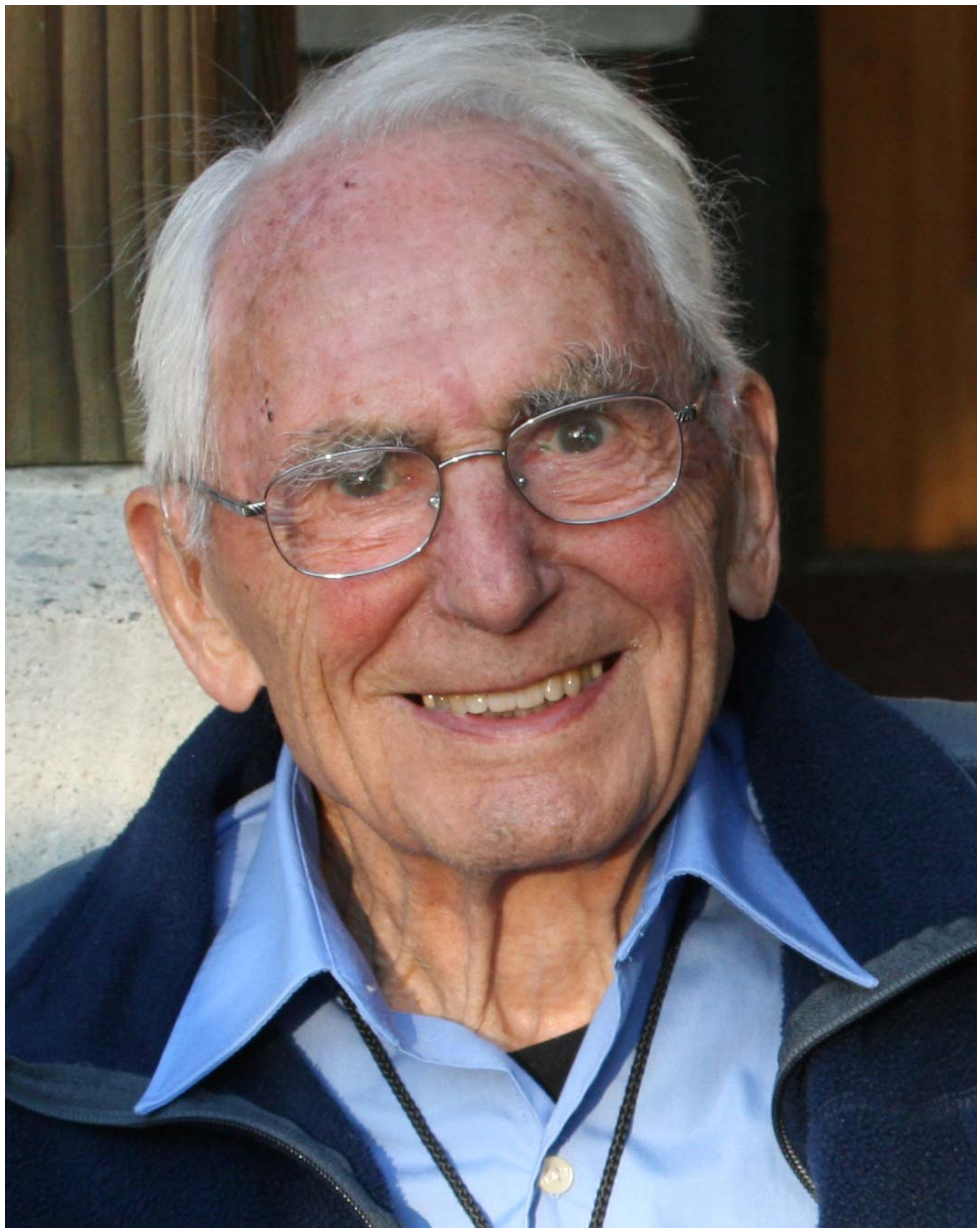


CHARLES J. KREBS

Dennis Hubert Chitty
1912-2010



Dennis Hubert Chitty, born on 18 September 1912 in Bristol, England, died in Vancouver on 3 February 2010. He was Emeritus Professor in the Department of Zoology at the University of British Columbia since his retirement from teaching in 1978.

Dennis Chitty was born an Englishman, though often thought to be Canadian due to the heavy Canadian accent that he acquired during his time in Toronto. Dennis started his biology studies at Toronto in 1930, where he experienced research during four summers with the Ontario Fisheries Research Laboratory on Lake Nipissing. Thanks to the director, Professor WJK Harkness and to senior students, especially Fred Fry, he was lucky enough to get one of the finest introductions to field work for which anyone could hope in a job studying the ecology of an Ontario marsh. Dennis graduated from the University of Toronto in Biology in 1935; when his professor (Bill Harkness) suggested that he should spend a year studying at Oxford under Charles Elton in the newly formed Bureau of Animal Population.

At Oxford, he was offered a job halftime for one year, and Charles Elton decided to keep him on. The result was that Dennis spent 26 years doing research at Oxford in the Bureau of Animal Population. The BAP, as all connected with it came to call it, had been born in January 1932 and by 1934 the University had guaranteed funds for its core costs for five years with 3-4 scientific staff and a very few assistants. Survival as a unit depended on working on numerous applied projects, and the species receiving attention included Canadian snowshoe hares, Canadian lynx, muskrat, beaver, lemmings, European rabbits, squirrels, voles and the wood mouse. The Bureau was the home of the newly created *Journal of Animal Ecology*, of which Charles Elton was the first editor, assisted for 12 volumes by Dennis as co-editor.

Dennis was joined at the Bureau in 1936 by his Canadian wife, Helen, and they were soon sending out questionnaires about a variety of game and "problem" species in Canada and in continuing a study of population changes in the field vole *Microtus agrestis*, in a valley in central Wales. The work involved trying to find why their numbers sometimes, apparently cyclically, rose and crashed in a manner similar to the cycles that had been discovered in the fur returns of Canada lynx and other furbearing species of the Canadian forests and tundra.

In the spring of 1939, British scientists were told that if war broke out with Germany they would be exempted from military service in order to do research. The Bureau was to investigate losses of food caused by vertebrate pests such as rats, mice and rabbits. Dennis worked on populations of brown rats, particularly rats in sewers. Knowledge of the biology and in particular the behaviour of these rats proved to be as important as technical details of poisons and trapping methods. The methods of poisoning sewer rats devised and tested by Dennis and his colleagues formed the basic procedures of all British local-authority pest controllers from 1945 until the late 1950s, when the use of anti-coagulant poisons became widespread.

After the war, Dennis' research continued on voles, principally in captivity, and he completed his D.Phil. thesis in 1949. From 1945 to 1960, Dennis, Helen and other scientists at the BAP demonstrated that none of the causes previously held responsible for declines of field voles,

including disease, were invariably related to the population declines. Increasingly, he began to place emphasis on the physiology, behaviour and genetics of individual animals and on "the stress syndrome", a new idea first developed by Hans Selye in Canada. Dennis synthesized these Oxford research themes into a major contribution in what has become known as the Chitty Hypothesis of Population Regulation which suggested that cycles in wildlife numbers are self-generated by the interactions between individual animals. His conclusion that changes in aggressive behaviour and physiology can prevent unlimited population growth is now a fundamental tenet in population ecology. This hypothesis has generated decades of research into the roles of individual quality, genetics and behaviour in the population dynamics of animals.

In 1959, Dennis was invited by Professor Ian McTaggart Cowan, head of the Department of Zoology at the University of British Columbia, to come from Oxford to a job in the Zoology Department at UBC. Dennis and his family moved to Vancouver in 1961. At UBC Dennis's main interest changed from research to teaching, and his interests in the history and philosophy of science and biology in particular became the focus of his teaching over the next 17 years. His emphasis was always on an insistence on critical thinking, not just among his research students, but among the much larger population of undergraduates at UBC. His undergraduate course attracted not only biologists but a wide spectrum of students from the arts. He taught the scientific method and critical thinking to both his undergraduates and the graduate students in ecology. He described his approach to research questions in his autobiography *Do Lemmings Commit Suicide? Beautiful Hypotheses and Ugly Facts* (1996).

Dennis became a Fellow of the Royal Society of Canada in 1969 in recognition of his contribution to science in Canada. He formally retired from teaching in 1978, with a Master Teacher award from UBC. His first wife Helen, with whom he shared so much of his early Oxford research, died in 1987. He married Sherry Kendall in 1988 and enjoyed a long and mostly healthy retirement during which he attended and participated in many university and departmental functions. In 1993, a lecture series was established in his honour at UBC, and he took great pride in attending the Chitty Lecture each spring, always rising after the lecture to ask a witty question. He was awarded the DSc degree from Oxford in 1997. He died after illness for some months on 3 February 2010, his mind sharp and critical as ever to the last.

*Charles J. Krebs
Professor Emeritus, Department of Zoology
University of British Columbia*

(Author's title given as of the time of writing)