# In memory of Professor Harold T. Hammel

By Eckhart Simon

Photo courtesy of Eckhart Simon

Harold Ted Hammel, Ph.D. and Professor Emeritus, died on February 24, 2005 in his 84th year of life. After his academic education in Physics and Zoology/Zoophysiology, the stations of his career in physiology were the University of Pennsylvania, Philadelphia, the John B. Pierce Foundation Laboratory at New Haven, an institution associated with Yale University, and – until his retirement – the Physiological Research Laboratory of the Scripps Institution at La Jolla, where he also served as Professor of Physiology of the University of California, San Diego. After his retirement he remained active as an Adjunct Professor of the Human Biology Department of the University of Indiana at Bloomington. The field of research to which H.T. Hammel made his first internationally recognized contributions, was adaptation of humans to extreme climatic conditions. His field studies done in co-operation with the late P. F. Scholander on indigenous populations (Kalahari Bushmen, Australian Aborigines and Alacaluf Indians at Tierra del Fuego) will forever maintain their value as unique documents of the strategies of adaptation to cold developed by these populations living under very different conditions of cold exposure and food supply. H. T. Hammel has become world-famous by his work on the hypothalamus of homeotherms for which he was the first to quantify its thermosensory function as input signal into the natural feedback system of thermoregulation. His results stimulated laboratories all over the world to proceed on the basis of his discoveries and, in particular, they served as the touchstone for the experimental approach to deep-body thermosensitivity in general, leading ultimately to the current concept of thermoregulation as a multiple-input/multiple-effector feedback system. Cooperation of H. T. Hammel with the Department of Physiology, Max-Planck-Institute for Physiological and Clinical Research (now Heart and Lung Research), W. G. Kerckhoff-Institute, Bad Nauheim, Germany, had been initiated as early as 1963 on the occasion of field studies on human cold tolerance in the High-lands of Southern Norway (Hardanger-Vidda). It culminated first in common work on thermo- and osmoregulation of the Adelie Penguin during an Expedition to McMurdo, Antarctica in 1975. Further joint research was put on an official basis, when H. T. Hammel was elected in 1978 as External Scientific Member of the Max-Planck-Institute at Bad Nauheim. This appointment not only has been

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held by him in great esteem, but it started the period of his continuing collaboration with researchers of this institute's Physiology Department in the fields of thermo-and osmoregulation. During 12 successive years, until his retirement, H. T. Hammel spent between 3 and 6 months every year at Bad Nauheim, often accompanied by his wife Dorothy, making important contributions to the analysis of salt and fluid balance, one of the department's main fields of research. Above all, however, water as the medium of life has remained in the focus of H. T. Hammel's interest from the start to the end of his life as a scientist. In animals and plants he has continuously studied and analyzed water transport induced by evaporation and osmosis. Based on seminal experiments and on decades of thinking he developed his original hypothesis of altered water tension underlying the phenomena of water transport and he has continued to refine the presentation of his concept. The controversy with proponents of the classical theory of the colligative properties of water, in which he slowly but continuously has gained ground, had become his "elixir of life" keeping him energetic and active to the end of his days. Many scientists all over the world, both young and old, will respond to Harold Ted Hammel's death with deep sorrow. They have lost a man whose enthusiasm and original ideas were essential for them as guidance and incentive in their own scientific careers, and they will remember him with deep gratitude.

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