

WALTER BRADFORD CANNON

1871-1945

Walter Bradford Cannon was born October 19, 1871 in Prairie du Chien, Wisconsin. It was here that William Beaumont, in 1829-31, carried out some of his most significant studies of gastric digestion on Alexis St. Martin.

He received his A. B. degree from Harvard in 1896, A. M. in 1897, and M. D. in 1900. As an undergraduate he was influenced by the zoologists, Charles B. Davenport and George H. Parker; in medical school he was trained by Henry P. Bowditch. His official academic teaching career began with an instructorship in zoology at Harvard in 1899. He was instructor in physiology at Harvard Medical School in 1900, assistant professor in 1902, and succeeded Bowditch as George Higginson Professor of Physiology in 1906.

Stimulated by Bowditch he began his work on the movements of the alimentary canal in 1897 while still a first-year medical student. As a student he demonstrated the movement of a pellet through the gullet of a goose at an American Physiological Society meeting using the newly discovered Roentgen rays. His pioneering roentgenographic studies of movements of the digestive tract that attracted wide attention terminated in 1912. His facility for seeing different facets of a physiological problem led him to study the disturbance of digestive processes by emotional states. This led to the study of the sympathetic nervous system and the adrenal medulla and then to the discovery of sympathin. He studied the essential conditions for normal existence of the higher animals. The constancy of the conditions immediately surrounding the tissue cells led Cannon to call this steady state, homeostasis. His several presentations of the bodily organization for physiological homeostasis, particularly his book, "The Wisdom of the Body", have exerted widespread influence on the thinking of physiologists.

During World War I he was commissioned Lieutenant Colonel in the Medical Corps serving from 1917-1919. He devoted energy and skill to a study of the problems of traumatic shock, collaborating closely with Sir William Bayliss in the development of the gum-saline technique of replacing blood volume.

Dr. Cannon became a member of the American Physiological Society in 1900 and continued to be an active contributor to its scientific programs. He was treasurer of the Society from 1905-1912 and served as president from 1914 through 1916. He was chairman of the local committee for the Thirteenth International Physiological Congress held in Boston in 1929 and later became a member of the International Committee on Physiological Congresses. He took part in the establishment of the National Research Council in 1916 and served as a member of the Council of the National Academy of Science for several years. He was truly an international physiologist. He made extended visits as exchange professor to several foreign countries. In his 36 years as professor more than 50 students from 17 different countries came to his laboratory for advanced study. He held honorary degrees from many foreign universities and

was a member of many learned societies both abroad and at home. Though he received almost every public distinction for which a scientist is eligible he never thought highly of himself. He was acutely modest. He could, however, fight vigorously for ideas in scientific controversy and in the field of public affairs.

He had the faculty of finding profitable lines of inquiry. He was a master of technique. He had a genuine and keen interest in the problems on which his students were working, an interest entirely free from any attempt to dominate or modify their research programs. When appealed to for suggestions he was always ready to take as much time as necessary to consider the problems and would suggest ideas that were both stimulating and helpful.

Cannon always was ready and willing to go before groups of physicians, gastroenterologists, neurologists, endocrinologists, surgeons, army officers, psychiatrists, and other specialty groups to explain to them recent discoveries in physiology and to help them in applying these discoveries to the solutions of their practical problems. He taught medical students and physicians to think of disease as disturbed physiology and treatment as an effort to restore physiological function to normal.

At the celebration of the 25th anniversary of his professorship Dean Edsall spoke of his possession in abundance of those qualities of personality which produce what we call character. Walter Alvarez, in reviewing the reasons which made Dr. Cannon such a good foster father of research, mentioned his open-mindedness to the ideas of others, his genuine interest in the problems of his students and his scrupulous fairness in apportioning credit. President Lowell spoke of a quality which impressed all who knew him - his very great modesty.

Arthur Redfield said of Cannon in 1931: "Dr. Cannon's great success is due to the fact that the search for truth, and particularly physiological truth, is akin to a religious issue which he pursues with an almost evangelical zeal. It is his faith in the importance, I might even say righteousness, of physiological investigation which seems to give him the tremendous energy which his work shows and which he manages to instill into the students who are working with him. This zeal is for the establishment of truth in general, but it is also very markedly for the establishment of physiological truth in particular."

Dr. Cannon was an outstanding exponent of the scientist's public responsibility. He saw that the freedom and beneficence of science could be guaranteed only within the framework of a just society, national and international. He was a citizen-scientist.