

Reginald W. Salt (1920-2008)

Dr. Reginald W. Salt, an entomologist at the Government of Canada, Agriculture Research Centre in Lethbridge, Alberta, from 1930 to 1970, died March 5, 2009 in Calgary at the age of 98 years. In the 1950s and 60s he achieved international recognition for his research on diapause and cold hardiness of insects.

Dr. Salt (who preferred to be known as “Reg”) was born in Leicestershire, England on September 10, 1910, but moved with his family to Calgary, Alberta in March of the following year. During his childhood he developed a keen interest in natural history emulating his older brothers, George and Ray, who both also became well known biologists, the former as an entomologist at the University of Cambridge and the latter as an anatomist and amateur ornithologist at the University of Alberta. Reg obtained a BSc from the University of Alberta in 1930 and started his career at the Dominion Entomological Laboratory in Lethbridge as an Insect Pest Investigator the same year.



In the fall of 1931 he took educational leave to study for a MSc at Montana State University which he completed in 1933 with a thesis on the effect of low temperature on the Colorado potato beetle, *Leptinotarsa decemlineata* (Say). He then continued his studies on insect cold-hardiness at the University of Minnesota where he obtained a PhD in 1936 with a thesis on the experimental freezing of insects. During his graduate studies he worked during the summers at Lethbridge as a student assistant. After graduation he conducted research on a variety of entomological projects and was among the first to recognize the importance of wild bees in alfalfa seed production (1).

He then took leave from the fall of 1940 until the spring of 1942 to serve as acting head of the Entomology Department at the University of Alberta, replacing E.H. Strickland who had returned to active service in the army.

It was upon his return to Lethbridge that he began the research on the cold tolerance of insects that soon attracted international attention. Up to this point in his career, interrupted as it was by educational leaves and teaching, he had seven scientific publications, whereas during the next 25 years he was to publish 45, including three in *Nature*, one in *Science*, two review articles (2, 3) and one book chapter (4). For much of his work the insect of choice was the larva of the wheat stem sawfly (*Cephus cinctus* Nort.), its parasitoid (*Bracon cephi* (Gahan)) and the eggs of *Melanoplus* grasshoppers.

The facilities and equipment required to study the effects of low temperatures on insects were lacking so Reg spent considerable time designing constant temperature rooms and the instrumentation for determining the freezing point of individual insects. One of the devices he built was in use at the Lethbridge Research Centre until about ten years ago.

His discovery that some insects produced glycerol as an antifreeze prior to the advent of winter captured widespread scientific and popular interest. His later work focused on the roles of supercooling, nucleating agents and polyols in the progression and nature of freezing in biological

tissues and was considered a milestone in the study of freeze-resistance and freeze-tolerance of organisms and tissues. In 1972 he received the Entomological Society of Canada Gold Medal and in 1988 he was honoured with the Society for Cryobiology's inaugural Gold Medal for his work as a pioneer in the field. An excellent tribute to Dr. Salt, written by Richard A. Ring and Paul W. Riegert, was published in "Insects at Low Temperature" in 1991 (5).

Throughout his career Reg had the support of his wife, Beulah, who he met during his PhD studies at the University of Minnesota and married in 1935. They were the proud parents of two children, Douglas and Lucille. After retirement they continued to live in Lethbridge until 2002 when they moved to Calgary to be closer to family – Beulah passed away later that year. They were regular contributors to the Lethbridge Regional Hospital Foundation and in 2003 a substantial donation was made to create the Reg and Beulah Salt Endowment Fund.

Reg's family and friends also remember him for his wood-carvings which he continued to produce until shortly before his death.

J. Robert Byers
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