Experimental Medicine
Jour. Hyg. = Journal of Hygiene
Jour. Immunol. = Journal of Immunology
Jour. Med. Res. = Journal of Medical Research
Jour. Mt. Sinai Hosp. = Journal of Mt. Sinai Hospital
Jour. Pediat. = Journal of Pediatrics
Jour. Urol. = Journal of Urology
L. I. M. J. = Long Island Medical Journal
Med. Clin. North Amer. = Medical Clinics of North America
Med. Rec. = Medical Record
Minn. Med. = Minnesota Medicine
New Eng. Jour. Med. = New England Journal of Medicine
N. Y. Med. Jour. = New York Medical Journal
Occup. Med. = Occupational Medicine
Physiol. Rev. = Physiological Reviews
Proc. Inter State Post Grad. Med. Assembly North Amer. = Proceedings of the Inter State Post Graduate Medical Assembly of North America
Proc. N.Y. State Assn. Pub. Health = Proceedings of the New York State Association of Public Health
Proc. Roy. Soc. Med. = Proceedings of the Royal Society of Medicine
Proc. Soc. Adv. Clin. Res. = Proceedings of the Society for the Advancement of Clinical Research

Proc. Soc. Exp. Biol. Med. = Procedings of the Society for Experimental Biology and Medicine
Trans. Amer. Clin. Climat. Assn. = Transactions of the American Clinic and Climatological Association
Trans. Assn. Amer. Phys. = Transactions of the Association of American Physicians
Univ. Penna. Med. Bull. = University of Pennsylvania Medical Bulletin
Vet. Admin. Tech. Bull. = Veterans Administration Technical Bulletin
Wisc. Med. Jour. = Wisconsin Medical Journal

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