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# Boreus

Newsletter of the Entomological Society of British Columbia





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### Cover Sketch

*Boreus elegans* (Mecoptera: Boreidae), one of the more conspicuous snow scorpionflies in B.C. Larvae and flightless adults live in, and feed on, moss and clubmoss. Adults appear in the fall and are active on snow on warm winter days. Cover sketch credit Ward Strong and Robert A. Cannings.

### Cover Photographs

Greater Night-stalking Tiger Beetle ( <i>Omus dejeani</i> ), taken on Denman Island, B.C. Photograph by Jennifer Heron.	Helliwell Provincial Park, May 2012. Photograph by Jennifer Heron
Photographs taken in the Peace Region, BC. Photographs by Jennifer Heron	



The Entomological Society of British Columbia is a scientific Society founded in 1902 for the advancement of entomological knowledge in the province.

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## Become a Member!

**Membership** of the Entomological Society of B.C. is available to anyone interested in entomology. Annual dues are due **March 30<sup>th</sup>** of each year.

Join or renew your membership online via the Society's website <http://entsocbc.ca/membership/>.





## Society News

### Stanley Park – ESBC Bioblitz 2024

On Saturday April 27<sup>th</sup>, a team of ESBC members headed down to Stanley Park for the annual bioblitz event. The Stanley Park Bioblitz was organized by the Stanley Park Ecological Society (SPES) as part of the City Nature Challenge.

Rob McGregor (Outreach Chair), Matt Tsuruda (Graduate Student Director) and Joyce Leung (Editor of *Boreus*) participated on behalf of ESBC. They were joined by Karen Needham (Curator of the Spencer Entomological Collection) and her students, Naomi Higo (Institute of Urban Ecology at Douglas College), and several students from ESBC President's Juli Carrillo's lab.

So, although the weather was not ideal, there was a strong entomological presence on the shores of Beaver Lake. The cool, wet weather did not deter the team from collecting and identifying numerous insects. Passers by in the park stopped by the ESBC table to view specimens, to chat about insects and to get further information about the work of the Society. The bioblitz was an unmitigated success and ESBC expects to collaborate with SPES for future events.



*Enthusiastic participants in the 2024 Stanley Park Bioblitz: Will Schep, Matt Tsuruda (ESBC Graduate Student Director) and Paul Fisher (Technician in ESBC President Juli Carrillo's lab) (Photo by Joyce Leung).*



## ESBC Symposium & AGM 2024

The ESBC Symposium & AGM is taking place this year on **October 4<sup>th</sup>-5<sup>th</sup>** at **UBC's Vancouver campus**. Details will be posted on our website at [www.entsocbc.org](http://www.entsocbc.org) closer to the date. Stay tuned!



*Aphids doing their part for weed control on a cranberry farm in Pitt Meadows.  
Photo by Joyce Leung*



## Featured Article

### *Sympetrum internum* (Odonata: Libellulidae) in British Columbia, with particular reference to Vancouver Island

*Rob Cannings*

*Curator Emeritus of Entomology, Royal BC Museum*

Dragonflies in the genus *Sympetrum* (Meadowhawks) are small to medium-sized (30-40 mm long); males are mostly red when mature, but one, *S. danae*, is black. Females are mostly yellow-brown but some are red like the males. Young adults of both sexes are yellowish. Most fly from mid-summer into the autumn and can be abundant around marshy ponds and lakeshores and in nearby meadows. Ten species live in British Columbia (BC) (Cannings 2002).

*Sympetrum internum* Montgomery (Cherry-faced Meadowhawk) is recognized by its unmarked thorax, black legs, the saw-toothed black markings on the side of abdomen, and its reddish face. The veins at the bases of the wings, or even most of wings, are usually yellow-orange, although in some specimens they are darker. Adult males and some females are bright red but most of the latter are tan, and more likely than males to have the wing bases washed with orange. Identification of some specimens requires examination of the hamules (part of the male secondary genitalia ventrally on abdominal segments 2–3) and the subgenital plate in the females.

The species is widespread across much of North America, from Alaska and Yukon east through the Northwest Territories to Newfoundland, south to Kentucky, Oklahoma, New Mexico, Utah, and California (Paulson 2009, 2011). It is common throughout the BC Interior and is especially abundant in the southern dry valleys and the Cariboo-Chilcotin plateau. It is much less common on the south coast. *Sympetrum internum* typically lives around shallow, marshy ponds and lake edges that dry up in summer. Females usually oviposit in tandem with males (the pairs often in groups) or sometimes alone, often dropping the eggs onto the surface of dry pond basins. The eggs overwinter and hatch in the spring after the basins fill with winter rains or snow meltwater. As Paulson (2009) notes, sometimes pairs lay eggs on wet lawns; I have seen this behaviour several times in BC and Alberta. These eggs clearly do not result in viable naiads. In BC, adults fly from June to October. Across western North America, many suitable habitats have dried up because of drought and this meadowhawk has disappeared from parts of former range (Paulson 2009).

The Royal BC Museum's acquisition of new Odonata specimens has declined since 2005 when large-scale provincial surveys ended. Data from the RBCM and Beaty





Biodiversity Museum (University of BC) collections show that records of *S. internum* from west of the Coast Mountains were relatively scarce before the advent of digital photography and popular online identification resources such as iNaturalist (<https://inaturalist.ca>). The specimens from the south coast in these collections were mainly from the eastern Fraser Valley; some came from only a few localities in the Vancouver area. Although Kenner (2000) called the species “common” in Lower Mainland, it was certainly scarcer there than some other *Sympetrum* species. No specimens were known from the Sunshine Coast to the north or from Vancouver Island and the Gulf Islands to the west. Since 2020, the species has been recorded numerous times on the Sunshine Coast, especially around Sechelt. The first definite record in that region, in my opinion, is a male at Sechelt on 11 September 2020 (iNaturalist 59328483). Paulson (2009) states *S. internum* is “sparse” along the Pacific coast; it is scarce and local in western Washington (D. Paulson, pers. comm.).

I and many other entomologists observed and collected Odonata extensively on Vancouver Island for decades and never recorded *S. internum* there. However, on 21 August 2010, Jeremy Gatten found and photographed a male in Central Saanich and observed several more during the following week (Gatten 2012). No more were reported on Vancouver Island until 2022, when several observations appeared on iNaturalist. *Sympetrum internum* is not always identifiable from photographs, but two observations by Mark Wynja, with multiple pictures (from different angles) of each, are unmistakable. Mark photographed a single male at the Mount Washington ski resort west of Courtenay on 31 August 2022 (iNaturalist 133244227) after Mike Yip had found the species there on 23 August. Mark recorded a second male at Qualicum Beach on 7 September (iNaturalist 134191955) and Stewart McQuillan photographed another at Courtenay on 14 October 2022 (iNaturalist 138911734). Three other observations in 2022 are probably of male *S. internum*, although the images are not definitive: Errington, 17 August (iNaturalist 131296831); Seal Bay, Comox, 11 September 2022 (iNaturalist 134690608); Victoria, 22 September (iNaturalist 136082588). An intensive study of biodiversity on Galiano Island (About | Biodiversity Galiano ([biogaliano.org](http://biogaliano.org))) has prompted the posting of hundreds of insect observations on iNaturalist over the past several years, but *S. internum* has not been reported there.

The increasing numbers of observations of *Sympetrum internum* on the BC south coast might be attributed to both the heightened activity of those interested in documenting biodiversity on iNaturalist and an actual increase in the populations of the species in the region. The absence of records before 2010 from Vancouver Island, where Odonata have been collected for many years, strongly suggests a significant range expansion. As *S. internum* is mostly associated with warm, dry habitats, climate warming might be playing a role in these population changes.



### **Acknowledgements**

Syd Cannings read an early version of this note. Dennis Paulson provided insight. Photographers who post their observations on iNaturalist can play an important role in our increasing understanding of insect distribution. I appreciate their contributions and enthusiasm.

### **References**

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*Sympetrum internum* (Cherry-faced Meadowhawk), male.  
Photo: George Doerksen, Royal BC Museum.





## Kudos!

### BC Represents at the PBESA



*Left: Juli and Hannah received the Pacific Branch Distinguished Achievement in Teaching Award and Student Award respectively. Right: Hannah and her helpers bagging some blueberry plants as part of her research.*

The Pacific Branch Entomological Society of America (PBESA) annual meeting took place in Waikoloa, Hawaii on April 16<sup>th</sup> 2024. BC entomologists did not go home empty handed after the meeting, as members Juli Carrillo and Hannah Anderson took home prizes in recognition for their work in teaching and research respectively.

Juli Carrillo received the Pacific Branch Distinguished Achievement in Teaching Award. This award represents excellence in innovations in developing new courses, programs, and teaching methods, and commitment and contributions to entomology and the society. Juli is an Associate Professor in the Faculty of Land and Food Systems at the University of British Columbia, where she leads the Plant-Insect Ecology and Evolution (PIEE) Lab. Her research focuses on using ecological theory to support biodiversity in agricultural and other managed systems. As part of her teaching duties, she teaches Insects in Agroecosystems and Conservation Agricultural and Biodiversity Monitoring, a field-based intensive summer course located at UBC Farm to provide training in real world biodiversity monitoring techniques and assessments. She also co-teaches Audio



Storytelling, a course that supports students to develop and use a journalistic framework to tell compelling scientific stories.

At the same meeting, Hannah Anderson, a second year MSc student in the PIEE Lab, received the student award for her talk, “Not just the birds and the bees: Unsung moth pollinators in berry agroecosystems”. Her research has focused on a potentially important, but incredibly understudied, group of potential pollinators in agroecosystems – moths. While most people are aware of the importance of bee pollinators for berry crops, previous evidence suggested that nocturnal pollination could be important in these systems as well. Yet current recommendations for growers include spraying pesticides at night, ironically to reduce impacts on daytime pollinators. Hannah surveyed five commercial blueberry and strawberry farms in the Lower Mainland of BC to determine if moths were indeed present in these systems, and also whether they carried berry pollen.

Hannah captured moths using light traps, which involved sampling in the middle of the night with a bright light and a white sheet. Hannah and her undergraduate technician, Eva Burghardt, identified moths to species when possible and found an assemblage previously unknown to be pollinators carrying pollen from a variety of plant species including berry crops. They confirmed the presence of pollinating species of moths such as those in the family *Sphingidae* in berry agroecosystems in BC. They also identified some new moths with pollen that had not previously been documented as potential pollinators. They found clear evidence that moths carry berry pollen on their bodies, which suggests they may be unrecognized pollinators for managed and wild berries. Hannah is currently conducting a follow-up study at UBC Farm to determine the relative contribution of nighttime pollination to berry yield.

Congratulations Juli and Hannah!



## Graduate Students Graduating

Defended or planning to defend? Why not present your work in the Boreus? This is an excellent opportunity for graduate students to share their research. Send submissions to [boreus@esbc.ca](mailto:boreus@esbc.ca).

### Claire Gooding, MPM

- Title - Behavioural responses of off-host ticks (Ixodidae) to predators and pathogens
- Supervisor - Dr. Gerhard Gries, Professor, Senior Supervisor  
 Dr. Jane Fowler, Assistant Professor, Supervisor  
 Dr. Shaun J. Dergousoff, Research Scientist, External Examiner

Abstract - Ticks spend most of their life in moist off-host microhabitats, where they are protected from desiccation but susceptible to predators and entomopathogens. I investigated whether ticks avoid chemical cues indicative of ant predators and the entomopathogenic fungus *Beauveria bassiana* (*Bb*). In olfactometer bioassays, *Ixodes scapularis* ticks were significantly deterred by semiochemicals originating from the poison and Dufour's glands of *Formica oreas* thatching ants. Formic acid and hydrocarbons released from these glands deterred ticks but attracted worker ants. Contrary to my prediction, females and males of the ticks *Amblyomma americanum*, *Dermacentor variabilis*, *Ixodes ricinus*, and *I. scapularis* sought, rather than avoided, *Bb*. In further bioassays, *I. scapularis* oriented towards both harmful *Bb* and harmless soil-dwelling fungi, implying that fungi – regardless of their pathogenicity – signal habitat suitability to ticks. Responses to *Bb* were mediated by contact chemoreception of metabolites associated with cellulose breakdown. Ticks were deterred by the common fungal metabolite 2-methylisoborneol.

Official completion date – Defended April 22, 2024





### Emma Kovacs, MPM

Title - Host foraging cues of Stable flies, *Stomoxys calcitrans*

Supervisor - Dr. Gerhard Gries, Professor, Supervisor  
 Dr. Gordon Rintoul, Associate professor, Committee Member  
 Dr. Tim Lysyk, Research Scientist (retired), Agriculture and Agri-  
 Food Canada, Examiner

Abstract - I investigated two types of cues that foraging stable flies, *Stomoxys calcitrans*, may exploit to locate cattle hosts: (1) static electric fields and (2) cattle breath gases and volatiles. Using a non-contacting voltmeter, I show that the body surface of a vertebrate host has a patchy distribution of electrostatic potentials, implying the presence of corresponding electric fields. In bioassays, I show that objects presenting distinct electric fields attract stable flies as well as mosquitoes and ticks. Using laser Doppler vibrometry recordings and behavioral bioassays, I further show that the stable flies' arista sense electric fields. Both cattle breath gases [carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>)] and cattle breath volatiles affect host-foraging behavior of flies. The flies' behavioral responses to CH<sub>4</sub> are contingent upon their prior or current exposure to CO<sub>2</sub>. I further show that synthetic breath volatiles alone, and interactively with CO<sub>2</sub> and CH<sub>4</sub>, affect foraging decisions by stable flies.

Official completion date – Defended April 23, 2024

### Saif Nayani, MPM

Title - Oviposition and host foraging cues of stable flies (*Stomoxys calcitrans*), and their potential as vectors of microbial host pathogens

Supervisor - Dr. Gerhard Gries, Professor, Senior Supervisor  
 Dr. Jane Fowler, Assistant Professor, Supervisor  
 Dr. Brandon Smythe, Research Assistant Professor, External  
 Examiner

Abstract - Stable flies, *Stomoxys calcitrans*, are blood-feeding ectoparasitic pests of cattle. I studied mechanisms that underlie oviposition and host foraging behaviour of stable flies and investigated whether they transmit pathogens. I show that odor and moisture of oviposition sites play distinguishable functional roles in the close-range attraction of gravid flies and their propensity to oviposit, and that ammonia – alone or



with carbon dioxide – attracts flies and induces oviposition. I further show that several *Staphylococcus* microbes in the bovine skin microbiome attract host-foraging flies, and that ammonia and odorants emitted by these *Staphylococcus* microbes attract flies. Finally, I show that stable flies are attracted to the skin-dwelling, mastitis-causing bacterium *Staphylococcus aureus*, and that they transmit *S. aureus* from infected blood to sterile blood. My data infer the existence of a positive feedback loop. As *S. aureus* bacteria of afflicted cows proliferate, they attract even more flies which, in turn, worsen the infection.

Official completion date – Defended January 25, 2024

### Asim Renyard, PhD

Title - Communication and foraging ecology of ants

Supervisor - Dr. Gerhard Gries, Professor, Senior Supervisor  
 Dr. Jennifer Cory, Professor (Retired), Supervisor  
 Dr. Robert Higgins, Professor, Supervisor  
 Dr. Norbert Haunerland, Professor, Examiner  
 Dr. Claire Detrain, Research Director, External Examiner, Unit of Social Ecology Université Libre de Bruxelles

Abstract - Ants coordinate group tasks such as nest defense and foraging with their nestmates. My thesis unravels signals and cues underlying these tasks. In part 1, I investigate how ants coordinate defense. I characterized pheromonal and vibratory alarm signals of carpenter ants, *Camponotus modoc*, using gas chromatography-mass spectrometry, laser Doppler vibrometry, and video recordings. In bioassays, I then tested the ants' responses to synthetic alarm pheromone and playback of vibratory signals. In response to playback of vibratory signals, ants ran rapidly, or froze, but did not approach the vibratory signals. Exposed to alarm pheromone, ants frequently visited the pheromone source. However, concurrently exposed to both alarm pheromone and vibratory signals, ants visited the pheromone source less often but spent more time 'frozen'. The ants' modulated responses to bi-modal signals seem adaptive to avoid predation by avian predators.

In part 2, I investigate how ants locate and assess food sources, and whether acquired knowledge about the ants' nutrient preferences can be applied to curb populations of invasive pest ants. I demonstrate that food sources rich in carbohydrates or proteins prompt long-distance attraction of *C. modoc* worker ants, and that attraction of ants to plant inflorescences is mediated by specific, rather than shared, floral odorants. I show



that *C. modoc* workers deposit (2S,4R,5S)-2,4-dimethyl-5-hexanolide as their trail pheromone to guide nestmates to food sources. I further show that workers of European fire ants, *Myrmica rubra*, and *C. modoc* discern between mono-, di- and tri-saccharides, and between essential amino acids (EAAs) and non-essential amino acids. In a field experiment, colonies of *C. modoc* and *M. rubra* preferentially consumed EAAs and sucrose, respectively, with no sustained shift in preferred macro-nutrient over the course of the foraging season. Importantly, the presence of a less preferred macro-nutrient in the nutrient bait did not diminish the bait's 'appeal' to foraging ants in diverse ant taxa. In a further field experiment in a public park infested with *M. rubra*, I show that treatment colonies provided with a lethal liquid bait (4.55% sucrose; 1% EAA; 1% boric acid) significantly declined, whereas control colonies provided with the corresponding non-lethal bait did not.

Official completion date – Defended April 19, 2024

### Kelly Wang, MSc

- Title - Historical Trends in Cranberry Pest Abundances and Their Dependence on Temperature
- Supervisors - Dr. Juli Carrillo, Associate Professor, Co-Supervisor  
Mr. Todd Kabaluk, Research Scientist – Co-Supervisor  
Dr. J. Williams, Committee Member  
Dr. R. Sargent, Committee Member  
Dr. Michelle Franklin, Research Scientist, Committee Member

**Abstract** - Pest monitoring is crucial for early pest detection so that growers can engage in effective crop protection and management actions. Insect pest levels and crop losses are expected to rise alongside a warming climate. However, the effects may be species dependent, affecting our ability to generalize crop-specific risks. Canada is the second largest producer of cultivated cranberries (*Vaccinium macrocarpon*) globally, with British Columbia (BC) and Quebec accounting for approximately 95% of the Canadian market. The blackheaded fireworm (*Rhopobota naevana*) is a major cranberry pest and has a long monitoring history in BC by integrated pest management (IPM) practitioners. In this study, I first examined whether daily minimum temperature and accumulated degree days (ADD, daily temperature gained overtime) for *R. naevana* increased during the study in the Lower Mainland of BC (1991 – 2020). Then, I aggregated 30 years of long-term IPM monitoring data from various cranberry farms and climate records to determine associations between the ecology of *R. naevana* and temperature. Specifically, I examined whether ADD influenced the date of initial emergence time, abundance of emerging larvae, and the date growers first sprayed to control *R. naevana*.

Annual ADD and daily minimum temperature, as measured by regional weather stations, did not increase during the duration of the study, although there were clear periods of high





and low temperatures associated with the timing of the El Niño-Southern Oscillation. I did not detect an association between ADD and date of initial emergence. However, ADD was associated with emerging larvae abundance and first spray date. Warmer years with higher ADD could lead to higher spring larvae emergence and delayed first spray date. The high variability in the dataset due to differences in farms surveyed within and across years, the limited resolution of weather stations, and the potential for sampling error and observer bias within a multi-year data set could limit our ability to adequately detect some temperature driven effects. Longitudinal observations from the same set of cranberry farms over several years would likely reduce sources of external variation and help to further our understanding of the relationships between pest outbreaks, climate, and ecosystem interactions.

Official completion date – Defended June 26<sup>th</sup>, 2024

## In Memoriam

### Lisa Poirier (1934-2023)

Lisa Poirier passed away suddenly and unexpectedly on 15 October 2023. She was an outstanding teacher, mentor, researcher, entomologist, and friend. She was a rich source of entomological knowledge and engagingly answered Entomology questions from students, colleagues, and the public alike. Lisa was an important member of the entomological community in British Columbia, Canada and beyond.

Lisa was born in North Cobalt, Ontario on 7 May 1963. Her mother was British Indian—born of British parents but raised in India. She moved to England just before the outbreak of WWII. She met Lisa's father, a Canadian Serviceman, during the war and moved to Canada after the war. Lisa's father was a school principal. She had two much older sisters, Hilary and Caroline, so she was the baby of the family. Lisa was very close to her parents; she was proud of her family, and she traveled to England a few years ago to donate her grandfather's medals—awarded in India in the early 1900s—to a museum.



*Photo source: UNBC*



Lisa met her husband Mike in high school in 1979 and they were together until her death. They went to university together and got married after she graduated with a BSc in Biology and Ecology from the University of Guelph in 1984. After the wedding, they piled all their belongings into their car, including one large and very opinionated cat (who howled the whole way over), and drove to BC. Sylvester (the cat) got sick on the long drive, and they spent all their wedding gift money on saving him. He lived to a ripe old age.

Lisa completed the Master of Pest Management Program at Simon Fraser University in 1989, and immediately enrolled in a PhD program under the supervision of Dr John Borden. Lisa's PhD dissertation (1995) focused on the role of oral exudate in western spruce budworm. She was a Board-Certified Entomologist, a professional designation offered by the Entomological Society of America. Between 1996 and 2001, she held positions as Sessional Instructor at the University College of the Fraser Valley and the University of British Columbia, and as Senior Laboratory Technician at UBC.

In 2001, she was recruited to the University of Northern British Columbia starting as an Instructor V, primarily to cover sabbatical leaves for Forest Health faculty. This required knowledge of both pathogens and insect pests—material normally co-taught by a pathologist and an entomologist. Lisa was one of the few people who could handle both, and she permanently took over the Forest Entomology part when Staffan Lindgren retired in 2015. From the beginning, Lisa demonstrated an incredible versatility and breadth in teaching, making her indispensable to the biology and forestry degrees. She was a passionate instructor and taught 18 different undergraduate courses, one graduate course, and supervised five independent courses or reports. She won an Excellence in Teaching award at SFU while still a graduate student. At UNBC, students nominated her twice for excellence in teaching. One of her former students wrote: *“Lisa was always so kind and supportive of me as a student, and I will always credit her with teaching me how to write scientifically in her ecology class. She was an excellent teacher who really cared about her students. She was also just an incredibly kind person”*.

In 2007 Lisa was tenured and promoted to Assistant Professor, and she was promoted again in 2018 to Associate Professor. She contributed greatly to the university by serving on a number of committees. When she took over primary responsibility for the Entomology course in the Biology program, she put together an extensive lab guide (<https://pressbooks.bccampus.ca/unbcbiol322/>) which was provided to students. She also brought order to the insect teaching collection, and a plaque has been erected to commemorate her efforts. Lisa also served her profession, notably as President of the Entomological Society of British Columbia 2018-2019, and by organizing and contributing to conferences, e.g., the Western Forest Insect Work Conference. Lisa was passionate about Entomology and frequently shared her expertise by responding to questions from the public or media and giving presentations in the community. She was also an e-mentor for the Ms. Infinity program of the Society for Canadian Women in Science and Technology, encouraging female youth into STEM fields.

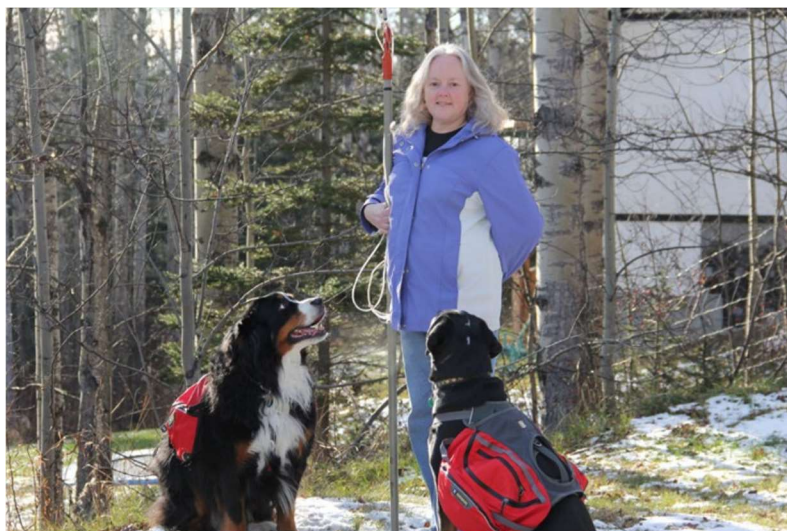


Lisa was author or co-author of 15 peer reviewed publications, with two more upcoming, and she presented numerous papers at conferences on a variety of topics, including mosquito biology, biodiversity, and plant-insect interactions. Her work in the biodiversity of insects in downtown Prince George versus in the forest was particularly important as most biodiversity surveys tend to focus on non-urban areas or parks, and neglect downtown areas. She supervised three graduate students and was a member of the supervisory committee for an additional 11 graduate students.

Lisa inherited her love for animals from her mother, who was always surrounded by various animals; for example, her mother trained Siberian Huskies for the Iditarod and other dog races. Lisa's mother was also always rescuing animals on the point of death to give them "a nice place to die", but they usually ended up surviving and thriving under Lisa's mother's care. Consequently, Lisa grew up with a collection of animals, including monkeys! This instilled in her a great life-long love of animals. She loved giant dog breeds, in particular, she raised Bernese and Greater Swiss Mountain Dogs, which were socialized by bringing these beautiful dogs to UNBC for meet-and-greets with faculty and staff. Her dogs, as well as Mike, were always her research assistants and traveled deep into the bush on trap and insect collection expeditions. She always insisted that everyone, particularly the dogs, had high quality packs so they could carry their own water, food, and snacks. Lisa also rescued numerous cats, and even birds. Joshua, her cockatiel, was 35 years old when he died earlier this year, one year short of the Guinness Book of Records.

Lisa's passing was announced by UNBC by lowering the flags at half-mast. She is greatly missed by her many friends and colleagues.

*Gail Anderson and Staffan Lindgren*



*Photo by M. Poirier*





## Robert S Hodgkinson (1950-2024)

After a long battle with stomach and brain cancer, Robert Sidney Hodgkinson passed away on March 26, 2024, surrounded by his loving family. He was born June 1950 in Ottawa Ontario, where he grew up. He received a BSc in natural science and biology from Lakehead University. He then worked at the Chemical Control Research Institute of Forestry Canada from 1973 to 1976 in Ottawa, Ontario. He then moved to BC where he enrolled in the Master of Pest Management (MPM) degree program at Simon Fraser University (SFU). He briefly worked for the B. C. Ministry of



*Photo source: BC Ministry of Forests*

Agriculture 1978-1979 before taking a position as Regional Forest Entomologist for the BC Forest Service from 1980 until his retirement in 2015. Among his many roles there, he annually taught Spruce Beetle survey and management techniques to forestry practitioners. Robert was a true forest entomologist with both a passion for entomology and for forestry — he had an advanced silviculture diploma from the University of British Columbia (UBC) and he was a Registered Professional Forester (RPF) and a Registered Professional Biologist (RPBio)— and he was totally in tune with forest policy. He will always be remembered as "Mr. Spruce Beetle" as he pioneered much of the survey and treatment procedures we still use. Robert was respected throughout the province and played a pivotal role in the BC Forest Health community. He could always be counted on to collaborate and help his colleagues in research or operational projects. After he retired from the BC Forest Service, he joined Industrial Forestry Service Ltd. (IFS) in Prince George as Forest Entomology Associate.

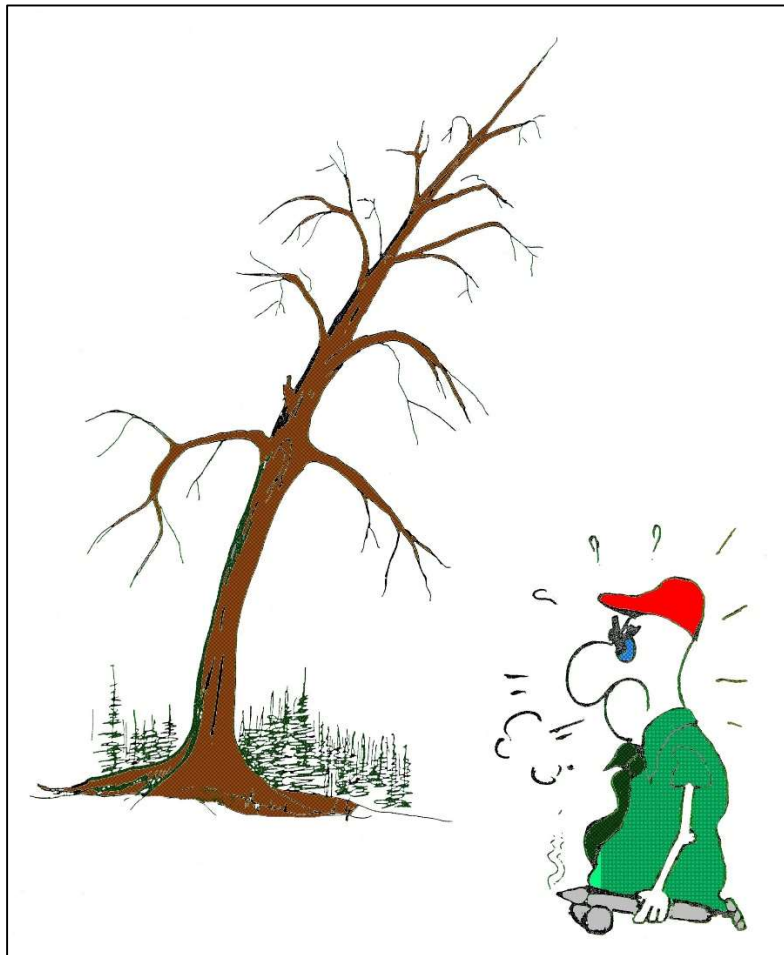
I knew Robert since his days at SFU. I remember that he loved playing hockey, and organized games at Four Rinks several times. Our paths parted for about a decade when he moved to Prince George. In 1994, I and my family moved to PG, and for several years we spent a fair bit of time together with Robert and his wife Brenda and several of Robert's work colleagues and their spouses in gourmet dinner evenings and other pursuits. We also worked together on several entomological projects which resulted in two publications. Robert had a lead role in organizing a meeting in Prince George of the Western Forest Insect Work Conference (WFIWC), and he was a great help in organizing a 2005 meeting of the International Union of Forest Research



Organization (IUFRO). Robert had a great sense of humour, and he was a talented cartoon artist. I first saw his DeBooBo character as the unofficial “logo” on the “Pest Manager” t-shirts almost all MPM students wore, and later in various slide shows when he gave guest lectures on forest health policy to our Forest Health students at the University of Northern BC (UNBC).

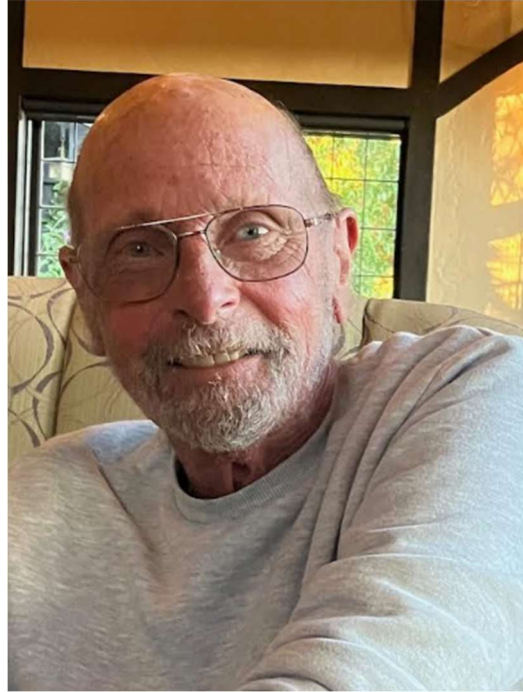
I had the opportunity to meet with Robert about four months before he passed away. At that time he was in good spirits, so it was a shock to hear that he had lost the battle with cancer. Robert was survived by his wife Brenda, son Kyle (Natalie), beloved grandchildren Oliver and Maria, and daughter Kaylee (Riley). He will be sorely missed by his many friends and colleagues.

*Staffan Lindgren*





## Peter Hall (1951-2024)



*Photo by P. Trevor*

Peter Hall of Sidney, BC, passed away peacefully and with dignity on April 8, 2024, after a long battle with cancer. Peter was born in Fort Churchill, Manitoba, but was raised in Victoria, BC. Peter graduated with a Bachelor of Science in zoology from the University of Victoria in 1972, after which he worked as a research technician with Research Scientist David Dyer at what was then the Pacific Forest Research Centre (now Pacific Forestry Centre). When Dyer retired at the end of the 1970's Peter was appointed as one of the first Regional Forest Entomologists in the Cariboo Forest Region of the BC Forest Service. Shortly thereafter he returned to Victoria where he assumed the position as Provincial Forest Entomologist where he spent the rest of his 28 years of service until his retirement in 2008 (apart from a secondment to Forestry Canada in the early 1990's). These positions were created as part of a major reorganization of the BC Forest Service Protection Branch, staffing a new Pest Management Section (renamed Forest Health since 1990) with pest management professionals. Peter also enrolled at UBC Forestry and under the supervision of John McLean he graduated with a MSc in 1984.

Peter was an extraordinary forest entomologist who could see the “big picture” when many of us were stuck on the minutiae. Among his many accomplishments he initiated the western spruce budworm and the spongy moth programs. He made a mark in the BC Forest Health program that will endure.





Peter had a quick wit, and when engaging in a scientific debate with Peter you had to be on your toes or you would be left in the dust, scratching your head. He was a dear friend, always supportive, and an excellent mentor to many while he was the Provincial Entomologist. When attending conferences or other scientific gatherings Peter would always have time to talk to keen, young, up-and-coming forest entomologists, giving them encouragement and sage advice. He led or was part of the organizing team for three Western Forest Insect Work Conferences (WFIWC) held in British Columbia (1997, 1986, and 2005. He was a Councillor of WFIWC in 1983, and he served as Chair of the Executive Committee in 2008. He was very supportive of research, and provided significant resources for projects that he deemed deserving.

Peter is survived by his wife Pat and his daughter Christine. He will be missed by his many friends and colleagues.

*Staffan Lindgren and Lorraine Maclauchlan*



*Peter and Lorraine. Photo by A. Britneff*



## Classifieds

### Kelowna Museum request

Linda Digby of the Kelowna Museum Society is requesting help acquiring insect specimens for the natural history museum. Their interest is the south Okanagan region. They are seeking donations of identified, labelled specimens and photographs from members or students. Contact Linda directly at the museum, [www.kelownamuseums.ca](http://www.kelownamuseums.ca).

## Upcoming Events

### *Bombus impatiens* Virtual Working Group

On **August 7, 1-4pm**, there will be a virtual working group meeting on current research on introduced *Bombus impatiens* in North America, and will include entomologists from BC, Washington State, Oregon, and beyond. For more details and the zoom link, please reach out to [juli.carrillo@ubc.ca](mailto:juli.carrillo@ubc.ca).

### SEQ-ESC JAM 2024

The Société d'entomologie du Québec is pleased to invite you to the Joint Annual Meeting of the Entomological Society of Canada and the Entomological Society of Quebec. The JAM will take place from **October 20 to October 23, 2024**, in the charming provincial capital, Québec.

Visit <https://event.fourwaves.com/seq-esc2024/pages> for more information.

LE BON, LA BRUTE ET LE TRUAND | THE GOOD, THE BAD AND THE UGLY

UNE QUESTION DE PERSPECTIVE ♦ A MATTER OF PERSPECTIVE

JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETIES OF CANADA AND QUÉBEC

Québec, QC  
Hôtel Le Concorde

October 20 to 23, 2024



## Upcoming Grant and Funding Opportunities

### EntSocBC Special Projects Grant

Every year, the ESBC invites applications for funding requests for projects that advance and promote entomological knowledge in the province of British Columbia. Projects address the following goals:

- Contribute to the understanding of insects and relatives in British Columbia
- Raise appreciation of insects and relatives in British Columbia
- Contribute to insects and relatives' conservation in British Columbia

The amount and number of projects funded annually depends on available funds. Up to a total of \$5000 CAD across all projects is available annually. Requests for funds that exceed this amount will be considered on a case-by-case basis.

Applications are accepted and evaluated twice annually. The next deadline is **September 1<sup>st</sup> 2024**.

Visit <https://entsocbc.ca/awards-scholarships/esbc-special-projects-grant/> for more information.

**Application Deadline: September 1<sup>st</sup> 2024**

### ESBC Legacy Award

The Legacy Award was created to recognize B.C. entomologists that have made outstanding contributions to their discipline of entomology throughout their career. This award is awarded to an individual in recognition of their significant contributions in research, mentoring, teaching, extension, innovation, pest management and active volunteer involvement in the ESBC and other societies/organizations in B.C. and beyond.

Any member in good standing of the ESBC can submit nominations to the Award Committee for consideration. The nominee should have an outstanding record of scientific contribution, mentorship, and service to the furtherment of entomology in British Columbia. Award recipients may be asked to present a short talk on their career accomplishments at a future ESBC AGM.

Visit <https://entsocbc.ca/awards-scholarships/esbc-legacy-award/> for more information

**Nomination Deadline: August 31<sup>st</sup> 2024**



## EntSocBC Student Awards

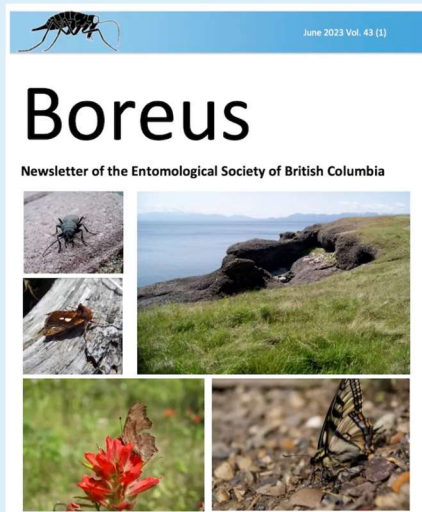
Each year the Entomological Society of British Columbia presents several awards to students of entomology.

- Student Oral Presentation Awards
- Dexter Johnson Award
- Equity, Diversity & Inclusion Award
- Graduate Student Scholarship Competition

Visit <https://entsocbc.ca/awards-scholarships/> for more information.

**Application Deadline: September 8<sup>th</sup> 2024**

## Got something to share? Submit to Boreus!



*Boreus*, the Newsletter of the Society is published in June and December. It contains entomological news, comments, reports, reviews and notices of meetings and other events. While emphasizing the Society's affairs, *Boreus* provides members with a forum for their views and news of British Columbia entomology, as well as informal articles, notes regarding research projects, and anything else that may be of interest to entomologists.

Please submit any entomological photograph, article, event or informational tidbit to the Editor!

Please send correspondence concerning *Boreus* to Joyce Leung at [boreus@entsocbc.ca](mailto:boreus@entsocbc.ca).

The deadline for submissions to be included in the Summer issue is **June 1**, and the Winter issue is **December 1**. Submission dates are flexible. Submit before the end of the month.