

# **WILLIAM J. (BILL) TURNOCK**

## **(1929–2008):**

### **ENTOMOLOGICAL CAREER, RESEARCH CONTRIBUTIONS AND BIBLIOGRAPHY**

**R.J. Lamb**

Cereal Research Centre, Agriculture and Agri-Food Canada,  
Winnipeg, Manitoba R3T 2M9 Canada

Bill Turnock's career is remembered in the Newsletter of the Entomological Society of Manitoba, 2008, 35(1): 3-5, the Bulletin of the Entomological Society of Canada, 2008, 40(2): 80-82, and the Winnipeg Free Press, April 16, 2008.

### **Entomological Career**

Bill was born and grew up in Winnipeg. He received a B.Sc. in Agriculture from the University of Manitoba (1949), M.Sc. in Entomology and Forestry (1951) and Ph.D. in Plant and Animal Ecology (1959) both from the University of Minnesota. His entomological career began in the Canada Department of Forestry in 1949. He spent many seasons studying the population dynamics of forest insects at a field station by Red Rock Lake in Whiteshell Provincial Park east of Winnipeg. By 1967 Bill was head of the research section and his research in forest ecology continued until 1970, when the Winnipeg Forestry Laboratory was closed. Bill then became Science Advisor to the Ministry of State for Science and Technology, and he and his family moved to Ottawa. In 1972, Bill made the transition to agricultural research as head of a new section at Agriculture Canada in Winnipeg concerned with insect pests attacking canola, a new and rapidly expanding crop. He continued as section head until retirement in 1993. Bill was an adjunct professor in the Department of Entomology at the University of Manitoba from 1975-1983 and supervised the theses of two M.Sc. students during that period.

Bill served as President of the Entomological Society of Manitoba (1969) and the Entomological Society of Canada (1980), and was elected a Fellow of the ESC in 1983. Bill enjoyed two sabbaticals: in the Netherlands in 1966-67 and Great Britain in 1983-84. Bill lead or participated in Canadian missions to the USSR, Brazil, China, and the UNESCO programs: Man and the Biosphere and the Conference on Economic Development and Human Survival. Bill was a member of the Manitoba Environmental Council from 1973-2000, and served as chair for six years. Bill began volunteering in 1997 on the Prairie Garden Committee and participated in the publication of *The Prairie Garden*. He was also an enthusiastic member of the Friends of the Delta Marsh Field Station, where he undertook a long-term study on the ladybeetles he found on the beaches of Lake Manitoba.

## Research Contributions

Bill approached entomology as a field ecologist, beginning in forest entomology, moving to agricultural entomology, and then focussing on insect cold-hardiness late in his career and also in retirement. He was particularly interested in biological control of insect pests (Turnock and Muldrew 1971; Turnock *et al.* 1977; Turnock 1982; 1984; Turnock and Carl 1995) and pest population dynamics, particularly the role of weather and winter survival (Turnock 1972; Turnock *et al.* 1983; Turnock *et al.* 1985; Turnock *et al.* 1987). Much of Bill's early research was on the larch sawfly, the effects of weather on life history, life tables, and the importance of predation. His own favourite among the early projects was one of the first studies to demonstrate a role for avian predation in insect population dynamics (Buckner and Turnock 1965). In agriculture, Bill worked on the integrated pest management of insects that feed on canola, particularly bertha armyworm, cabbage root maggot, and lygus bugs. While Bill developed practical approaches to pest management (Turnock 1987; Turnock *et al.* 1992; Turnock *et al.* 1995), he never lost sight of the ecology of crop-pest systems (Turnock 1977).

Bill also thought about how best to conduct applied research and was a great believer in teamwork and looking at the whole "system" (Turnock 1969), with the focus on collaboration (Larch Sawfly Investigations Team, 1964). This interest in the "how to" of science took him to Ottawa in the late 1960s in a research policy role, and then back to Winnipeg to set up a canola entomology team at what was then the Winnipeg Research Centre of Agriculture Canada. He brought to the group a sense of working as a team to solve agricultural pest problems from an ecological perspective. His guidance laid the foundation to our understanding of canola pests, including research of his own and that of others in the group.

Over the last 20 years of his entomological career, Bill focussed on insect cold-hardiness. He developed strong connections with European and North American researchers active in this field. As was typical of Bill he approached the problem from an ecological and evolutionary perspective (Turnock and Boivin 1997; Turnock and Fields 2005), but collaborated with physiologists (Turnock and Bodnaryk 1991; 1993) to broaden our understanding of how insects survive winter in the north-temperate zone.

One characteristic of Bill's work was an eclectic interest in the natural world. During extensive periods in the field Bill made many unexpected observations of insect biology that intrigued him. He didn't stop there, however, he investigated, often on his own time, and eventually published on such diverse topics as insects in the diet of crows (Turnock 1975), lady beetle aggregations on lake shores (Turnock 1979), and bumble bees occurring in pheromone traps used to monitor bertha armyworm (Turnock *et al.* 2006). This research increased our understanding of insect diversity in Manitoba (Turnock *et al.* 2001) and the role of introduced species on our native fauna (Turnock *et al.* 2004).

The contributions of a diverse entomological career spanning over 50 years will continue to be useful for decades to come.

## Acknowledgements

Betty Turnock provided a collection of Bill's reprints and details on his career. Neil Holliday provided helpful comments on the manuscript.

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