

## In memory / En souvenir de

**A**mateur entomologist before his teens, lover of southern Alberta grasslands, foothills and mountains, expert on bumblebees, leaf cutter bees and pollination, manager of Agriculture and Agri-Food Canada's Plant Genetic Resources of Canada centre in Saskatoon, world traveller, and loving husband, father and grandfather are a few of the attributes in the legacy of Ken Richards.

Ken was born in Lethbridge, Alberta, in 1946, the son of a railway engineer and a teacher. He had two sons from a first marriage: Keith and his wife, Theresa, and Aaron and his wife, Julia, along with grandchildren, Thea and Elliot. Ken married Linda Mae in 1986 and they had a daughter, Kimberly.-

Ken was destined to becoming an entomologist at a very early age. His passion for insects and early life experiences were in concert with two friends who spent their youth together while living only four blocks apart. The story of how Ken and his friends became entomologists, and the remarkable similarities of their education and careers is unlikely to re-occur in Canadian entomology.

Few retired entomologists writing about a friend can recall first meeting as early in life as the author of this tribute. Ken and I first met in 1951 when we were 5 years old! Our houses were one block apart in a neighbourhood of war time houses in North Lethbridge. We first met when we were enrolled in summer kindergarten, and I recall stopping each day at Ken's house so we could walk to school together.

In 1954 at the age of 8, Ken and I joined a Cub Scout Pack. At one meeting, an entomologist from the local Lethbridge Agriculture Canada Research Station gave a presentation on insects and displayed drawers of insect specimens. From that meeting on, we pledged that we would become scientists who would study insects. Years later, we discovered that the visiting entomologist was the famed bee biologist, Gordon Hobbs. Gordon had a major impact on Ken, as Ken was invited on field trips to the mountains west of Lethbridge with Gordon's two technicians and famed photographer, Evan Gushul. This kind of mentorship would not be allowed today because of liability issues. In return for the invitation, Ken helped count bumblebees in artificial hives and carried equipment.

When each of our families moved to larger homes in South Lethbridge, Ken and I again found ourselves living a few blocks apart. We frequently walked 2 km to the south to explore insect life in a steep-walled glacial coulee called Six-Mile Creek. Ken was hired one summer to collect tiger beetles at this site for University of Alberta graduate student Richard Freitag.

At age 12, Ken and I met Ruby Larson, a plant geneticist working at the Lethbridge Research Station who founded the Junior Science Club of Lethbridge where a group of 12-14 year-old boys met in her basement Saturday mornings to learn about science. By the age of 14, Ken was hooked on bumblebees. He won the Grand Award in the second Lethbridge and District Science Fair in 1964, with a project on bumblebees, and was sent to the Canada-Wide Science Fair in Montreal.

The third student of entomology in our group who joined the club later was David Larson (no relation to Ruby) who lived close to us both.



L.Richards

**Kenneth ("Ken") William Richards**  
**(10 Aug. 1946 – 17 Dec. 2019)**



E.Gushul

Ken Richards (right), David Larson (centre) and Joe Shorthouse (left) at a 1960 meeting of the Junior Science Club of Lethbridge in the basement of Ruby Larson's house.

Ruby took the three of us to Lethbridge meetings of the Entomological Society of Alberta in 1960 and 1963 where our insect collections were exhibited. All three of us went to the University of Alberta to study entomology for our undergraduate and MSc degrees. Ken studied bumblebee ecology for his MSc under the supervision of George Evans.

There were to be other events where our careers followed similar paths. In 1967, Ken, Peter Kevan and I were chosen for a summer-long expedition to study insects at a research camp on the shore of Lake Hazen at the northern tip of Ellesmere Island, about 900 km from the North Pole. Ken studied two species of high arctic bumblebees and returned the following year to collect more data for his MSc.

In recognition of the extraordinary events that brought the three Lethbridge students of entomology together for their MSc degrees, Brian Hocking, founding editor of the University of Alberta journal *Quaestiones Entomologicae*, devoted the entire Volume 9 Number 2(1973) issue to publications arising from the graduate work of Ken, David and myself. Hocking prefaced the issue with an editorial on Ruby Larson entitled 'For love or money?' where he celebrated her role in instilling the love of entomology in the three individuals.

Continuing on similar career paths for our PhD's, Ken went to the University of Kansas to study bumblebees. Waterton Lakes National Park was part of Ken's PhD study area, and in the last 5 years of his life, he made weekly trips to the Park at peak flowering times to record bumblebee biodiversity.

Ken began his career as a forage crop entomologist in 1974 at the Lethbridge Research Station, now called the Lethbridge Research and Development Centre, of Agriculture and Agri-Food Canada (AAFC). He took over this position from his teenage mentor, Gordon Hobbs. Ken undertook research on leafcutter bees and other pollinators. Ken also had research projects using Canadian leafcutter bees in Hungary, Yugoslavia, and China. He later became the manager of forage crops at the Lethbridge Research Station. Ken credited his success here to his friend and workmate, John Virostek, who was Gordon Hobbs' technician before Gordon retired, and Ken's technician thereafter.

In 1996, Ken shifted his scientific focus from bees to genetic resources when he became manager of Plant Genetic Resources of Canada (PGRC) when it relocated to the AAFC Saskatoon Research and Development Centre. A decision was made in Ottawa to transfer all the Canadian seed germplasm (550,000 samples) to Saskatoon, and Ken was charged with supervising the design of a facility to house seeds that had previously been stored at various sites across Canada. He designed operational procedures and hired staff, and PGRC opened in 1998. His work first involved plants, but later included a fungal collection in Ottawa, the plant virus collection from Summerland, British Columbia, the clonal collection of fruit trees and small fruits at Harrow, Ontario and potato breeding in Fredericton, New Brunswick. Ken also initiated the collecting of native species of Canadian plants for PGRC, and participated in seed collecting missions to Greece and Ukraine.

As a member of various Canadian delegations attending meetings of the United Nations Food and Agriculture Organization (FAO) in Rome, Ken became involved in international negotiations related to the Treaty on Plant Genetic Resources, and the FAO Commission on Genetic Resources. Ken ensured that the operation of PGRC was closely coordinated with similar activities in the United States. Through his close working relationship with the U.S. Department of Agriculture, Agricultural Research Service's (USDA/ARS) National Plant Germplasm System (NPGS), Ken was invited to serve as chair of the U.S. external review panels. He undertook this role for 15 years



J. Shorthouse

Ken Richards (left), Joe Shorthouse (centre) and Peter Kevan (right) at Lake Hazen on Ellesmere Island in 1967.

chairing each committee as it assessed the 5-year research and germplasm management plans. Ken also chaired the external review panel for the U. S. National Program 305 Crop Production program, which included the USDA/ARS's bee research. While doing this, Ken served on the Scientific Advisory Committee of the NSERC Strategic Network project called The Canadian Pollination Initiative (NSERC-CANPOLIN) throughout its 5-year life.

When a decision was made by the Government of Canada to establish a gene bank for the Canadian Animal Genetic Resources program at the Saskatoon Research and Development Centre, in cooperation with the University of Saskatchewan, Ken was given the lead to negotiate its initiation and assemble staff.

Ken's Saskatoon position led him to speak in many venues around the world. He was proud to deliver a collection of Canadian germ plasm for the opening of the Svalbard Global Seed Vaults on a remote island in the Svalbard archipelago, halfway between mainland Norway and the North Pole. This seed vault is deep inside a mountain in a region of permafrost where seeds remain frozen even without power. In the last 6 years of his career at Saskatoon, Ken oversaw a group of six research scientists who were working on plant and animal genetic resources with their technicians. Ken and his teams received two Gold Harvest Awards from Agriculture and Agri-Food Canada. The Award in 2001 recognized the team's contribution to the FAO's State of the World's Plant Genetic Resources, and the second Award in 2008 recognized the team for its First Global Plan of Action for Animal Genetic Resources.

When Ken retired in 2011, he and Linda purchased an acreage near Lethbridge. Throughout his retirement, Ken continued to review gene bank programs in the United States, and he undertook seed increases of various species of Canadian native plants on their acreage for PGRC.

In late 2019 Ken completed his research on the biodiversity of native bees in Waterton Lakes National Park. He had data on bees and their host plants from before 1996, along with five summers following his return to southern Alberta. His data included bee counts following the large 2017 Kenow wildfire in the Park.

Ken joined the Lethbridge and District Horticultural Society and soon became a member of the Board. He participated in excursions such as the annual wildflower hike to the Rocky Mountains, and frequently gave presentations at meetings where members learned about the role of bees in gardens and the need for seed banks to sustain genetic diversity. He presented similar lectures for Parks Canada and Glacier National Park in nearby Montana. The Horticultural Society started a Legacy Ornamental Garden in a new park in North Lethbridge, and Ken was on the steering committee to guide its progress. He prepared a long-term plan for the garden that was accepted by the City of Lethbridge. In the summer of 2019, Ken raised and introduced plants to an alpine section of the garden, and was planning a fruit and berry section at the time of his passing.

Ken had expertise in many different disciplines having made scientific contributions to both entomology and plant genetics. He leaves a rich collection of scientific and semi-popular publications authored in two distinct disciplines. He was an outstanding ambassador for Canadian agriculture and studies of Canadian bees. He will be remembered for his incessant desire to learn and share his knowledge of complex biological issues with both scientists and the public. He thrived on drawing attention to beauty in the natural world thereby uniting the Arts and Sciences. He will be missed by his family, a wide network of friends, members of the Lethbridge Horticultural Society, and researchers in entomology and plant genome communities across Canada and around the world.

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