

Lloyd M. Dosdall 1952-2014

ntomology lost a first-class research scientist and educator and a person of outstanding character when Dr Lloyd Dosdall passed away on 12 June 2014, at the age of only 61 years. Lloyd made very significant contributions to entomology and agriculture, but his professional achievements tell only part of the story; his many friends will also remember him as a man of remarkable kindness, generosity and integrity, with an invariably positive attitude.

Lloyd was born in Lestock, Saskatchewan, and spent his early years in the province. He completed his BSc at the University of Saskatchewan in 1974, followed in 1977 by an MSc in entomology studying the stoneflies of Saskatchewan. In 1975, he married Teresa Height, who would be his companion and best friend for the next 39 years. Lloyd then earned a BEd and for 6 years taught high-school science and biology in rural Saskatchewan. However, the lure of entomology was too strong, and in 1983 he returned to the University to begin a PhD evaluating the effects of the insecticide methoxychlor, then used for the control of larval black flies, on non-target

aquatic insects. A 2-year research associateship at the University of Manitoba's Biting Fly Centre followed, and then in 1989 Lloyd took up the position of field crop entomologist at the Alberta Environmental Centre in Vegreville, Alberta. Although he transferred with some trepidation from aquatic entomology into agricultural entomology, Lloyd made this transition with great success. He established a program on integrated management of insect pests of canola that continued for the next 25 years, both at Vegreville and after he joined the faculty of the Department of Agricultural, Food and Nutritional Science at the University of Alberta in 2001.

Lloyd was a very careful and diligent researcher, and his work on aquatic insects from the early part of his career is of high quality and still cited. In particular, his 1979 monograph on the stoneflies of Saskatchewan continues to be a standard reference for the region, and he published an update on stoneflies of the Prairie Provinces – with Donna Giberson – in 2014.

Lloyd was an excellent communicator at all levels. Of course, he had trained as a teacher, but the key to his success was his respect for and genuine interest in others, along with his concern for the accuracy and relevance of the material he taught. He was much loved both as a high school teacher and as a university professor because of his enthusiasm, commitment, love of teaching and care for students. These traits, coupled with Lloyd's assiduous preparation for occasions big and small, whether lessons, lectures, conferences or extension work, made his presentations clear and effective. Lloyd supervised 6 doctoral students and about 10 Masters students during his career at the University of Alberta, often co-supervising them with faculty members from the Department of Biological Sciences or with colleagues at Agriculture Canada. He devoted great care to all stages of graduate student supervision. Initially he secured funding and contributed thoughtful guidance to research plans. During his students' projects he introduced them to collaborative research and even arranged accommodations for field work. Finally, he supported them in the analysis of data and insisted on a high standard as they prepared papers and dissertations. He won several departmental "Teacher of the Year" awards. His obituary in the Edmonton Journal elicited such online tributes as "among the best professors I have ever had in my academic life", "a terrific supervisor and always so engaged and mindful of his students", and "it was hard not to be inspired".

Lloyd was extraordinarily productive, often working with multiple cooperators, not only entomologists but also weed scientists, plant breeders and agronomists. He published 144 refereed

papers in about 30 different international journals, 7 book chapters, and 56 non-refereed reports and popular articles. He made nearly 120 scientific paper or poster presentations at national and international meetings, including invited presentations, and many more at academic institutions and provincial extension meetings. Lloyd also secured substantial grants (more than \$4 million over his career), especially for the extensive field work that underpinned his research, and to support his graduate students. His skills as a writer were put to good use in both grant applications and published papers.

Lloyd's research in field crop entomology made key advances because he appreciated the complexity of natural systems. His work examined many aspects of the ecology of cropping systems in western Canada, with a particular focus on canola and its insect pests. He collaborated with other scientists to investigate agronomic practices that would reduce the impact of significant pests such as root maggots, flea beetles, and cabbage seedpod weevil. This work helped to promote the adoption of zero-tillage practices and reduce the use of insecticidal coatings on canola seeds. His studies on root maggot control were estimated to have saved Alberta producers millions of dollars annually in control costs. He also identified germplasm providing resistance to root maggots and cabbage seedpod weevils, which led to the development of resistant canola varieties. He developed a special interest in several recently invading insect pests in Alberta, particularly the very destructive cabbage seedpod weevil. These studies shed light on the life history, dispersal dynamics, and reproductive biology of the weevil, and on how populations of indigenous parasitoids responded to its invasion. The findings provide a foundation for possible future biological control of the weevil, an aspect he pursued with European collaborators.

In addition to these many studies of canola, Lloyd and his students and collaborators contributed significantly to the understanding of invasive alien pests of other crops such as the pea leaf weevil and cereal leaf beetle. He also helped to focus attention on the biodiversity of agroecosystems, and the interactions among the crop plants, insect herbivores, weeds, and natural enemies that inhabit them. This work, and Lloyd's extension efforts, sensitized the agricultural community as a whole to the great number and diversity of beneficial organisms and the need to protect them and learn more about them. As a result, Lloyd's professional and personal impact in agriculture was profound.

Lloyd's diverse audiences – researchers, faculty members, students, agriculture professionals, farmers, and others – all trusted him, a remarkable compliment to his character. Lloyd even made several well-received videos in which he talked about the pests of canola and their management (e.g. "Canola School - Cabbage Seed Pod Weevil Resistant Canola Varieties" [https://www.youtube.com/watch?v=6xDgT\_Hh0Ao]). Lloyd appears to live on in such snapshots from the internet.\_

Lloyd's achievements in field crops research, information transfer, and improved agricultural practices were recognized by prestigious awards, such as the Alberta Science and Technology (ASTech) Leadership Award for innovation in agricultural science (2010) and the Farm Tech Award for outstanding contributions to Alberta's cropping industry (2013). He delivered presentations and workshops to audiences ranging from academic specialists to farmers in many other countries, including Australia, the Czech Republic, Egypt, Germany, New Zealand, the Peoples' Republic of China, Norway, Switzerland, the United Kingdom, and the United States of America.

As might be expected, Lloyd was active too in the entomological community, and brought his quiet but effective diligence and good judgement to many roles in the Entomological Society of Alberta and the ESC. He was an active member of the ESC Governing Board, as a Director at large (1996-1999) and as Regional Director for the Entomological Society of Alberta (2007-2010). He served on several ESC committees, such as the Scientific Committee for the Biological Survey of Canada, the Science Policy Committee, and the Membership Committee, and was chair of the Publications, Public Education, and Marketing Committees. He participated in various roles in the Entomological Society of Alberta, and was its President in 2011-2012. Just before his

illness he had been elected Second Vice-President of the ESC, although then he had to decline the post. Beyond his other achievements, therefore, Lloyd was an asset to the scientific community. His universal decency and respect for others stood out to entomologists who met him for the first time: everyone he met, including a beginning student, was made to feel important and rapidly put at ease.

Lloyd studied nature with scientific skill, but also took great joy in it. He enjoyed the beauty of the organisms he studied professionally, and liked nature photography. The flowers that he tended in his garden became the envy of the neighbours. He took his positive attitude to life into other interests too. For example, he enjoyed various forms of music; he was always happy to try something new with his friends; he loved social occasions, had a quiet but wicked sense of humour, and could tell stories in a hilarious way. He was very fit, and enjoyed running, skiing, and cycling. Lloyd was highly principled, but without any righteousness, as reflected by his empathy and thoughtfulness. Typically, he would give others rather than himself the benefit of the doubt and was always considerate of other people in social settings, ready to accept a task or obligation in the interest or harmony of the group.

After all of Lloyd's activities, career achievements, and successful personal relationships, his health problems came as a great shock in 2012. A diagnosis of lung cancer when he did not smoke was unexpected. Indeed, Lloyd had taken up running in the interest of fitness, years before, partly to help avoid the risk of an early stroke, and was devastated by the cruel alternative. Even so, Lloyd's outstanding character showed through as he confronted his illness with great dignity. He did his very best in all aspects to deal with his disease, remaining committed to fitness activities such as walking in all weathers. When some treatment success allowed it, he seized the opportunity to cycle, travel and even attend conferences for a good number of months. Indeed, he dipped back into entomology among the canola plants to collect a necessary set of samples for one of his students who could not. He continued to advise his graduate students and help them with the preparation of their theses even as his condition worsened again. Finally, Lloyd handled subsequent adverse developments magnificently, and – as usual – continued to think not of himself but of others, his integrity, compassion and humour undiminished. Those near him were aware that he was sustained throughout these difficult times by his deep but unobtrusive Christian faith and by Teresa's unfailing love and dedicated care.

Lloyd's memorial service, held in Sherwood Park, confirmed just how widely he was appreciated. About 200 people, both entomologists and others, came to pay tribute. All remembered Lloyd's enthusiasm, cheerfulness, kindness, generosity, honesty, integrity, helpfulness and modesty, as well as his skills and abilities.

Lloyd took such joy in life that it seems unfair that he has gone so soon. Those who knew him are deeply saddened by his loss, and the world as a whole is poorer too. Science and the country have been deprived of the further valuable contributions to entomology and agriculture that Lloyd would certainly have made. Nevertheless, Lloyd leaves a substantial legacy. In the professional arena, his careful research and insights, and their translation into beneficial agricultural procedures, stand as an example of responsible scholarship. On a personal level, he touched so many people that he will long be remembered as a colleague, teacher, supervisor, mentor, and friend. Lloyd well deserves such a twin legacy and we, like so many others, are honoured to have known him.

Hugh Danks (Ottawa) and Alec McClay (Sherwood Park)