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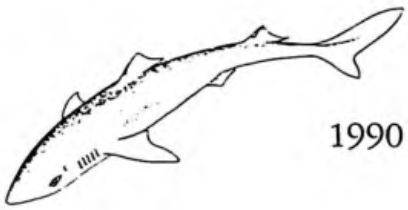

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FORWARD TO THE DEDICATION OF
THE HOMER W. SMITH BUILDING
AT THE MOUNT DESERT ISLAND BIOLOGICAL LABORATORY
July 28, 1989

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Institutions dedicated to research and scholarship are inclined to pay homage to those who have brought them honor and distinction by creating monuments to their memory. For the Mount Desert Island Biological Laboratory, there can be no more fitting recognition of this kind than the dedication of its new laboratory in honor of Homer W. Smith.

Homer Smith came to Mount Desert Island Biological Laboratory in 1926 as a protege of E.K. Marshall. The two had met during World War I. At that time, E.K. Marshall was conducting research on gases at the Chemical Warfare Station of the American University in Washington, DC. Smith was assigned to the Station as a chemist. After World War I, "E.K." arranged for him to take graduate studies with William H. Howell at the Johns Hopkins School of Hygiene and Public Health. Then followed two years of research at the Eli Lilly Company and an MRC fellowship with Walter B. Cannon at Harvard Medical School (1923-1925). He left Harvard to assume the Chairmanship of Physiology at the University of Virginia School of Medicine in Charlottesville. Three years later (1928) he moved on to his permanent post as Chairman of Physiology at New York University School of Medicine.

Homer Smith began his association with the Mount Desert Island Biological Laboratory while he was at the University of Virginia. In Charlottesville he embarked on studies of the comparative physiology of body fluids, focusing on the excretory mechanisms of fish gills as well as the kidneys of amphibians, fish and mammals. This research was an extension of investigations begun at Johns Hopkins on the physico-chemical aspects of the osmotic relationships between cells and the body fluids that bathed them, and the Mount Desert Island Biological Laboratory was a natural setting for him to cultivate this line of work.

Smith's contributions to renal physiology in the decade between 1930-1940 were monumental: he verified the Cushney filtration-reabsorption hypothesis of renal function and developed precise methods for determining the glomerular filtration rate, renal blood flow, renal plasma flow, and tubular reabsorption and secretion. His monograph in 1937 on "The Physiology of the Kidney" was justifiably hailed as a classic. From then on, he was known far and wide as a gifted experimentalist, creative and clever in experimental design, and a virtuoso in the execution of experiments.

For Homer Smith, comparative physiology extended to humans, and it ranged from normal physiology to pathophysiology. At New York University he met two eminent clinicians, Goldring and Chasis, who enlisted his help in understanding kidney diseases. The interest in the homeostatic role of the diseased human kidney that they sparked was to remain central to his research interests for the rest of his life. One reward of the Goldring-Chasis-Smith

interplay was a continuing inflow of talented physician scientists into his laboratories at New York University, many of whom included time at the Mount Desert Island Biological Laboratory as part of their research experience.

As indicated above, Smith appreciated early in his career the possibilities afforded by evolutionary biology for insight into the physiology of body fluids and the role of the kidney in homeostasis. In truth, he was a biologist, not a physiologist. Gradually in the course of his search he put evolutionary biology into the larger framework of the universe. He became expert not only in evolutionary biology but also in the evolution of the lithosphere and biosphere. In turn, he used the body fluids and the kidney as scientific vantage points for viewing the place of man in nature and for examining different philosophic approaches to the significance and value of man in the universe.

The titles of the books published during his lifetime reflect his diverse and widening range of interests: Kamongo (1932); The End of Illusion (1935); The Physiology of the Kidney (1937); Man and His Gods (1952); From Fish to Philosopher (1953). By the 1960's, he was widely appreciated as a naturalist-scientist of great scope who had ventured far beyond the constraints of his chosen field. Late in life the search for the larger view led him to the study of consciousness, the instrument by which living beings become aware of the environment and of self. The logic of this step seemed inescapable to him: consciousness can be found in the simplest cellular organism. A change in the composition of the internal environment is likely to change awareness, responsiveness and integrated performance.

Smith was a scholar who lived for research. Like Faust, he was always probing for "what sustains the world at its essential root." His goal was to create a model, on the grand scale, of the universe and of man's place, significance and value in it. En route, he paused to condemn Plato not only as "a man with the philosophy of an aristocrat, a snob, [and] a bigot" but also as "a man with limited perspective." It was the last that did Plato in as far as Smith was concerned. In 1932, in Kamongo, a fictional account of his search for the African lungfish, he questioned man's place in nature by recounting the imaginary debate between a young scientist (Homer Smith) and an Anglican missionary on the tedious ocean voyage en route to Africa. Later on - a quarter of a century later - he reexamined the same subject in Man and His Gods. A final expression of this ambition was the "Library on Man's Place in Nature" that he created in his closing years at New York University.

Summers at the Mount Desert Island Biological Laboratory were an essential part of Smith's life. Most of his time was spent in reading, writing, and just being available. Young and old took advantage of this availability. He was a "presence" that enriched the Laboratory more by being than by occasional visits to the benches and dock (fig. 1) where experiments were in progress.

Homer Smith was a heroic figure in physiology. He will long be remembered for his landmark scientific papers in renal physiology, for his trainees who in turn made original contributions to physiology and medicine, and for his use of evolutionary biology to understand life on earth and man's place in nature. The Mount Desert Island Biological Laboratory honors itself, as well as the man, by paying tribute to Homer Smith.

Fig. 1 On the Dock. Homer Smith watching an experiment in progress. With Homer Smith on the dock (left to right) are: Henry O. Heinemann (deceased), a medical student taking a summer elective, and Alfred P. Fishman.

REPORT TITLES

A C K N O W L E D G M E N T S

The Mount Desert Island Biological Laboratory is indebted to the National Institutes of Health for substantial support. Contributions to operating costs have greatly improved the efficiency of research activities. The individual research projects which have been served at the Laboratory are variously funded by private and government agencies, and all of these projects have benefited from the NSF and NIH grants to the Laboratory.

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