VOLUME 58 • NUMBER 2 • June 2026 • QUARTERLY

# BULLETIN

## OF THE ENTOMOLOGICAL SOCIETY OF CANADA

IN THIS ISSUE:



Photo contest winners, clockwise from top: 1st Place: *Colletes wilmattae* (K. Peters), 2nd Place: Snow Scorpionflies (R. LaLonde), 3rd Place: Speckled Dun (R. LaLonde)

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# UP FRONT

For many of us, field seasons are now well underway, including for myself. Here is a brief synopsis of what the ESC Executive has been up to since March, including where we are with the upcoming ESC JAM in Winnipeg this October.

**ESC Seminar Series**

This year's inaugural ESC Seminar Series, organized and led by soon-to-be ESC president Dr. Rose Labbé, has ended and, by all accounts, was a resounding success. We had four excellent speakers discussing topics ranging from mentoring student writing to trait evolution in parasitic wasps. For those of you who attended and have comments, requests, or suggestions, we would be happy to receive your feedback—feel free to reach out to Rose directly or to anyone on the executive board. While we are putting the series on hiatus for the summer months, we intend to make this an ongoing event throughout the fall and winter. Stay tuned for more details.

**ESC JAM Winnipeg**

Most of the details for the upcoming ESC JAM in Winnipeg have been finalized and the registration portal is now live https://entsocmb.ca/2026_JAM/JAM.html You can book your room at the conference venue. Check out the meeting website for details.

**Volunteers Needed**

As most of you know, the ESC runs predominantly through the efforts of volunteers, from the executive to various committee roles to the running of JAMs. We are always looking for people interested in helping. In general, these roles are not overly onerous and often involve serving on committees that help with the running of ESC activities. While we are working on getting the website set up to maintain a list of ongoing volunteering opportunities, for now the best approach is to reach out to ESC Secretary Dr. Sara Edwards sara.edwards@nrcan-rncan.gc.ca, who can provide options and connect you with the right people.

With that, I wish you all the best in your research and look forward to seeing you in Winnipeg in October.

Rob Johns, ESC President

# JOINT ANNUAL MEETING 2026

## The Entomological Societies of Canada and Manitoba cordially invite you to attend the 2026 Joint Annual Meeting!

The annual meeting will be held from Sunday 4 October to Wednesday 7 October 2026, at the Canad Inns Destination Centre Polo Park in Winnipeg, Manitoba. The theme of the meeting will be Insect Apocalypse: Causes, Effects, Realities.

The meeting website contains hotel, registration and symposia information: https://entsocmb.ca/2026_JAM/JAM.html

Keynote speakers will include Dr. May Berenbaum, University of Illinois School of Integrative Biology, and Dr. David L. Wagner, University of Connecticut, professor of Ecology and Evolutionary Behavior.

# SEPAC COMMITTEE

**We're on Instagram!**

Check out our new Instagram account @ESC_Student. We're excited to share updates on:

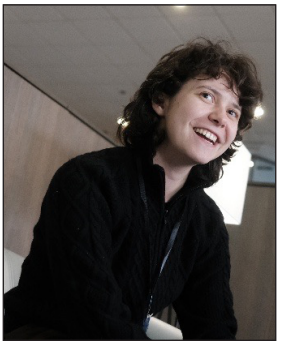
- Projects opportunities for prospective MSc and PhD students
- Scholarship announcements
- New grads who have recently defended

Have an opportunity in your lab, or know of a freshly minted grad from a Canadian University? Email students@esc-sec.ca, and we'll feature you on our Instagram page and in the next issue of the Bulletin!

**Getting Involved with ESC**

ESC's Student and Early Professional Affairs Committee (SEPAC) is always keen to take on new members! Volunteering for SEPAC is a great way to get involved with the Society and promote entomology across Canada. If you are interested in joining or just have suggestions for new initiatives in the coming year, email us at students@escsec.ca, or contact us personally at georgiana.antochi-crihan@saskatoon.ca and bereniceromerouwc@gmail.com. We look forward to hearing from you!

Sarah Eisenbarth (She/Her), Jeremy Irvine (He/Him), Emma Stainforth (She/Her)



# LOCAL SOCIETY ROUNDUP

**Saskatchewan**

The Entomological Society of Saskatchewan (Saskatoon members) operated a booth at the Saskatoon Wildlife Federation's sports and leisure show (6-7 March 2026), a first for us. We also had a booth at Gardenscape (27-29 March) again this year.

The Entomological Society of Saskatchewan's spring meeting was held in the Saskatoon Agriculture and Agri-Food Canada building, and virtually, on the afternoon of Friday 24 April. Our spring guest speaker was Dr. Georgiana Antochi-Crihan, the City of Saskatoon's Entomologist. This was followed by our regular business meeting. During the meeting the Members elected Dr. Meghan Vanoksy as the new ESC Regional Director for the society, effective October 2026. Next spring will be the Society's 75th year.

**Manitoba**

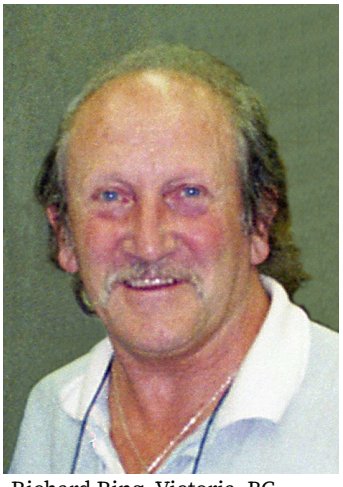
The 2026 Joint Annual Meetings of the Entomological Societies of Canada and Manitoba will be held at the Canad Inns Destination Centre Polo Park in Winnipeg, Manitoba from Sunday 4 October to Wednesday 7 October 2026. The theme of the meeting is "Insect Apocalypse: Causes, Effects, Realities". Keynote speakers include Dr May Berenbaum, University of Illinois School of Integrative Biology and Dr David L. Wagner, Professor of Ecology and Evolutionary Behavior.

Meeting information, including hotel, registration and symposia, can be found at the meeting website: https://entsocmb.ca/2026_JAM/JAM.html

# IN TRIBUTE

## Richard A. Ring: Entomologist and Educator

Rob Cannings, Robb Bennett, and Neville Winchester



Richard Ring, Victoria, BC. Modified by Hugh Danks from a photograph taken by him in the entomology lab at the University of Victoria (1995).

Richard Ring was born on 24 September 1938 on a small farm at Bearsden, near Glasgow, Scotland. He was educated in Glasgow schools and, in 1961, received a BSc (honours) in Agricultural Zoology from Glasgow University with a thesis investigating the digestive enzymes of the blow fly, *Calliphora vomitoria* (L.) (Diptera: Calliphoridae). In summers (1959–1961), he worked in Edinburgh as a crop inspector for the Department of Agriculture for Scotland. He completed his PhD in Entomology at the same university in 1965, studying diapause in the larva of *Lucilia caesar* (L.) (Diptera: Calliphoridae), another blow fly. Although his university studies focused on agricultural entomology, he received a comprehensive education in the biological sciences.

At the time he was completing his doctorate, Richard was invited by a new acquaintance, Geoff Scudder, to apply to be Geoff's sabbatical replacement in the Zoology Department at the University of British Columbia in Vancouver, BC. Richard got the job and his decision to come to Canada was one of the most influential events in his life.

Richard's PhD studies on overwintering diapause in blow flies had introduced him to the pioneering work of R.W. Salt (Canada Agriculture Research Station, Lethbridge, Alberta), whose "Principles of cold-hardiness" (Salt 1961) impressed the young entomologist. Salt's work, as Richard stated (Ring 2004a), "... established the working principles in studies of insect cold tolerance for the next forty years and became the paradigm within which we still operate today." Richard acknowledged his debt to Salt in a tribute chapter in a book on insects at low temperatures (Ring and Riegert 1991). Thus, as Richard settled in Canada, the country's entomological heritage had already deeply affected him.

After his year in Vancouver, Richard was awarded an NSERC Postdoctoral Fellowship (1965–1966) at the Entomology Research Institute, Agriculture Canada, in Ottawa, Ontario (now named the

Ottawa Research and Development Centre), which houses the Canadian National Collection of Insects, Arachnids and Nematodes (CNC). This position was arranged by Antony Downes, a leading dipterist in Agriculture Canada at the time. It was a marvellous opportunity for Richard to meet many of the scientists involved in the Northern Insect Survey (1948–1966), which undertook entomological field work all over the Canadian Arctic and established baseline data for future arctic studies (Danks 1981). Some of these entomologists, such as Philip Corbet, Don Oliver, and Frank McAlpine, became important colleagues in Richard's career. His brief time in Ottawa solidified his interest in arctic entomology; his research focus on overwintering diapause broadened into other ecophysiological adaptations to arctic habitats, such as cold-hardiness.

In 1966, Richard joined the fledgling University of Victoria, in Victoria, BC, as an Assistant Professor in the Department of Biology and quickly established an important laboratory for arctic entomological research there. He earned the rank of Associate Professor in 1972 and Professor in 1988 and worked at this university for the rest of his distinguished career. He retired in 2004 and was named Professor Emeritus. In his retirement, he spent considerable time working on projects on the Syrphidae and other groups as a Research Associate at the Royal British Columbia Museum in Victoria.

Richard Ring, Victoria, BC, 1970s. Image courtesy of Alasdair Ring. Photographer unknown.

Richard is remembered for his outstanding achievements in entomology—especially his studies of arctic insect physiology and ecology, his research into the diversity of insects in temperate old-growth rainforests, his commitment to undergraduate and graduate education, and his leadership in the scientific life of Canada. His open personality, friendliness, generosity, and respect for others endeared him to those who knew and worked with him.

This broad legacy was highlighted at the 2003 joint Annual General Meeting of the Entomological Societies of Canada and British Columbia, held in Kelowna, BC, where he was feted for his accomplishments. A symposium, "*Adaptations and Constraints*", organized by Neville Winchester and Robb Bennett, was held in his name and filled with papers contributed by friends and colleagues (Bennett 2006). These were published in a special issue of *The Canadian Entomologist* (Volume 138, Issue 1, February 2006) and included a summary of Richard's career (Danks 2006a). In addition, Richard presented the annual Entomological Society of Canada Heritage Lecture highlighting his personal adventures in his work on insect adaptations (Ring 2004a). To top it all off, he was named an Honorary Life Member of the Entomological Society of British Columbia.

Subsequently, in 2006 Richard was awarded the prestigious Gold Medal of the Entomological Society of Canada for outstanding achievement in Canadian entomology (Entomological Society of Canada 2006). In his acceptance address, he described the diversity of his career and the joy he had found in it.

**Researcher and Writer**

Richard Ring published over 65 peer-reviewed papers, nine book chapters, and dozens of other articles in myriad publications. A summary of his work, including references to selected peer-reviewed papers and book chapters, is given here to illustrate the breadth of his interests and the accomplishments of his research. Although much of this work was done in collaboration with his students and colleagues, we focus here on Richard's achievements.

His first refereed paper, based on his undergraduate thesis, was published in Nature and explored the intestinal proteinases of *Calliphora vomitoria* (Fraser et al. 1961). His later graduate studies resulted in papers examining diapause in the larva of *Lucilia caesar* (e.g., Ring 1967a, b; 1968). His diapause studies and his new connection to Canadian ecological studies in the late 1960s led him to the field in which he is best known—insect physiology and ecology in polar regions. Here his focus was on the adaptations of cold hardiness, diapause, and desiccation resistance that are so important in northern habitats dominated by long, cold winters, short growing seasons, and often low precipitation. Early on, he and his students worked mainly in the low western Arctic around Inuvik and Tuktoyaktuk, Northwest Territories but, later in his career, mainly for logistical reasons, he moved his northern research to the

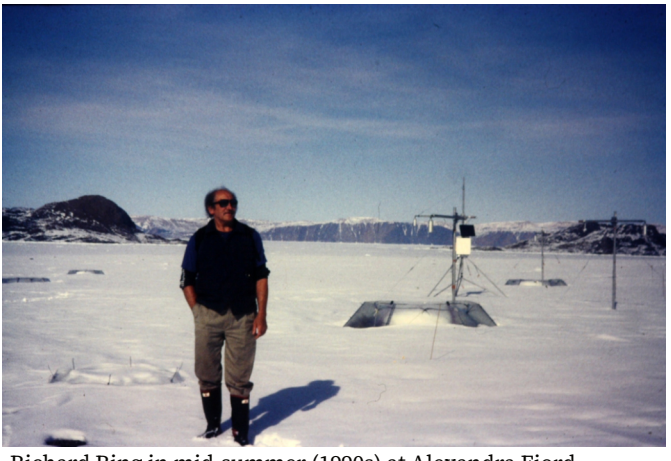
eastern high Arctic at Alexandra Fiord on Ellesmere Island, Nunavut.

In one of his first studies of cold hardiness, Richard discovered that larvae of the bark beetle, *Scolytus ratzeburgi* Janson (Coleoptera: Scolytidae), supercooled in winter using mostly glycerol, but also several other antifreeze compounds; the use of multiple cryoprotectants possibly reduced the toxic effects of high concentrations of any one of them (Ring 1977). He showed that larvae and adults of the beetle *Pytho americanus* Kirby, (Coleoptera: Pythidae) are both tolerant of freezing. This was the first demonstration that an insect could be frost tolerant in more than one life stage, allowing it to extend its life cycle over several short arctic growing seasons (Ring 1982, Ring and Tesar 1980). Richard also found that some of the lowest supercooling points ever recorded are from willow stem galling insects such as a species of *Rhabdophaga* cecidomyid midge (Diptera: Cecidomyiidae); supercooling points down to −66 °C were recorded for some larvae in willow galls in the Northwest Territories (Ring 1981, 1983, 1983; Ring and Tesar 1981).

Richard's success in his research into insect cold hardiness can be attributed to his understanding of the variety and complexity of the adaptations involved (Ring 1980, 1981, 1983). For example, adaptations for cold hardiness and for resisting desiccation are linked; Richard explored these features throughout his career and was instrumental in drawing attention to the important role of trehalose and other substances in defending against both of these challenges (Ring and Danks 1994, 1998; Danks 2006b, Danks 2021). Some cold-resistant insects, however, lack the usual cryoprotectants (Ring 1981, 1983, Danks 2006b). Life-cycle adjustments can also aid insects living in cold and drying environments and Richard studied a range of these adaptations occurring in arctic insects—for example, *Hydroporus* beetles (Coleoptera: Dytiscidae) (DeBruyn and Ring 1999) and a *Gynaephora* moth (Lepidoptera: Lymantriidae) (Danks et al. 1994, Morewood and Ring 1998). With Lee Humble, Richard showed that endoparasitoids of arctic sawflies (Hymenoptera: Tenthredinidae), like their hosts, were tolerant of freezing. Freezing of the parasitoid larvae occurred at the freezing point of the host prepupa; this resulted from the inoculation of the parasitoids' fluids by ice crystals growing in the host hemolymph (Humble 2006, Humble and Ring 1985). He also studied cold hardiness in anthomyiid flies (Turnock et al. 1998) and in aphids, where supercooling ability was examined (O'Doherty and Ring 1987).

Richard did not restrict his cold-hardiness work to insects; he was involved in an early study on the freezing and desiccation tolerance of the limpet *Acmaea digitalis* (Eschscholtz) (Roland and Ring 1976) and a later one on several species of arctic spiders (Rossolimo et al. 1997).

With a team of international colleagues organized by the British Antarctic Survey in 1988, Richard travelled to the sub-Antarctic to study the adaptations of insects on South Georgia (Block et al. 1988). They examined, among other things, feeding and respiration in promecheilid beetles (Sømme et al. 1989a, 1989b) and desiccation resistance in other arthropods (Ring et al. 1990).



Richard Ring in mid-summer (1990s) at Alexandra Fiord, Ellesmere Island, Nunavut. He undertook research there as part of the International Tundra Experiment (ITEX), which studied the effect of global warming on plants, insects, and other organisms. Image courtesy of Alasdair Ring. Photographer unknown

In his Heritage Lecture (Ring 2004a), Richard stressed what he considered the major contributions of his laboratory in the cold-hardiness field: "(1) identification of a multi-component cryoprotective system in successful overwintering insects, including a combination of glycerol, trehalose and sorbitol; (2) the discovery of the lowest supercooling point (-61°C) ever recorded for an insect, *Pytho americanus*, in the Western Canadian Arctic (Ring 1982); (3) the close relationship between cold hardiness and desiccation resistance that exists in overwintering insects; the role of increased levels of trehalose in the haemolymph of these insects has also been implicated in increased resistance and/or tolerance of dehydration (Ring and Danks 1994); and (4) identification of various anomalies that exist among arctic insects, such as being freezing

tolerant, yet having very low supercooling points and, in some species, having double supercooling points."

Although cold hardiness was a major focus of Richard's research, he spent time examining another realm of harsh environments for insects—saline waters. He especially was intrigued by the diversity and life-histories of intertidal chironomid midges in the genera *Paraclunio* and *Saunderia* (Diptera: Chironomidae) (Morley and Ring 1972a, b). The larva of *Paraclunio alaskensis* Coquillett was the subject of a study on osmoregulation and respiration in the marine environment (Parkinson and Ring 1983). This research on intertidal chironomids was summarized in Ring (1989). Richard also looked at the adaptations of staphylinid beetles to the marine environment on both sandy beaches (Topp and Ring 1988a) and rocky shores (Topp and Ring 1988b).

Richard's interest in marine insects was not restricted to ecology and physiology; he published on morphology and taxonomy, too. He used the fine structure of the pupal spiracular gills of the intertidal crane fly, *Limonia* (*Idioglochina*) *marmorata* (Osten Sacken) (Diptera: Limoniidae), to assert that *Idioglochina* and *Dicranomyia* are distinct only at the subgeneric level (Ring 1978).

Richard also studied the diversity and characteristics of insects, spiders, and other organisms inhabiting the highly saline springs on Salt Spring Island, BC (Ring 1991).

Chironomid midges (Diptera: Chironomidae) crop up in another of Richard's research topics—the control of pests; in this instance the target was Eurasian watermilfoil (*Myriophyllum spicatum* L.), an aquatic plant that chokes lakes and other waterways. He and his students discovered a new species of chironomid, *Cricotopus myriophylli* Oliver, that fed on the invasive plant; they studied the potential of the fly larva to control milfoil (MacRae et al. 1990, MacRae and Ring 1993). The caddisfly *Triaenodes tardus* Milne (Trichoptera: Leptoceridae) was also investigated as a control agent (Ring et al. 2002). Richard pursued other research into integrated pest management. He studied the European winter moth, *Operophthera brumata* (L.) (Lepidoptera: Geometridae) and its depredations on Vancouver Island (Ring 1988, Underhill et al. 1987) and, to investigate potential side-effects of applications of *Bacillus thuringiensis* (BtK) to control western spruce budworm, he monitored populations of non-target Lepidoptera in the test sites (Boulton et al. 2002). However, he also worked on traditional aspects

of pest control, studying insecticides such as dichlorvos (Ashwood-Smith et al. 1972) and furocoumarin (Ashwood-Smith et al. 1984).

Hugh Danks and Richard Ring in the University of Victoria entomology lab, Victoria, BC, August 1995. Some of the insects and other invertebrates collected by Neville Winchester in his temperate rain forest canopy study in the Carmanah Valley, BC, are in the background. Photograph by Hugh Danks.

In the 1990s, funding for arctic research dwindled and interest in climate change and its effects on biodiversity increased dramatically. Richard took advantage of this change. Although he continued to write about arctic biology (e.g., Ring 1994, 2004b), he spent much of his research time involved in studies on the diversity of insects and arachnids of ancient forests. Of particular interest were the Douglas-fir woodlands and the Sitka Spruce rainforests of southern Vancouver Island. Canopy studies, stressing species diversity, abundance, and conservation priorities in these areas, led by Richard's student, Neville Winchester, played a major role in this work and opened the eyes of many biologists (Ring and Winchester 1996; Winchester and Ring, 1996a, b; Winchester and Ring, 1999; Winchester et al. 1999). Richard travelled as far afield as northern Australia and Cameroon to address his interest in canopy faunas.

Other studies of faunistics and diversity occupied Richard's time. He examined the ectoparasites of seabirds (Ballard and Ring 1979) and the biology of arctic caddisflies, including that of the unusual *Sphagnophylax meiops* Wiggins and Winchester (Trichoptera: Limnephilidae). This relict caddisfly discovered near Tuktoyaktuk by Neville Winchester represented a new genus and species (Wiggins and Winchester 1984, Winchester et al.1993). Richard helped compile some of the early spider lists for British Columbia (West et al. 1984, 1988) and spent considerable effort in his retirement drawing up a preliminary list of the hover flies of BC.

In addition to peer-reviewed papers and book chapters, as an active and conscientious scientist, Richard gave dozens of conference presentations and poster displays at meetings and scientific workshops across Canada and around the world. He wrote book

reviews and reports to funding agencies, published many short articles on natural history topics, and reviewed countless manuscripts for scientific journals. He was a gregarious and generous friend to his scientific colleagues and students with whom he shared the laboratory bench, field experiences, and the publishing process. Richard was honoured by a friend and colleague, Jan Klimaszeski, who named a rove beetle (Coleoptera: Staphylinidae) from the Carmanah Valley after him—*Atheta ringi* Klimaszewski (Klimaszewski and Winchester 2002).

**Teacher and Educator**

The high regard that his students and university colleagues had for Richard Ring's teaching abilities is obvious—he received both the 2003 University of Victoria Faculty of Science Teaching Award and the 2004 University of Victoria Alumni Excellence in Teaching Award. He was open, accessible, interested, and respectful—good qualifications for excellence in teaching. As his nomination for the latter award states, "Everyone speaks of Richard's dedication, enthusiasm, humour, and concern for students.... on his ability to integrate his research and teaching, a talent that brings his lectures alive." Over his career at the University of Victoria, he was an instructor in 309 undergraduate course offerings and lectured to over 16,000 students. He supervised 24 MSc, 6 PhD, and 2 post-doctoral students. Many of his students continued his legacy as university professors and administrators, government research scientists and conservation biologists, medical doctors, and teachers. Former students consider him an important mentor, and he often supported and collaborated with them long after their graduation.

In the early 2000s, Richard received an award from the National Science and Engineering Research Council (NSERC) for 25 years of continuous research grant funding; at the time this represented the entire lifetime of the NSERC program. This funding nourished the training of his graduate students; he took good care of them. As Hugh Danks noted in his introduction to the symposium held in Richard's honour in 2003 (Danks 2006a), Richard was "...noted for his diligence in helping students in the laboratory, for his ability to smoothly integrate the laboratory materials with the lectures, and for always being accessible and helpful. Many students have been inspired by Richard's hands-on approach and love for the subject to pursue entomology, and Richard always had students in his laboratory doing special projects". He created a stimulating learning environment, encouraged independence, and gave students free rein to develop intellectually, but he patiently and

carefully helped them along the way.

Richard Ring in his office at the University of Victoria, Victoria, BC, August 1995. Photograph by Hugh Danks.

Richard championed the University of Victoria's Biology Co-operative Education Program, one of his significant educational accomplishments. Anne Parkinson, one of Richard's former graduate students and later the program's Director, praised Richard in his nomination for the Alumni Excellence in Teaching Award: "Richard Ring was not only the instigator of Co-op in the Biology Department, but has facilitated many job placements in entomology and biology in general. He has been one of our greatest supporters... he was absolutely key." Richard served as the first Director of the program from 1984 to 1990.

Richard was indefatigable in curriculum development; he sat on the Biology Department Curriculum Committee for ten years (1971–1981) and was chair for four of these years. He knew how to teach, and he knew what coursework should contain to maintain student enthusiasm. He was the first entomologist at the University of Victoria and, of necessity, developed the three undergraduate entomology courses and several graduate ones. Importantly, for most of his career he was co-ordinator of the large first-year biology course in the department, the entry level course for all further offerings in Biology, and the science requirement for many non-science majors. In the late 1970s he even helped establish an introductory biology course in the British Columbia Penitentiary System called the "Correctional Education Program". It allowed prison inmates to take this accredited university course as mature students.

As an enthusiastic participant in university life, Richard threw himself into other campus activities, such as serving on the Standing Committee on Biology for British Columbia Universities and Colleges, the Scientists-in-the-Schools Program, the University Lectures Committee, the Academic and Professional Affairs

Committee of the Faculty Association, and the Advisory Committee to the Dean of Arts and Science. He organized the annual invertebrate symposium, popular with students, faculty, and staff.

Richard was an original member and former president of the university Faculty Club (since 1982 called The University Club of Victoria). Over lunch or drinks, perhaps after presenting a guest lecture in one of his courses, we fondly recall discussing all sorts of scientific issues with Richard and his colleagues in that favourite place of his.

Richard's long and distinguished record of educational service in science extended to the community at large. Popular as a speaker around Victoria and farther afield, Richard talked about insects and science at schools, service clubs, naturalist societies, and other organizations. He led field trips for the Victoria Natural History Society. He gave innumerable interviews for radio, television, newspapers, and magazines in British Columbia and across Canada. He loved extension entomology and answered uncounted questions from the public, government agencies, and others on all sorts of insect topics from pest control to species identification.

**Influential Scientist and Administrator**

As a university professor, Richard took his professional life seriously. He was always an avid supporter of entomological societies. He served as president of the Entomological Society of British Columbia (1971, 1983) and was made an Honorary Life Member in 2003. He was president of the Entomological Society of Canada (1991–1992) and, in 2001, was elected a Fellow of the Society. In 2006 he was honoured with the prestigious Gold Medal of that society for outstanding contributions to entomology in Canada. Richard was a Fellow of the Royal Entomological Society of London, and a member of various national and international bodies, including the Canadian Society of Zoologists, the Association of Canadian Universities for Northern Studies, the Entomological Society of America, the Arctic Institute of North America, the Society for Cryobiology, and the Society for Conservation Biology. He was active back home in Victoria, too, working on the Garry Oak Meadow Preservation Society, the BC Plant Protection Advisory Committee, and the gypsy moth task force, among others. Richard played an important role in the Biological Survey of Canada (Terrestrial Arthropods) (BSC), serving on its Scientific Committee (1990–2002). His wide experience, especially in the North, was invaluable when the BSC dealt with arctic issues. Hugh Danks, Head

of the BSC, often visited Victoria to promote the Survey's work, and recalls that during these visits, Richard "was especially helpful... characteristically... he would provide opportunities for his students to be exposed to, and discuss, entomology in both formal and informal settings (Danks 2006a).

Richard Ring at the Entomological Society of Canada annual meeting in Montreal, 2006, where he received the Society's Gold Medal. Image courtesy of Robb Bennett. Photographer unknown.

An energetic organizer, Richard chaired the organizing committee for the International Symposium on Insect and Plant Cold Hardiness held in Victoria in 1985 and 2000. He also hosted the Society for Cryobiology meetings (1980) and organized a session at the 18th International Congress of Entomology in Vancouver (1988).

Richard had a way with words and an instructive, respectful editing style. He edited the Journal of the Entomological Society of British Columbia from 1988 to 1994 and was Editor-in-Chief of The Canadian Entomologist from 2003 to 2007. He supported other journals too and reviewed many papers for many journals on a wide variety of subjects.

Just before he retired from his long career at the University of Victoria, Richard reflected on a career shaped by "people, places, projects, and passion" (Ring 2004a). He genuinely liked people. His generosity, kindness and integrity drew people to him and his influence lives on through the students and colleagues he touched and inspired. He loved the places he experienced and several, especially in the Arctic and on Canada's west coast, defined his work. His passion fuelled his curiosity and insight and guided his work and friendships. Richard's energy and commitment resulted in a significant legacy—distinguished entomological contributions, an exceptional teaching record, and a broad professional influence.

**Acknowledgements**

We thank Alasdair Ring and Hugh Danks for checking the manuscript and for providing photographs. Syd Cannings, Margaret Chapman, Joan Kerik, and Staffan Lindgren also read the manuscript.

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Rob Cannings (rcannings@royalbcmuseum.bc.ca) is an Emeritus Curator at the Royal BC Museum in Victoria, BC, where he was Curator of Entomology from 1980 to 2013. He mainly studies the systematics and faunistics of Odonata and Asilidae (Diptera) but publishes on a variety of insect orders. He is the author of several books, including Introducing the Dragonflies of British Columbia and the Yukon and The Systematics of *Lasiopogon* (Diptera: Asilidae).

Neville Winchester (winchest@uvic.ca) has recently retired as a research entomologist and a member of the teaching staff in the Biological Sciences Department at the University of Victoria. His special areas of research and interest include diversity of arthropods, ancient rainforest ecology and conservation biology. His doctoral work in the Carmanah Valley (supervised by Dr. R.A. Ring) was instrumental in its eventual protection as a provincial park and he continues to demonstrate the uniqueness of these areas, with emphasis on the organisms that live in the canopies of British Columbia's ancient rainforests.

Robb Bennett (robb.bennett@shaw.ca) has spent much of his life pursuing an active interest in spider taxonomy, systematics, and faunistics. He has described many new species of spiders and leads the effort at the Royal British Columbia Museum to document the province's spider diversity.

# BOOKS AVAILABLE FOR REVIEW

The ESC frequently receives unsolicited books for review. A list of these books is available online (http://esc-sec.ca/publications/bulletin/) and is updated as new books are received.

If you wish to review one of these books, please send an email to the Chair of the Publications Committee (Dezene Huber, huber@unbc.ca). You should briefly indicate your qualifications to review the topic of the book, and be able to complete your review within 8 weeks. Preference will be given to ESC members.

**Available**:
Ebertt Beeaff, D. 2025. Infinite Paradise: Witnessing the Wild, a Memoir. She Writes Press. ISBN: 978-1647429324

Burt, T. and Thompson, D. 2020. Curious About Nature: A Passion for Fieldwork. Cambridge University Press. ISBN: 9781108552172

Floate, K. 2024. Cow patty critters: An introduction to the ecology, biology and identification of insects in cattle dung on Canadian pastures. AAFC. ISBN: 978-0-660-44755-1

Frank, B., Glikman, J.A., and Marchini, S. 2019. Human–Wildlife Interactions: Turning Conflict into Coexistence. Cambridge. 9781108235730

Harbach, R.E. 2024. Composition and Nature of the Culicidae (Mosquitoes). CABI. ISBN: 978-1-80062-799-4

Vankosky, M.A. and Martel, V. 2024. Biological Control Programmes in Canada 2013-2023. CABI. ISBN: 978- 1-80062-325-5

Wilson, K., Fenton, A., and Tompkins D. 2019. Wildlife Disease Ecology: Linking Theory to Data and Application. Cambridge. 978-1-107-13656-4

**Guidelines**
Book reviews should be approximately 800-1200 words in length. They should clearly identify the topic of the book and how well the book meets its stated objective. Weaknesses and strengths of the book should be described.

Formatting of the review should follow that of reviews in recent issues of the Bulletin. A scan of the book cover (in jpeg or tiff format, ~500 kb) should be submitted with the review.

# INVITATION TO JOIN BUGQUEST!

Join Canada's BugQuest

Learn Locally. Contribute Nationally.

## Help us DNA barcode 'em all!

## About the Quest:

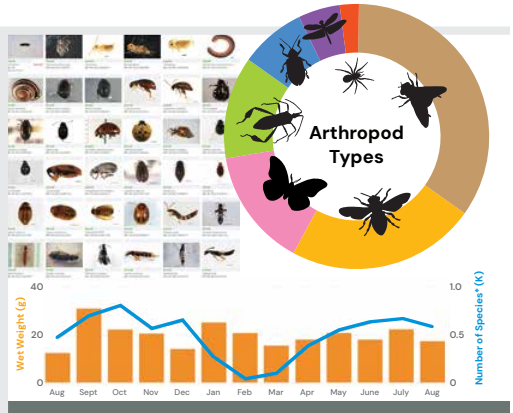
Starting in 2026, **BugQuest** will be deploying Malaise traps all across Canada to collect insects from key biodiversity areas, public science spaces, schools, and community sites.

We are inviting members of the **ESC** to deploy a trap and collect specimens that will help us document and better understand Canada's insect diversity. These identifications are made possible using DNA barcoding, a way to identify species by reading short segments of DNA.

The **BugQuest** project is coordinated by the Centre for Biodiversity Genomics at the University of Guelph, and builds on our previous nation-wide research programs. With advances in DNA technologies, we can now scale up biodiversity discovery in ways that were not previously possible – all we need are the bugs!

## What you will get:

- A ready-to-use BugQuest Kit at no cost (valued at ~$1,000)
- DNA sequencing, data analysis, and shipping are also free of charge
- Photos and identification of the insect species you collected
- A view of your site's insect diversity and how it compares to other sites across Canada
- You'll be a part of an exciting quest inspiring discovery and renewed appreciation for our unknown biodiversity.




*Examples of potential scientific results from Malaise trap data*

## What you will do:

We provide all the equipment, materials, shipping, and DNA analysis – you collect and send! Just set up the Malaise trap in few square metres of open space and add salt water, then simply change the Quest Bottle (a ~15 minute task) every week for 2 – 6 months.

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## Are you ready to join BugQuest?

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# FROM THE SECRETARY DESK

**Annual Meeting of Members**

76th Annual Meeting of Members and Board of Directors Meetings

The 76th Annual Meeting of Members for the Entomological Society of Canada will be held in conjunction with the Joint Annual Meeting (JAM) of the Entomological Societies of Canada and Manitoba scheduled to occur between October 4–7 at the Canad Inns (Polo Park) in Winnipeg, Manitoba. Meetings for both the outgoing and incoming Board of Directors will also take place during the JAM. Matters for consideration at any of the above meetings should be sent to the Secretary of the Entomological Society of Canada (see inside back cover for contact details).

**Highlights from the April Board of Directors Meeting**

The Board of Directors and Officers of the ESC met virtually on Wednesday 29 April 2026, with President Rob Johns chairing. The Board received reports from its Officers, Committee Chairs, and Regional Representatives, providing updates on their activities. These reports also served as a check-in to identify any items requiring Board consideration, input, or approval.

The following summarizes the main topics of discussion covered during the meeting.

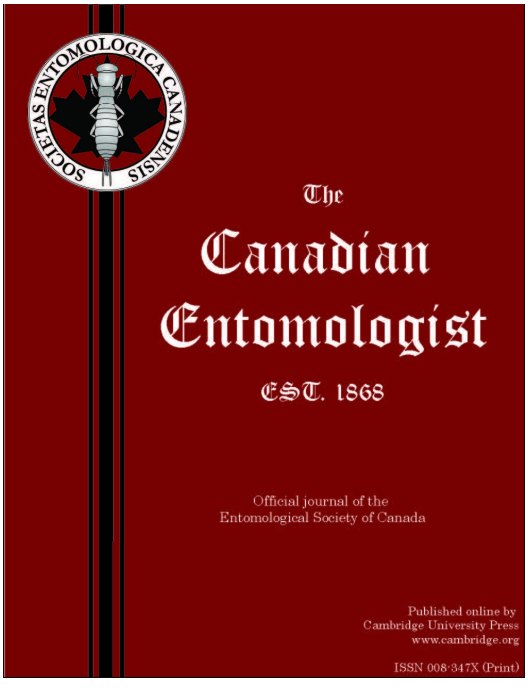
**Awards and nominations**

1st Vice President and Chair of the Achievement Awards Committee Rose Labbé reported that the committee had made its selections for the 2026 award nominees which were presented to the Board. Noting that the committee received a strong slate of nominations representing many worthy candidates. The breadth and quality of these submissions highlighted the exceptional excellence, dedication, and achievements of ESC members. The Board approved the committee's selections instructing the Chair to notify the award recipients.

Past-president Christine Noronha updated the Board on the progress of the Nominating Committee, indicating that candidates have been identified to run in each of the open positions (2nd Vice President, Director-at-Large, and EDI Director). The committee is preparing candidate write-ups to present to the membership in the upcoming plebiscite. The Board was also updated on the progress of the Student Awards Committee, which reported that a number of applications have been received and that the selection process will begin shortly.

**Editor search**
The Communications, Publications & Bilingualism Committee reminded the Board that the ESC needs to search for a new TCE Co–Editor-in-Chief, a CJAL Editor-in-Chief, and a Bulletin Editor. The committee noted that, for each role, it would be preferable to select individuals before the end of 2026 so they can spend time being mentored into their positions.

*Members are welcome to read the full BOD meeting minutes which can be found in the members area of the ESC website*


# EDITOR'S CORNER

***Editor in Chief Opportunity***

The Canadian Entomologist is seeking an active researcher in the field of entomology to join our team as co-Editors-in-Chief. The successful candidate would work closely with our other EiCs, Suzanne Blatt and Lisa Lumley. As co-EiC you will work collaboratively with the editorial team to make decisions on articles submitted to the journal and to grow the profile of the journal.

You will work along side the ESC board and Cambridge University Press to develop and implement a strategic vision for TCE that maintains the rigor and integrity of our society journal.

A successful co-EiC would have:

- an active publication record in the scope of the journal
- editorial or reviewing experience in scientific journals
- strong leadership and communication skills
- knowledge of the on-going technological shifts that could impact scientific publishing (e.g. AI, Open access, Open data)

This is a volunteer position with a 6-year term. Training of the new EiC will be provided. Informal inquiries about the role and responsibilities of this position are encouraged (amanda.roe@nrcan-rncan.gc.ca)

To apply, please provide a one-page letter of interest outlining your fit and interest in the co-EiC role to Amanda Roe by **30 June 2026**

Eastern tent caterpillar (*Malacosoma americanum*). Photograph by A. Roe.

Canadian Journal of
ARTHROPOD IDENTIFICATION
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A product of the Biological Survey of Canada & the Entomological Society of Canada

*CJAI* provides richly illustrated, peer-reviewed, open-access tools for identifying insects, arachnids and other arthropods in Canada. Check out this recent article on our website.


Key to the New World genera of Euphorinae (Hymenoptera: Ichneumonoidea: Braconidae)

Michael Sharkey,
Scott Shaw,
Cornelis van Achterberg,
Y. Miles Zhang,
Donald L. J. Quicke and
Julia Stigenberg

# ANNUAL PHOTO CONTEST

The 22nd Annual Photo Contest to select images for the 2027 cover of the Bulletin of the Entomological Society of Canada is now underway.

**Contest rules**: Photos of insects and other arthropods in all stages, activities, and habitats are accepted. To represent the scope of entomological research, we also encourage photos of field plots, laboratory experiments, insect impacts, research activities, sampling equipment, etc. Photos should, however, have a clear entomological focus. Digital images must be submitted in unbordered, high-quality JPG format, with the long side (width or height) a minimum of 1500 pixels. Entrants may submit up to five photographs. A caption must be provided with each photo submitted; photos without captions will not be accepted. Captions should include the locality, description of activity, if the main subject is other than an insect (if appropriate), and any interesting or relevant information. Captions should be a maximum of 40 words. The entrant must be a member in good standing of the Entomological Society of Canada. Photos must be taken by the entrant, and the entrant must own the copyright. The copyright of the photo remains with the entrant, but royalty-free use must be granted to the ESC for inclusion on the cover of one volume (4 issues) of the Bulletin, and on the ESC website, and in various social media posts by the ESC (credited to the photographer, of course). Rather than a judging committee, the photo contest organizer will open voting to our members on a website.

Photographers of the top three photos chosen will be awarded the following prizes: 1st: $200 gift certificate for Henry's Camera. 2nd: $100 gift card for Henry's Camera. 3rd: $50 gift card for Henry's Camera. Submission deadline is 31 October 2026. Submit photos at this URL: https://pollunit.com/en/polls/escphotocontest2026

# DONORS

The ESC and ESC Scholarship Fund would like to thank and acknowledge all of the very generous donors to their various scholarship and award funds over the past year. Donations are very important as they help support student research in entomology, and donations to the scholarship funds allow these to remain self-sustainable. Donations to the ESC (non-tax-deductible) and ESC Scholarship Fund (tax-deductible) can be made at any time by cheque or online. Please see the Members' Area of the ESC website for details: (https://esc-sec.site-ym.com/donations/).

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... and those who prefer to remain anonymous

# NOMINATIONS

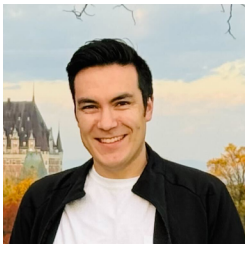
**Nomination for ESC Board of directors**

The following candidates have been identified by the nominating committee as willing to stand for election. Their names and statements will appear on the plebiscite webpage, which will be active from early June to mid-July, for voting to select an individual who will stand in the election at the Annual members Meeting in October 2026. ESC members are reminded that, under Bylaws 16 and Standing rule V12, members may submit additional nominations for these positions as long as they are submitted to the secretary at lease 21 days prior to the Annual Members Meeting and are signed by not less than 5% of the members of the Society.

**2nd Vice President**

**Joe Bowden** - Research Scientist, Natural Resources Canada, Canadian Forest Service, Corner Brook, NL.
Chercheur/Ressources Naturelles Canada, / Service canadien des forêts, Corner Brook, NL, Canada

**Tyler Wist** - Research Scientist, Field Crop Entomology, Science and Technology Branch, Agriculture and Agri-Food Canada, Saskatoon, SK.
Chercheur scientifique / Entomologie des Grand Cultures, Direction des sciences et de la technologie, Agriculture et Agroalimentaire Canada, Saskatoon, SK.



**Boyd Mori** - Associate Professor, Agricultural and Ecological EntomologyDepartment of Agriculture, University of Alberta

## EDI Director

**Anne-Sophie Caron** - Faculty Lecturer, Biology Department, Vanier College, Montreal QC.

**Julia Mlynarek** - Entomologiste, collection entomologiques et recherche, Insectarium de Montreal. Montreal QC.

## Director-at-Large

**Carol Frost**- Associate Professor, Faculty of Agricultural, Life and Environmental Sci - Renewable Resources Department. University of Alberta, Edmonton, AB.

**Malkie Spodek**- Malkie Spodek- Senior Scientist, Entomology, Adjunct Professor, Department of Biological Sciences, Brock University, Cool Climate Oenology and Viticulture Institute (CCOVI), St. Catharines, ON.

# MEETING ANNOUNCEMENTS

**13th European Congress of Entomology**
Tours, France 28 June -3 July 2026
https://www.ece2026.org/

**Joint Conference SIP and IOBC: Microbial and Nematode Control of Invertebrate Pests**
s'Hertogenbosch, The Netherlands, 2-6 August 2026
https://iobc-wprs.org/meeting/sip-iobc-wprs-2026/

**IOBC-WPRS, Benefits and Risks of Exotic Biological Control Agents**
Trento, Italy 14-17 September 2026
https://sites.google.com/fmach.it/brebca-2026

**JAM Entomological Society of Canada and Entomological Society of Manitoba**
Winnipeg, Manitoba 4-7 October 2026
https://entsocmb.ca/2026_JAM/JAM.html

**Entomology 26 (Annual Meeting of the Entomological Society of America)**
Columbus, Ohio 8-11 November 2026
https://www.entsoc.org/events/annual-meeting

**11th International Congress of Dipterology**
Zagreb, Croatia, 10-16 July 2027
https://dipterists.org/icd.html

**Annual Meeting of the Entomological Society of America**
Orlando, Florida , Ohio 14–17November 2027

**XXVIII International Congress of Entomology**
Cape Town, South Africa, 17-21 July 2028
https://www.icecouncil.org/upcoming-congress

**JAM Entomological Society of Canada, Société d'entomologie du Québec and Entomological Society of America**
Montréal, 22-25 October 2028

# THE LAST WORD

## DON'T LET THE TAIL WAG THE DOG

A recent article in the New York Times (Fagin 2025) reported on how new technology is helping answer age-old questions regarding the apparently long, tortuous routes of migrating lepidoptera, and, as you might expect, there is some Canadian content. Monarch butterflies (*Danaus plexippus*), equipped with tiny BlūMorphos™ radio tags were released by scientists from Environment Canada, at a Long Point, Ontario site and have been tracked all the way to sites south of Mexico City. This is a tremendous feat of technology, citizen science, ecology and plain-old curiosity.

Those of you who know me, recognize that I am a bit of a sucker for technology. I have built (or had built for me) and employed, air pressure chambers to study oviposition decisions in parasitic wasps (Roitberg et al., 1993), flight mills to study spatial dynamics of gall flies (Roitberg 1988), caged-in human domiciles to study emigration decisions by mosquitoes (Zappia et al. 2018) and too many others to cite here. The kid in me loves to play with new tools and ask new questions or rephrase old ones because I have thought of new ways to test my ideas. Hell, I even use AI technology to generate illustrations for this very column.

And, here is where I go off on a rant. I don't want to sound like some old-fart scientist who fondly remembers the good old days when I had to walk 10 km uphill, each way, to my lab, when no one had mobile phones and all statistics were Fisherian and we were all happy. No, my call to you here is to avoid the temptation of letting the dog be wagged by the tail or some appropriate entomological appendage metaphor, cerci, furcula, etc.

It's good to keep in mind that fast, shiny new tools don't always perform better than slow, old ones. I recall a paper by Hochberg and colleagues wherein they evaluated a series of phenology models to predict development of pea aphids (*Acyrthosiphon pisum*) (Hochberg et al. 1986). It turned out that while the more sophisticated models fit the data significantly better than their simple sisters, they were no better at predicting aphid development. Why? Because the shiny, new models had to make (possibly erroneous) assumptions about regions of the curves where no data existed. Sometimes simple is better.

Returning to my rant, our job as scientists is to better explain the world that we live in and doing so often involves selecting tools to achieve our goals; however, we should never let tool worship distract us from our job. Long ago, I discovered that mathematical tools provided me a means of approaching difficult questions in insect ecology and evolution but it was not an easy undertaking. When the questions became too difficult for me to solve due to my limited mathematical skills, I reached out to those who were far more adept than me (thank you Marc Mangel and others) and admitted my deficiencies. And, while this might have been a blow to my ego, I reminded myself of two important facts: (i) I was hired as a biologist to work on biological problems and (ii) it was never meant be about the math, it was always about solving biological problems; the dog, not the tail.

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Let's not get too enamoured of the tools we use or dismiss a study because high tech has been employed. Don't accept the conclusions of a study simply because really cool tools were used or really fancy statistics were employed; or, vice versa. On many an occasion have I heard colleagues disparage a study because it wasn't conducted in

the 'real world' and yet no one ever disparaged Einstein's brilliant thought experiments, which clearly could not be conducted in the real world, for example when he posited riding a bicycle at the speed of light. It was never about the bicycle, it was about relativity.

Let me come at this issue from another angle: If you do choose to use a particular tool to conduct your work, make sure that you understand your tool, its strengths and its shortcomings. As an example, when I build a mathematical model or a computer simulation or conduct a biological experiment, I work very hard to ensure that a proper control (or controls) is/are employed. If, for example, I develop a model to explicate feeding decisions in some focal insect, I will initially choose a set of parameter values where I know what the answer must be. For example, I might set food availability at zero and if my focal avatar arthropod doesn't starve, then I know that there is something wrong my model. In other words, I work hard to ensure that I don't get the right answer for the wrong reasons. The same goes for a lab or field experiment, which are also abstractions of the real world; it's easy to get it wrong even with living creatures. I regularly walk forest trails hoping for the 'light bulb' to turn on; I have spent many walking hours trying to come up with a perfect design. I'm not always successful but one can always hope.

On top of being enthralled by technology, I have also been a sucker for science fiction, either in book or cinematic form. However, when I look back at some my favourite sci-fi books and films, they weren't about the technology, they were about the human condition. For example, Moon the 2009 film, staring Sam Rockwell, is a great film about a solitary man who faces an existential crisis as he nears the end of his tenure at a lunar site (Jones 2009). The film doesn't feature a lot of high-tech toys but it is very compelling - as noted by reviewer Damon Wise (Wikipedia 2009), this is a film about what it means and takes to be human. It was never about the tail, it was about the tale.

Best wishes for an enjoyable and productive summer.

Bernie

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