Carleton B. Chapman, MD, MPH

Carleton B. Chapman, who made important contributions in 4 areas of medicine, died in Hanover, New Hampshire, on December 10, 2000. These areas included cardiovascular medicine and research, medical education, philanthropy, and medical history and ethics. His career can be separated temporally into periods when he focused on each of these areas, although he was active in all of them throughout his career.

Dr Chapman was born on June 11, 1915, in Sycamore, Alabama (the same small community that produced Tinsley Harrison). He attended public schools in Talladega and graduated from Talladega High School. He was a precociously talented concert organist during his school years, and he seriously considered a career in music. Although he ultimately chose medicine, he maintained his passion for playing the organ throughout his life.

He entered Davidson College in 1932 as a liberal arts major, where he became President of the Student Body and a member of Phi Beta Kappa. By the time of his graduation in 1936, he had developed an interest in human physiology, which he pursued at Oxford University after being awarded a Rhodes Scholarship.

As a student of St Johns College, Oxford, from 1936 to 1939, he received his BA and MA degrees in Physiology. During that time, he worked with the famous respiratory and exercise physiologist Professor C.G. Douglas. He returned to the United States in 1939 and completed medical school at Harvard, where he received his MD in 1941 and his MPH in 1944. His training in Internal Medicine and Cardiology was received at Boston City Hospital from 1941 to 1944. From 1944 to 1946, he was in the Public Health Service and was stationed first in the Middle East and then in China and Indonesia. In 1946, he returned to Harvard and did a second internship, this time in Pathology at the Mallory Institute.

Chapman’s career in cardiology and research lasted from 1947 to 1966. He was on the internal medicine faculty of the University of Minnesota between 1947 and 1953, where he worked in the Laboratory of Physiological Hygiene directed by Ancel Keys. This laboratory traced its roots to the famous Harvard Fatigue Laboratory, which was operational in Boston from 1927 to 1947. It was in Minnesota that Chapman first combined his interest in cardiovascular medicine and exercise physiology and used invasive techniques to study the cardiovascular responses to exercise in normal human subjects and in patients with heart disease.

In 1953, he was recruited to be Chief of Cardiology in the Medicine Department being molded by Donald Seldin at the University of Texas Southwestern Medical Center in Dallas. It is interesting that Tinsley Harrison had preceded Chapman to Dallas, having been Chairman of this same department from 1944 to 1950. Chapman created the first Cardiac Catheterization Laboratory at Parkland Memorial Hospital in Dallas, and he also founded the Pauline and Adolph Weinberger Laboratory for Cardiopulmonary Research at UT Southwestern. In 1961, he was awarded one of the National Heart Institute’s earliest Program Project Grants, entitled “Response and Adaptation to Exercise,” which is still active today.

Chapman’s research in Dallas showed that maximal oxygen uptake was an excellent measure of cardiac capacity and could be used to quantify fitness in normal subjects and to evaluate cardiac function in patients with heart disease. He was the first to adapt biplane cinefluorography to observe changes in left ventricular shape and volume in dogs and in humans during rest and exercise. He also planned the Dallas Bed Rest and Training Study, which was published in 1968 as a special 78-page supplement to Circulation; this article defined the degree to which the level of habitual physical activity determines cardiovascular capacity and measured the extent to which prolonged bed rest causes cardiovascular deterioration. The findings provided a firm physiological rationale for early ambulation of patients after acute myocardial infarction and quantified the potential benefits of exer-
cise rehabilitation. Recently, a study was repeated on the same subjects 30 years later; the findings are reported in this issue of Circulation and are dedicated to Dr Chapman.

Chapman always had a keen theoretical and practical interest in medical education, and in 1966, he phased out his clinical and research activities to become Dean of Dartmouth Medical School. He was recruited to oversee the conversion of Dartmouth from a 2-year preclinical school to a full-fledged, 4-year, degree-granting institution. Under his leadership, the size of the faculty and that of the student body doubled, 2 new buildings were constructed, and an innovative curriculum was instituted.

In 1973, after completing his reforms at Dartmouth, he left to assume the presidency of The Commonwealth Fund. His experience in earlier years on National Institutes of Health study sections and as chairman of the American Heart Association’s (AHA) Research Allocation Committee, along with his service as national president of the AHA and dean of Dartmouth, had led him to espouse alternative means of supporting and promoting medical education and research as a complement to traditional approaches. The Commonwealth Fund offered an opportunity to test his theories. Under his leadership, the Fund supported a large number of novel and sometimes controversial projects, some highly successful and some inevitably less so; almost all focused the attention of the medical establishment on the need to re-examine the status quo, and several led to permanent changes in American medical education.

In 1980, at 65 years of age, Chapman retired from the philanthropic world to devote himself to a lifelong interest in medical history and ethics. He had earlier written a fascinating monograph on the life of one of his scientific heroes, Ernest Henry Starling, and he also had published a translation from German of Otto Frank’s classic paper on cardiac contraction, which predated Starling’s “Law of the Heart” by 10 years. Chapman’s introduction to the Frank paper convincingly made the case for giving Frank co-credit with Starling for the discovery of what now is commonly known as the Frank-Starling mechanism.

From 1980 to 1985, Chapman was chairman of the newly established Department of Medical History at the Albert Einstein College of Medicine. This period saw the publication of 2 important books on medical ethics and history, one entitled Physicians, Law, and Ethics and the other a biography of another of his heroes entitled Order Out of Chaos: John Shaw Billings and America’s Coming of Age.

Carleton Chapman received many honors and held a number of important offices. He was president of the American Federation for Clinical Research in 1956, served as president of the AHA from 1964 to 1965, was chairman of the Council of Deans of the Association of American Medical Colleges from 1970 to 1972, and was elected to the American Academy of Arts and Sciences and the Institute of Medicine of the National Academy of Sciences.

He was a polymath and could have enjoyed a successful career as a professional musician or an essayist, as well as in academic medicine. His writing was graceful and elegant, and his publications ranged from research and clinical medicine to philosophy, history, and literary criticism. He was equally at home in writing major reviews of Cecil and Loeb’s Textbook of Medicine and of Peter Shaffer’s Broadway play Equus. Not infrequently, he delighted in penning polemical letters to the New York Times on controversial topics of the day.

Indeed, Chapman never shunned controversy. He could be rather impatient on occasion when he perceived that the logic of his reasoning was beyond the grasp of someone he had failed to persuade. Old-timers in cardiology will remember how deftly he skewered the physiologist Robert Rushmer, when Rushmer was vociferously arguing—incorrectly, as all were soon to acknowledge—that the Frank-Starling mechanism and Stanley Sarnoff’s “family of ventricular function curves” were not operative in normal intact animals and humans.

He was quick to detect a lack of rigor in experimental design or a failure to conduct proper controls and, if provoked, he was usually willing to point out fuzzy thinking or humbug. But occasional hints of imperiousness when someone failed to meet his standards were soon overshadowed by his charm and genuine warmth and by an unquenchable commitment to discover new truths, to educate, and to improve the lot of others.

Carleton Chapman possessed a brilliant mind and was imaginative and visionary in his thinking. He was unencumbered by bias or doctrines although he revered tradition and history. He was a wise counselor and mentor and a loyal and generous friend to many. His influence on cardiovascular science, on medical education, on philanthropy, and on medical history and ethics was enormous. His contributions in any one of these areas warrant a place in history, and his cumulative achievements in all these fields were remarkable.

Dr Chapman is survived by his wife of 60 years, Ruth (a woman of great talent and accomplishment in her own right as well as Carl’s center of gravity and his compass), and by 3 children, 3 grandchildren, and 4 great-grandchildren.

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