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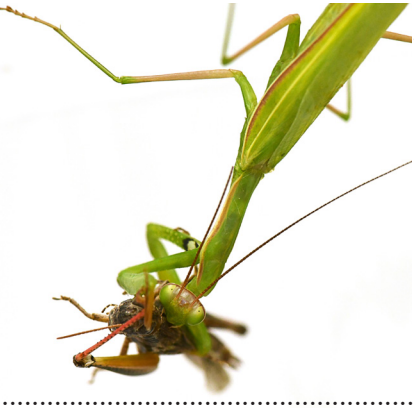
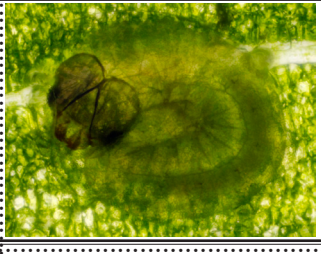
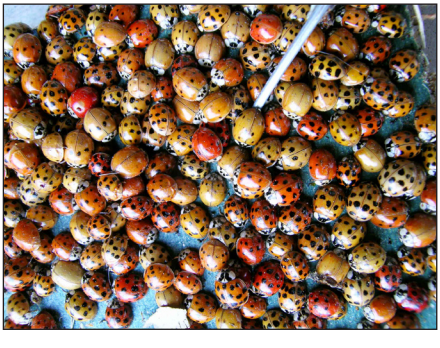




List of Contents / Table des matières

Volume 52(4), December / décembre 2020

Captions for cover photos can be found on the back cover.
La légende des photos de la couverture se situe sur la couverture arrière.



Cluster of multicoloured Asian lady beetles (Coleoptera: Coccinellidae) [Carman, Manitoba, Canada]
Un agrégat de coccinelles asiatiques (Coleoptera : Coccinellidae) de diverses couleurs [Carman, Manitoba, Canada]
[Photo: John Gavloski]

I didn't sign up for this!

If you are anything like me, you've said that to yourself on more than one occasion in the past year as the pandemic changed how we do just about everything. And I strongly suspect all of us on the ESC's Executive Council have muttered that to ourselves more than once during our more challenging moments. But when I think back, I realize there comes a point in almost any worthwhile endeavour where you begin to question why on earth you took this on: If you've ever organized or chaired an ESC Joint Annual Meeting or similar conference, you'll know exactly what I mean!

However, if you are anything like me, you'll also know that incredible feeling of satisfaction when the conference or project comes together, the joy of working hard with amazing, dedicated people and achieving something so worthwhile. It's so rewarding that I forget all about the stress of the preceding days where it didn't look like we had enough room nights, registration looked too low to break even and so on. It's then that I am so grateful that I did sign up.

Though the past year has thrown some hard things at us, I found my time as 1st Vice President very rewarding because of the amazing people that I've been blessed to work closely with. Gail Anderson has done a fantastic job leading us with competence and enthusiasm despite facing one of the most unusual and challenging years in the

Dans quoi me suis-je embarqué?

Si vous êtes un peu comme moi, vous vous êtes dit cela à plus d'une occasion au cours de l'année dernière, car la pandémie a changé notre façon de faire à peu près tout. Et je soupçonne fortement que tous les membres du Conseil exécutif de la SEC se sont murmurés cela plus d'une fois dans les moments les plus difficiles. Mais quand j'y repense, je me rends compte qu'à un moment donné, dans presque toute entreprise valable, on commence à se demander pourquoi on s'est lancé dans cette aventure : si vous avez déjà organisé ou présidé une réunion annuelle conjointe de la SEC ou une conférence similaire, vous savez exactement ce dont je parle!

Cependant, si vous êtes comme moi, vous connaissez aussi ce sentiment incroyable de satisfaction lorsque la conférence ou le projet se concrétise, la joie de travailler dur avec des gens extraordinaires et dévoués et de réaliser quelque chose qui en vaut la peine. C'est tellement gratifiant que j'oublie tout le stress des jours précédents où il semblait que nous n'avions pas assez de nuitées, que les inscriptions semblaient trop faibles pour être rentables, et ainsi de suite. C'est alors que je suis si reconnaissant de m'être engagé.

Bien que l'année écoulée nous ait donné du fil à retordre, j'ai trouvé mon mandat de premier vice-président très gratifiant grâce aux personnes extraordinaires avec lesquelles j'ai eu la chance de travailler. Gail Anderson a fait un travail fantastique en nous dirigeant avec compétence et enthousiasme malgré le fait qu'elle ait dû faire face à l'une des années les plus inhabituelles et les plus difficiles de l'histoire de la SEC. En tant que Président-sortant, Kevin Floate a apporté un point de vue réfléchi et judicieux sur toutes les questions auxquelles le Conseil d'administration ou le Conseil exécutif était confronté. Merci Kevin, ta sagesse et ton attitude calme manqueront au Conseil d'administration, mais tu

ESC's history. As past president, Kevin Floate provided a thoughtful and wise perspective regarding any issue the Board or Executive Council was facing. Thank you Kevin, your wisdom and calm approach will be missed on the Board, but you have earned a well deserved break! Felix Sperling has demonstrated insight, open-mindedness and has a gift for eloquently and confidently expressing his perspective. I know he will make a fantastic President when the time comes and I will look to his insight frequently through the year.

I also must thank our secretary Neil Holliday, whose organizational skills, attention to detail and wisdom has been of immeasurable value to Executive Council and the Board. Thank you Neil, I am very much looking forward to working closely with you this year.

By the time you read this, we will have transitioned to a new treasurer. Joel Kits has served the society for almost 3 years in this capacity and it's impossible to overstate the value of Joel's service to the ESC, especially given the financial uncertainty of recent times. Joel hands the reins to Ward Strong who I know will do a fantastic job with this portfolio. Welcome Ward and thank you for taking on this role!

As we live in rapidly changing times, the ESC has taken progressive steps to adapt. To increase the diversity of voices and perspectives among the ESC's leadership your Governing Board has a different look with new director positions: an elected Director for Equity, Diversity and Inclusion (Sebastian Ibarra) and a Student and Early Professional Director (Rachel Rix). I wish to thank Sebastian and Rachel for their willingness to serve and to ensure that the needs and concerns of all of ESC's members are represented. To further that goal, we also have established a Committee of Equity, Diversity and Inclusion. Thanks to Christine Noronha for chairing this committee, and thanks to all those who agreed to serve as committee members.

One of the treasures of the ESC is our journal, *The Canadian Entomologist* (*TCE*).

as gagné une pause bien méritée! Felix Sperling a fait preuve de perspicacité, d'ouverture d'esprit et a le don d'exprimer son point de vue avec éloquence et confiance. Je sais qu'il fera un président fantastique le moment venu et je me tournerai fréquemment vers sa perspective tout au long de l'année.

Je dois également remercier notre secrétaire Neil Holliday, dont les compétences organisationnelles, le souci du détail et la sagesse ont été d'une valeur incommensurable pour le conseil exécutif et le conseil d'administration. Merci Neil, je me réjouis de travailler en étroite collaboration avec toi cette année.

Au moment où vous lirez ces lignes, nous aurons fait la transition vers un nouveau trésorier. Joel Kits a servi la société pendant près de 3 ans à ce titre et il est impossible de trop insister sur la valeur des services rendus par Joel à la SEC, surtout compte tenu de l'incertitude financière de ces derniers temps. Joel passe les rênes à Ward Strong qui, je le sais, fera un travail fantastique dans ce domaine. Bienvenue Ward et merci d'avoir accepté ce rôle!

Comme nous vivons à une époque de changements rapides, la SEC a pris des mesures progressives pour s'adapter. Afin d'accroître la diversité des voix et des points de vue parmi les dirigeants de la SEC, votre conseil d'administration a changé de look avec de nouveaux postes d'administrateur : un administrateur élu pour l'équité, la diversité et l'inclusion (Sebastian Ibarra) et une administratrice étudiante et jeune professionnelle (Rachel Rix). Je tiens à remercier Sebastian et Rachel pour leur volonté de servir et de veiller à ce que les besoins et les préoccupations de tous les membres de la SEC soient représentés. Pour atteindre cet objectif, nous avons également créé un comité pour l'équité, la diversité et l'inclusion. Merci à Christine Noronha de présider ce comité, et merci à tous ceux qui ont accepté de servir en tant que membres du comité.

L'un des trésors de la SEC est notre revue, The Canadian Entomologist (TCE). Nous avons changé la structure éditoriale et avons

We have changed the editorial structure and now have three Editors-in-Chief: special thanks to Dezene Huber, Amanda Roe and Suzanne Blatt for stepping into these roles. *TCE* continues to be one of the great strengths of the Society, and that success can be attributed to our incredibly dedicated editorial members. We also have hired a professional copy editor, Monique Keiran. Monique is a consummate professional and has vast experience as a scientific copy editor, including copy editing The Journal of the Entomological Society of British Columbia for a number of years. Monique was also the ESC's Criddle Award recipient in 2018! Welcome Monique, and thank you for the excellence you bring to your work.

In another change, we now have a new webmaster. Jordan Bannerman has served capably in this capacity for several years, and he is assisting our new webmaster Cass Chowdhury as she learns the system and gets settled in. Thank you Jordan for your valuable years of service to the ESC, and thank you Cass for your willingness to take on this work.

While we are disappointed that we could not meet in Calgary this year, we are excited about 2021 where the Entomological Society of Ontario is hosting our Joint Annual Meeting from 14 to 17 November at the Marriott Fallsview Hotel in Niagara Falls. While it's not certain we will all be able to meet face to face at that time, we anticipate a great meeting whether we can meet in person, virtually, or some combination of the two. For more information on the conference see: https://www.entsocont.ca/esceso-2021-jam.html

Finally, I wish to thank all the board members, officers, committee chairs and the team at Strauss Management (Geoff Powell and Ryan Jones). You carry out the work of the Society and ensure our success. And I know that regardless of the challenges we face, the pleasure of working with you in this upcoming year will make me very glad that I did sign up for this.

maintenant trois éditeurs en chef : merci à Dezene Huber, Amanda Roe et Suzanne Blatt d'avoir accepté ces fonctions. TCE continue d'être l'une des grandes forces de la Société, et ce succès peut être attribué à nos membres éditoriaux incroyablement dévoués. Nous avons également engagé une réviseure professionnelle, Monique Keiran. Monique est une professionnelle accomplie et possède une vaste expérience en tant que réviseure scientifique, notamment en tant que réviseure du Journal of the Entomological Society of British Columbia depuis plusieurs années. Monique a également reçu le prix Criddle de la SEC en 2018! Bienvenue Monique, et merci pour l'excellence que tu apportes à ton travail.

Par ailleurs, nous avons maintenant un nouveau webmestre. Jordan Bannerman a occupé cette fonction avec compétence pendant plusieurs années, et il assiste notre nouveau webmestre Cass Chowdhury dans son apprentissage du système et son installation. Merci Jordan pour tes précieuses années de service à la SEC, et merci Cass pour ta volonté d'assumer ce travail.

Bien que nous soyons déçus de ne pas avoir pu nous réunir à Calgary cette année, nous sommes enthousiastes pour 2021 où la Société d'entomologie de l'Ontario organise notre réunion annuelle conjointe du 14 au 17 novembre à l'hôtel Marriott Fallsview de Niagara Falls. Bien qu'il ne soit toujours pas certain que nous pourrons tous nous rencontrer en personne à ce moment-là, nous nous attendons à une grande réunion, que ce soit en personne, virtuellement ou une combinaison des deux. Pour plus d'informations sur la conférence, consulter : https://www.entsocont.ca/esceso-2021-jam.html

Enfin, je tiens à remercier tous les membres du conseil d'administration, les dirigeants, les présidents de comités et l'équipe de Strauss Management (Geoff Powell et Ryan Jones). Vous réalisez le travail de la Société et assurez notre succès. Et je sais que, quels que soient les défis auxquels nous sommes confrontés, le plaisir de travailler avec vous au cours de l'année à venir me rendra très heureux de m'être engagé dans cette aventure.

ESC/ESO 2021 JAM

ESC-ESO 2021

Sunday, 14 November to Wednesday, 17 November 2021

Marriott Fallsview Hotel, Niagara Falls, Ontario

JAM theme and vision

Strength in Diversity. The insects are among the most diverse group of organisms on the planet, and entomologists are applying an increasingly diverse toolkit to advance knowledge on a diversity of topics in the field. We are keenly aware of the declines in the diversity of insects that threaten vital ecosystem functions, human health, and our economy. We are also becoming increasingly aware of systemic barriers that preclude many from studying and practicing entomology, threats that likely impact the productivity and ingenuity of entomological research in Canada. Our goal for the 2021 JAM – Strength in Diversity - is to showcase state of the art entomological research on a diversity of taxa, ecosystems and disciplines, and to collectively discuss solutions to enhancing equity and diversity in Entomology.

Speakers

Heritage Lecture: Dr Lisa Myers, York University
Keynote: Dr Amanda Moehring, Western University
Keynote: Dr Jayne Yack, Carleton University
Keynote: Dr Claire Kremen, University of British Columbia

https://www.entsocont.ca/esceso-2021-jam-english.html

ESC/ESO 2021 RAC

ESC-ESO
2021

Du dimanche 14 novembre au mercredi 17 novembre 2021
Hôtel Marriott Fallsview, Niagara Falls, Ontario

Thème et vision de la réunion annuelle

La force est dans la diversité. Les insectes font partie du groupe d'organismes le plus diversifié de la planète, et les entomologistes utilisent une panoplie d'outils de plus en plus variés pour faire progresser les connaissances sur une multitude de sujets dans ce domaine. Nous sommes très conscients du déclin de la diversité des insectes qui menace les fonctions vitales des écosystèmes, la santé humaine et notre économie. Nous sommes également de plus en plus conscients des obstacles systémiques qui empêchent de nombreuses personnes d'étudier et de pratiquer l'entomologie, des menaces qui ont certainement un impact sur la productivité et l'ingéniosité de la recherche entomologique au Canada. Notre objectif pour la réunion annuelle conjointe 2021 - La force est dans la diversité - est de présenter l'état de la recherche entomologique de pointe sur une diversité de taxons, d'écosystèmes et de disciplines, et de discuter collectivement des solutions pour améliorer l'équité et la diversité en entomologie.

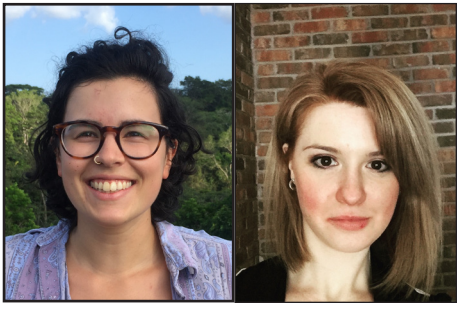
Conférencières

Allocution du patrimoine : Dre Lisa Myers, Université York
Conférencière d'honneur : Dre Amanda Moehring, Université Western
Conférencière d'honneur : Dre Jayne Yack, Université Carleton
Conférencière d'honneur : Dre Claire Kremen, Université de Colombie-Britannique

https://www.entsocont.ca/esceso-2021-rac-franccedilais.html

STEP Corner / Le coin de la relève

Anne-Sophie Caron and Rachel Rix



2020 ESC Student Awards

Congratulations to the students who received one of the prestigious ESC awards this year. Their names, affiliations and research interests are provided below.

Research Roundup

We continue to publicize graduate student publications to the wider entomological community through our Research Roundup initiative. Check out the ESC blog for most recent featured articles. If you want your recently published article featured (or we missed yours last month!), send us an email at students@esc-sec.ca. For regular updates on new Canadian entomological research, you can join the ESC Students Facebook page or follow us on Twitter @esc_students.

Getting involved with the ESC

The Student and Early Professional Affairs Committee (SEPAC) is looking for new members (especially Early Professionals). Volunteering for the SEPAC is a great way to get involved with the Society and promote entomology to students across Canada. If you are interested in joining or just have suggestions for new initiatives in the coming year, email us at students@esc-sec.ca, or contact us personally at annesophie.caron.p@gmail.com or Rachel.Rix@dal.ca We look forward to hearing from you,

Anne-Sophie and Rachel.

Prix et bourses étudiants de la SEC 2020

Félicitations aux étudiants ayant reçu l'un des prestigieux prix de la SEC cette année. Leurs noms, affiliations et intérêts de recherche sont fournies ci-dessous.

Aperçu de la recherche

Nous continuons à faire la publicité des publications des étudiants des cycles supérieurs auprès de la communauté entomologique via notre initiative Aperçu de la recherche. Consultez le blogue de la SEC pour les plus récents articles. Si vous voulez que votre plus récent article soit mis en vedette (ou si nous l'avons manqué le mois dernier!), envoyez-nous un courriel à students@esc-sec.ca. Pour des mises à jour régulières sur la recherche entomologique canadienne, adhérez à la page Facebook des étudiants de la SEC ou suivez-nous sur Twitter à @esc_students.

S'impliquer au sein de la SEC

Le comité des affaires étudiantes et des jeunes professionnels cherche de nouveaux membres (particulièrement des jeunes professionnels). S'impliquer bénévolement pour le comité est une excellente façon de s'impliquer avec la Société et promouvoir l'entomologie auprès des étudiants au Canada. Si vous êtes intéressés à joindre le comité, ou si vous avez des suggestions pour de nouvelles initiatives pour la prochaine année, écrivez-nous à students@esc-sec.ca. Vous pouvez aussi nous contacter personnellement à annesophie.caron.p@gmail.com ou Rachel.Rix@dal.ca. Au plaisir d'avoir de vos nouvelles,

Anne-Sophie et Rachel.

Thesis Roundup / Foisonnement de thèses

If you or a student you know has recently defended an entomology-related thesis at a Canadian University, and would like notice of this accomplishment published here and on the ESC website, please email students@esc-sec.ca with the relevant information (name, date, degree, thesis title, supervisor[s], and university).

SEPAC wants to congratulate the following students for successfully defending their thesis! If you want to learn more about their research, you can contact them directly or send us a message to be put in contact.

Si vous, ou un étudiant que vous connaissez, avez récemment soutenu votre thèse dans un domaine lié à l'entomologie dans une université canadienne, et que vous voulez publier l'avis de cette réalisation ici et sur le site web de la SEC, merci d'envoyer les informations pertinentes (nom, date, diplôme, titre de la thèse, directeur[s] et université) à students@esc-sec.ca.

Le comité veut féliciter les étudiants et étudiantes suivantes pour la défense de leurs mémoires et thèses! Si vous voulez en savoir plus sur leur recherche, vous pouvez entrer en contact avec eux directement ou nous envoyer un message pour vous mettre en contact.

Amélie Gervais, 2020, PhD. De la communauté à l'individu: influence de l'intensité agricole et du paysage sur les bourdons (*Bombus* spp.) du Sud du Québec. Supervisors : Valérie Fournier (Université Laval) and Marc Bélisle (Université de Sherbrooke).

Justin Michael Gaudon, 2019, PhD. Natural enemies of wood-boring beetles in northeastern temperate forests and implications for biological control of the emerald ash borer (Coleoptera: Buprestidae) in North America. Supervisor: Sandy M. Smith (University of Toronto). http://hdl.handle.net/1807/95858

Brian Muselle, 2019, MSc. Agent-based scenario models of invasion and movement of *Rhagoletis pomonella* (Diptera: Tephritidae) within the southern interior of British Columbia. Supervisors: Drs Jason Pither, Lael Parrott, Robert Lalonde (all University of British Columbia, Okanagan campus) and Dr Howard Thistlewood (AAFC Summerland).

Student scholarships and awards in 2021

The Entomological Society of Canada works to foster entomological instruction and experiences through its student awards competition. In 2021, the annual competition for the following Entomological Society of Canada scholarships and awards will be held: **MSc and PhD Scholarships**, **Research Travel Scholarships (PhD and MSc)**, **John H. Borden Scholarship** in IPM, **Keith**

Prix et bourses étudiants 2021

La Société d'entomologie du Canada s'efforce de promouvoir l'enseignement et les expériences entomologiques par le biais des prix et bourses pour les étudiants. En 2021, le concours annuel pour les bourses et prix suivants de la Société d'entomologie du Canada aura lieu : **bourses d'études supérieures** (maîtrise et doctorat), **bourses de voyage pour la recherche** (doctorat

Kevan Scholarship for studies in insect systematics, **Dr Lloyd M. Dosdall Memorial Scholarships** in arthropod community ecology, **Danks Scholarships** for studies on Canadian arthropod fauna, and **Ed Becker Conference Travel Awards**.
Details of the application procedures are available on the Society website https://esc-sec.ca/student/student-awards/ Students are encouraged to apply for these awards with the completed award package submitted to the ESC management team at Strauss (info@esc-sec.ca). The deadline for all but the Becker Awards is 1 March 2021. For the Ed Becker Awards, the deadline will be the same as that for abstract submissions for the Joint Annual Meeting with the Entomological Society of Ontario in Niagara Falls.

et maîtrise), **bourse John H. Borden** pour la lutte intégrée contre les ravageurs, **bourse Keith Kevan** pour des études sur la systématique des insectes, **bourses commémoratives Dr Lloyd M. Dosdall** en écologie des communautés d'arthropodes, **bourses Danks** pour des études sur la faune canadienne d'arthropodes et **bourses Ed Becker pour la réunion annuelle**.
Le détail des procédures de candidature sont disponibles sur le site web de la Société https://esc-sec.ca/fr/students/student-awards/. Les étudiants sont encouragés à poser leur candidature pour ces prix avec le dossier de candidature complet soumis à l'équipe de gestion de la SEC à Strauss (info@esc-sec.ca). La date limite pour tous les prix, sauf les bourses Ed Becker, est fixée au 1er mars 2021. Pour les bourses Ed Becker, la date limite sera la même que celle des soumissions de résumés pour la réunion annuelle conjointe avec la Société d'entomologie de l'Ontario à Niagara Falls.

2020 ESC Student Award winners / Prix et bourses étudiants en 2020

Award	Winner	Affiliation	Amount of award
John H. Borden Scholarship	Asha Wijerathna	University of Alberta	$1,000
ESC Postgraduate Scholarship (PhD)	Andrea Haberkern	University of British Columbia	$2,000
ESC Postgraduate Scholarship (MSc)	Victoria Ivey	Acadia University	$2,000
Research Travel Scholarship (MSc)	Not awarded	-	$2,000
Research Travel Scholarship (PhD)	Jayme Lewthwaite	Simon Fraser University	$2,000
Biological Survey of Canada Scholarship	Janean Sharkey	University of Guelph	$2,000
Dr Lloyd M. Dosdall Memorial Scholarship	Adam Groulx	Queen's University	$1,000
Dr Lloyd M. Dosdall Memorial Scholarship	Thanusha Suresh	Acadia University	$1,000
Danks Scholarship	Megan Reich	University of Ottawa	$1,500
Danks Scholarship	Carlos Barreto	Western University	$1,500

Thank you to all of the ESC student members who entered this year's student awards competition. As always, the student application packages were exceptional, and I'm excited by the quality of entomological students that we are training in Canada. On behalf of the ESC, the Student Awards Committee is proud to be able to help with this training.

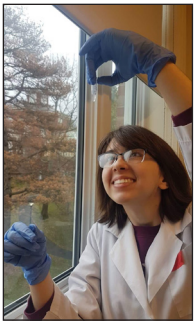
Thanks very much to the 2020 ESC Student Awards Committee members for their time and dedication. The Committee has the capacity to evaluate our ESC students in both official languages when necessary and it draws from a diversity of volunteers. Thanks to Marla Schwarzfeld (Ontario), Christian Hébert (Quebec), Adam Brunke (Ontario), Lisa Poirier (British Columbia), Jane Yack (Ontario), Julia Mlynarek (Montreal), Joanna Konopka (Johns Hopkins University, Maryland) and Neil Holliday (*ex officio,* Manitoba) for your service to the Entomological Society of Canada and for making my job easier.

Tyler Wist (Saskatchewan)
Chair of the ESC Student Awards Committee

The 2020 ESC Student Award Recipients are:

Asha Wijerathna, a PhD student at the University of Alberta, supervised by Maya Evenden, is the winner of the **John H. Borden Scholarship** for studies in integrated pest management. Asha studies various aspects of the invasive agricultural pest, the pea leaf weevil, and has even developed an economic threshold for the species in faba bean.

The recipient of the **ESC Postgraduate Scholarship (PhD)** is **Andrea Haberkern** (University of British Columbia). She is supervised by Leticia Aviles and works on fitness consequences of different web types made by Neotropical spiders. Andrea is also highly successful as a science communicator and runs a blog (buggirl.tumblr.com) with over 160,000 followers.



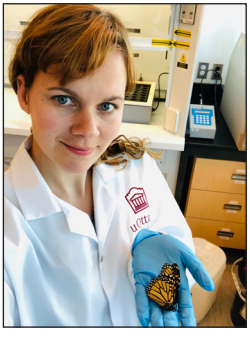
Victoria Ivey (Acadia University), supervised by Kirk Hillier, is the winner of the **ESC Postgraduate Scholarship (MSc)**. Victoria works on corn earworm moths and measures the expression of olfactory receptor genes, neuron responses and mating behaviours in response to sex pheromones.

Jayme Lewthwaite is the winner of the **ESC Research Travel (PhD) Scholarship**. She is supervised by Arne Mooers at Simon Fraser University. Jayme works on climate effects and range shifts on butterflies and will use the award to fund travel to the CNRS in Moulis, France.

Janean Sharkey (University of Guelph) is the recipient of the **Biological Survey of Canada Scholarship**. She works on how restoration and land management affect the composition of wild bee communities under the supervision of Nigel Raine.

Adam Groulx is the recipient of a **Dr Lloyd M. Dosdall Memorial Scholarship**. Adam is working on a PhD at Queen's University, supervised by Paul Martin, studying resource partitioning in burying beetles, *Nicrophorus* species.

Thanusha Suresh (Acadia University), supervised by Kirk Hillier, was also awarded a **Dr Lloyd M. Dosdall Memorial Scholarship** for her work on spruce budworm chemical ecology and has plans for single sensillum recordings as well as many moth-brain dissections.



Megan Reich (University of Ottawa) is one of the 2020 recipients of a **Danks Scholarship**. Co-supervised by Clément Bataille and Heather Kharouba, Megan tracks the migratory origins of two butterfly species using isotope geolocation and population genomics.

A second recipient of a **Danks Scholarship** is **Carlos Barreto**, who is working on a PhD at Western University with Zoë Lindo. Carlos' research is focused on "mitey small" oribatid-mite food webs among different CO_2 and warming scenarios in the soil of Canadian peatlands and forests.

G.W. Courtney

Eastern pondhawk nymph (Libellulidae: *Erythemis simplicollis* (Say)); Engeldinger Marsh, Iowa; May 2020

Acadian Entomological Society

The 2020 AES annual meeting (held online) was a great success. Many thanks to Suzanne Blatt (AAFC) and Paul Manning (Dalhousie) for organizing. Congratulations to **Alicia Cattiaux, Heather Chow, Aaron Fairweather, Victoria Ivey,** and **Kyle Knysh**, who won student awards. Stay tuned for information about our 2021 meeting in PEI!

The AES thanks outgoing AES Regional Director Peggy Dixon for her service, and announces the election of Gaétan Moreau as President, Chris Cutler as Vice President, and Catherine Scott as AES Regional Director.

La Société d'entomologie du Québec

The SEQ has decided to organize a virtual annual meeting which will be held on Zoom from the 26 to 27 November 2020. Registration was a success as we received 30 oral presentation summaries for the first day only. For the 27th, a special session on entotechnologies and entomophagy has been organized.

The SEQ organized a monitoring blitz on iNaturalist aimed at the white admiral (*Limenitis arthemis*). One of the goals was to revive public interest in the Society's insect emblem. The Insectarium of Montreal joined the project which was a success.

Following the Black Lives Matter movement, the SEQ will create an Equity, Diversity and Inclusion Committee which will be set up by Mathilde Gaudreau. In addition, the French Common Names Committee has submitted a request to the ESC's Common Names Committee to review Canadian *Limenitis* spp. common names.

Entomological Society of Ontario

The ESO held a virtual annual general meeting on 15 November 2020. During this meeting, a presentation prepared by ESO Virtual Student Presentation Award winner **Aidan Jamieson** (York University) was made.

In 2020, the ESO Student Representatives at the University of Guelph hosted **the 2020 Virtual Bug Day**. This event was shown on the Bug Day YouTube channel (link below): https://www.youtube.com/channel/UCkB5IWQL2BOEH44laZhNz9Q. This event has generated about 50 views to date, with numbers continuously rising. Please check out the clips and support your fellow ESC members!

The ESO is currently hosting a **People's Choice Entomology Photo Competition.** Photos will be posted to the ESO Facebook page and ESC members are invited to vote on them until the end of November.

Entomological Society of Manitoba

The Entomological Society of Manitoba will hold its 76th AGM online on 4 December 2020. The event will include a student symposium to showcase recent developments in student research and an awards ceremony.

Entomological Society of Saskatchewan

The ESS held its Annual General Meeting virtually, on the afternoon of 20 November 2020. Four excellent student presentations were enjoyed by all. The student presentation award was given to **Andrea Wade** for her ESS 2020 Fall meeting presentation. The Brooks Prize was presented to **Berenice Romero**. We had no applications for the ESS Entomological Encouragement award in this fiscal year. Due to the online format and travel restrictions, no Travel Awards were given. We received $1600 from the Entomological Society of Canada to fund the Youth and Amateur Encouragement Committee's activities. One payment of $1000 was over and above the usual $200 per year, which we also received in a $600 lump sum for the past 3 years. The ESC Entomology Enthusiast designation was promoted as part of this meeting.

Despite recent restrictions on face-to-face encounters, some personal interactions (incorporating health guidelines) still occurred. Owen Olfert set up a pinned insects display in his front yard this year for several weeks in the summer of 2020. He had a great turnout of local children and the display was well received. Meghan Vankosky gave career fair-type talks to schools through the Agriculture in the Classroom platform to Regina schools. Meghan also participated in a virtual career fair, hosted by Agriculture in the Classroom in fall 2020. She told high school students from schools in the Regina area about her 'origin story' as a professional entomologist and described the work she does in her research program. Tyler Wist participated in a Public Affairs' Branch initiative to have AAFC scientists connect with elementary school students through the not-for profit group "Exploring by the Seat of your Pants" (16 Oct 2020) in conjunction with World Food Day, that virtually connects scientists and explorers to classrooms. Tyler has been hosting volunteers through the Saskatchewan Intercultural Association to give them experience in Canadian Entomology. Currently, Ashwinder Diwahli is volunteering in a term from the beginning of October to the end of December. Tyler remains a member of the ESC's Public Education Committee and they are putting together a guide to Entomological Education in Canada. Finally, James Tansey presented 'Insect diversity for kids' to groups of Scouts and Beavers in Moosejaw in August.

An ESS-ESC JAM 2023 discussion and call for volunteers was also conducted. A meeting to address logistics is slated for early December. New ESS executive members were elected. Stephen Srayko is the new President, Sean Prager is Past-President, and Stefanie De Heij is Vice-President. James Tansey continues as Regional Director to ESC, Tyler Wist continues as Treasurer, Iain Phillips continues as Secretary, and Julie Soroka and Chrystal Olivier are the ESS Auditors.

Entomological Society of Alberta

The ESA hosted a virtual conference on the afternoons of 22 and 23 October 2020. The online conference was well attended with 54 registrants. There were 20 oral presentations and 4 posters. The first afternoon began with an oral presentation session and was followed immediately by a short poster session and social. The second afternoon saw another session of oral presentations followed immediately by the business meeting. This year four student competition awards were given out: **Emily Lemke** (1st) and **Emily Purvis** (2nd) took home awards for the presentations on their MSc research, while **Antonia Musso** (1st) and **Danielle Clake** (2nd) took home awards for the presentations on their PhD research. **Valentina Ibarra Galvis** was awarded the Undergraduate Research Award. **Bette Beswick** was recognized for her contributions to entomology throughout the community with the Fredrick S. Carr Award. Finally, the ESC Norman Criddle Award was handed out to **Colin Weir** for his contributions to the entomology community in Southern Alberta, particularly through hosting the annual Insect Discovery Day at the Coaldale Bird of Prey Centre. Next year the ESA meeting will be hosted in central Alberta with the exact location and dates to be announced.

Entomological Society of British Columbia

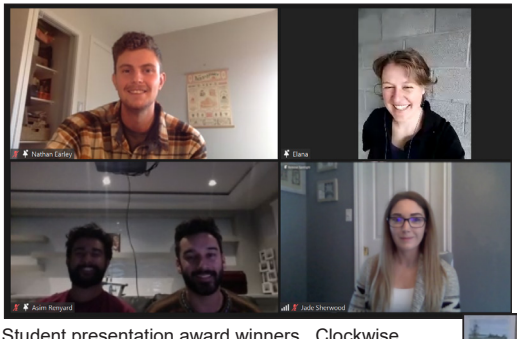
Neither snow nor rain nor heat nor gloom of pandemic has stopped the intrepid entomologists of British Columbia from holding their annual scientific conference and general business meeting. From 26-28 October, a (possibly?) record setting 88 professional, student, and retired entomologists and arachnologists gathered virtually to share their research with each other.

The 21 student presentations spanned a wide range of topics from intraspecific communication, to mutualisms, to community dynamics. Several presentations focused on the impact and control of wireworms in agroecosystems while biological control was another important theme. The Society honoured five students for excellence in their presentations. **Elana Varner** of Simon Fraser University won 1st place in the PhD category for her presentation *"Do spring queen bumble bees sense, and behaviorally respond to house mouse odorants as nest site location cues?"* **Asim Renyard**, also from SFU, won 2nd place for his presentation *"To the beat of their own drum: The role of vibratory communication in Western carpenter ants"*. In the MSc category, **Nathan Early** from the University of British Columbia, was awarded 1st place for his presentation *"Is the community composition within galls static? Local variability in parasitoid diversity in the Okanagan* Diplolepis variabilis *(Hymenoptera: Cynipidae) gall system"*, and **Jaime Chalissery** from SFU won 2nd place for his presentation *"We go together! – Groups of European fire ants,* Myrmica rubra*, distinguish between pheromone blends, and follow pheromone trails for longer distances than individual ants."* **Jade Sherwood** of the University of the Fraser Valley, won the price for the best undergraduate presentation titled *"The perpetual scent of doom: Fear-induced avoidance behavior from a natural enemy"*.

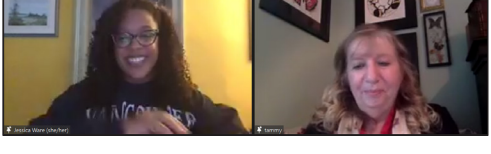
On the second day of the conference, attendees were treated to a very interesting plenary lecture delivered by Dr Jessica Ware, Assistant Curator of Invertebrate Zoology at the American Museum of Natural History. Dr Ware is a Canadian-born, and UBC-educated entomologist who studies evolution of dragonflies, damselflies, cockroaches and termites. She gave a wonderful account of her career path as well as some intriguing examples of her research on odonate migration.

The third and final day of the conference featured a symposium honoring the research and past collaborations of Dr Lee Humble, who died this past August. Altogether, 15 people from across Canada and the USA, presented research, stories, and memories of work they had conducted with Lee or under his supervision. All agreed that it was a wonderful tribute to the breadth of Lee's influence in the world of invasive insects.

Finally, at the Annual General Meeting, new executive members of the ESBC were elected. Lorraine Maclauchlan is the new Second Vice President, Robert Higgins is the new Secretary, Markus Clodius will be taking over as the Treasurer, and Joyce Leung will be rejoining the executive as a Director. Thanks are extended to all our past executive members for their dedication and service to the Society.



Student presentation award winners. Clockwise from top left: Nathan Early, Elana Varner, Jade Sherwood, Asim Renyard, Jaime Chalissery.



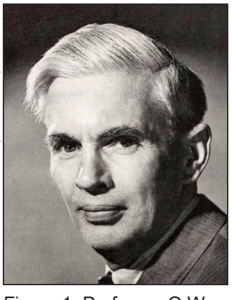
Plenary Speaker, Dr Jessica Ware (left) and Past President of the ESBC, Tammy McMullan (right).

Wider aspects of a career in entomology. 12. Graduate studies in England

Hugh V. Danks

This series of articles outlines some ancillary aspects of my entomological career, for the potential amusement of readers. It reports the sometimes unexpected challenges of working in new places and in the real world, an approach that serves also to expose some conclusions about research activities and some information about insects and their environments. This article considers my time as a graduate student in entomology.

My graduate studies in the Department of Zoology and Applied Entomology of Imperial College (University of London) were based at Silwood Park, the field station of the college. This site is close to Ascot, Berkshire, home of the racecourse for thoroughbred horses that is renowned for the ridiculous hats sported by some of the ladies who attend the races during "Royal Week".



Walter Bird/The Royal Society

Figure 1. Professor O.W. Richards (1901–1984; photographed in 1959), who supervised the author's graduate studies. Image from Biographical Memoirs of Fellows of the Royal Society **33**: 538 (1987).

O.W. Richards (Figure 1) was my supervisor, and before deciding what to study I asked him whether the choice of topic was critical. He replied that what matters is the quality of the work, not the subject. Mundane work, even on a species of great economic importance, would be much less useful—to entomology as well as to a future career—than an investigation that addressed themes of genuine scientific value.

As a doctoral student (Figure 2), I chose to examine the natural history of aculeate Hymenoptera that nest in the pithy stems of bramble (blackberry). Study of this specialized habitat might reveal not only how the species of the community survive and interact, but also how populations of insects thought to occur in extremely low abundance can be measured.

Kensington Cameras

Figure 2. Author Hugh Danks as a graduate student in 1966.

At the end of my undergraduate studies in the spring of 1965, I installed numerous trap-nest bundles on the field station, each one made up of six 30-cm lengths of bramble stem with the ends cut to expose the pith. Most of them were staked out at ground level (Figure 3). Wasps and bees would nest in the pith, and their nests could be examined a few months later, when my research began. Bundles were placed mainly in open areas (e.g., Figure 4), which are favoured by most species.

O.W. Richards invited me to use the back of his laboratory at the field station to prepare the bundles. One day, O.W. was seated at the front bench. He was conducting a major study of beetles and other insects on scotch broom, and was dissecting individual females to assess fecundity. He would put a specimen under the microscope, quickly dissect it, record the fecundity, discard the specimen, and repeat these actions with great regularity.

Hugh Danks (hughdanks@yahoo.ca) retired in 2007 after many years as head of the Biological Survey of Canada. In that role, he helped to coordinate work on the composition and characteristics of the arthropod fauna of the country, and to summarize the results. In addition, his research studied cold-hardiness, diapause, and other adaptations to seasonality in northern regions.


H.Danks

Figure 3. Trap-nest bundle of cut bramble stems, as used in the field research noted here.


H.Danks

Figure 4. Crop area in Silwood Park (before planting); trap nests were deployed along the left-hand edge.

Alongside him was his cooperator on the faculty, Nadia Waloff. Suddenly, she stopped her corresponding activity and declared: "Oh, do you know, Professor...!" She always spoke enthusiastically, and her voice rose and fell with excitement for many minutes as she explained a theory about the material they were working on. At last, she made a final point, and concluded "So what do you think of that, Professor?!"

O.W. had continued his methodical work of dissection throughout her animated exposition. There was just a second of silence before he lifted his head from the microscope to reply: "Oh, no," he said, "that can't be true, because there is only one generation a year." He looked back down and resumed his work, while Nadia Waloff stared off in stunned silence. At the back of the room, I was perilously close to spontaneous laughter inappropriate for a beginning student.

Many stories about O.W. circulated in the department. One claimed that years ago he had suddenly announced, to general surprise, that he was getting married (to a fellow entomologist), and would soon leave to spend the honeymoon in South America. In the faculty common room upon his return, someone asked him with a knowing look how the honeymoon had gone. South America was an area of particular interest to a student of wasps, as the questioner learned when the innuendo he had intended disappeared without a trace at the response: "Oh, I got four new species, and my wife got three."

O.W. seemed to be shy: for example, he might look down if someone approached along a corridor, but give a cheery "Oh, hello!" if they appeared suddenly from around a corner. Especially when uncomfortable, he had the habit of brushing back his hair, but he pulled it towards the same side as his hand, unlike the majority of people who push the hair across their forehead. Although O.W. was well respected, some students pointed out that this pattern resembled the action of an insect, which combs its antenna with a leg of the same side…


Simon Mortimer (CC BY-SA 2.0)

Figure 5. Silwood Park house, viewed from the southeast. Bramble in the foreground is on the edge of the crop area that is shown unplanted, and many years earlier, in Figure 4.

The field station had two main buildings at that time: the main house, a large country mansion (Figure 5),

and a lodge (Ashurst) some distance away[1]. Smaller structures included a separate building where meals were provided for residents of the field station, a feature that contributed greatly to the efficiency of the studies there. The 100 hectares of land had various types of more or less natural terrain as well as a few crops.

I returned to Silwood in late summer, and a tiny room on the top floor of the main house (identified in the caption of Figure 6) served as my accommodation for the next 3 years[2]. There was space for little more than a bed and a desk—but it was my own domain! My large laboratory on the ground floor was shared with two other students.

Mick Crawley (CC BY-SA 2.0)

Figure 6. Silwood Park house showing the front and the west faces. The room occupied by author Hugh Danks during his PhD is marked by the rearmost dormer on the right-hand side. Part of the conservatory can be seen below it. © Mick Crawley, geograph.org.uk/p/2246549.

Residents at the field station were part of an active community. Communication and morale were enhanced by conversations that took place over the meals served on site, and during afternoon tea held in the conservatory (the glass-roofed structure visible in Figures 5 and 6). Students also socialized at the nearby pub, although our perspectives differed from some of the local gentry, who might talk about Ascot hats or "Mummy's pony," for example. One of them accidentally jostled the student next to me, and then proclaimed in a haughty manner "I'm terribly sorry, old chap." The student responded deliberately with "'s aw'right, mate," a vernacular response that by no means resembled his normal accent. As he had anticipated, it prompted a mighty recoil!

There were organized activities too, such as a well attended Christmas party. One year I compiled a lengthy mix of music to play in the background throughout the event. However, my small tape recorder could not deliver the required volume for long enough without overheating[3], and one of the researchers agreed to lend me his more powerful laboratory machine. On the day of the party he told me that it would not be available because he had decided to run an experiment instead. His last-minute withdrawal despite an earlier promise was a reminder that some people do not take their commitments seriously, and it is wise to be self reliant, or at least to have a back-up plan.

Student activities included a rugby team that travelled to weekend games during the colder months, and a cricket match against the staff each summer. These and other joint ventures helped students to feel part of the department and connect with one another, and my later travels on behalf of the Biological Survey of Canada confirmed that graduate students everywhere do better in more cohesive settings.

O.W. Richards had an extraordinarily wide knowledge of entomology, but in addition he taught people, not just the subject, and was an excellent judge of what each individual might need. He

[1]From about 1988, offices and laboratories were in new buildings constructed near the old mansion, which was then used intermittently for other purposes until safety concerns dictated its closure in 2010. The building has heritage designation, but millions of pounds would be required to make it habitable, and it has been listed for sale, together with nearby land, to allow private development. Ashurst Lodge was sold in 1987.

[2]Many doctorates in England could be completed in 3 years, because students with high undergraduate grades deemed capable of independent research entered PhD programs directly, whereas in Canada and the United States, for example, few students proceeded to a doctorate without first completing an MSc. Also, undergraduate courses in England were closely prescribed, so that specialized subject knowledge for many beginning graduate students was significantly greater than in North America, and typically no additional courses were required.

[3]The reel-to-reel tape recorders then in use required more power than most modern systems.

knew my work as an undergraduate, and apparently had concluded that I was likely (and would prefer) to complete a project without constant prodding. At the beginning of my graduate work he told me: "Well, Danks, you seem to know what you are doing. Come and see me if you need anything." He delivered fully on the three occasions I did so, but being allowed to work chiefly on my own was of great benefit later in various jobs where I would be the only local scientist in my subject area. It reinforced my existing inclinations to plan for the long term, organize in detail, and use the scientific literature to maximum benefit.

However, another of the doctoral students he supervised had difficulties with taxonomy, and O.W. spent many Friday afternoons in the laboratory providing one-on-one training. Those intensive sessions were effective, and the student's project was successful.

Occasionally, O.W. would send an essential message with a different approach. A botany student arrived at the field station from the University of Oxford, and was convinced that his attendance at that venerable institution made him far superior to everyone else (although most of the other students regarded him as merely obnoxious). One day, Professor Richards was talking with a group of entomologists, including me, when that student interrupted forcefully to assert his opinion, which of course he deemed much better than any alternative. O.W. turned to look at him. "Oh," he said "I don't know you, do I?" ... although as head of the field station he must have known who the student was ... "You're a botanist, aren't you?" "Yes, sir," replied the student bumptiously. "Oh well, then," O.W. responded, as he turned away to continue his conversation with the entomologists, "I don't need to know you!"

My research at first harvested and examined the trap-nest bundles put out earlier in the year. Figure 7 illustrates a few cells in a typical nest. A record sheet documented the architecture of each nest and the dimensions and contents of its cells, and in due course identifications, emergence dates of living occupants (kept out of doors in individual vials), and other data, were added to the sheets.

H.Danks

Figure 7. Section through part of the nest of a solitary wasp in the pith of a bramble stem, showing a series of cells containing *Pemphredon* larvae, separated by partitions made of pith fragments. Larval length about 0.7 cm.

Subsequent seasons allowed more intensive trap-nest studies as well as general collecting of nests. Hundreds of stems were sliced open with a large scalpel to log the nest details or to reveal blind alleys—but only once was my finger sliced open instead. The doctor at the emergency clinic in Ascot showed little interest in the deep wound, and applied only a butterfly bandage (although stitches might have been no more effective). The scar persists as a memento of my work.

The study provided invaluable entomological training because so many kinds of arthropods had to be mounted and identified, including immature stages. The bramble-stem community comprised numerous species of wasps, bees, and their ichneumonid, chrysidid, chalcidoid, and tachinid enemies. Moreover, if a wasp larva failed to develop, the many prey items in its cell remained uneaten and could be identified, reflecting the activities of the adult that had collected them. Viviparous aphids were common prey, and so were spiders (mainly immature) of various families. Additional wasp species stocked flies (chiefly Nematocera), larval thrips, psyllids, psocids, or caterpillars. Pollen from plants visited by the bees also had to be determined.

Ian Tew/BWARS

Figure 8. The species most studied, the crabronid *Pemphredon* (then known as *Cemonus) lethifer*. Length usually about 0.65 cm. Image from Bees, Wasps & Ants Recording Society 2019. bwars.com/wasp/crabronidae/inae/pemphredon-lethifer

The most frequent species was an aphid-hunting wasp (Figure 8). Its nests, as well as those of other species, were

Figure 9. The ichneumonid *Perithous divinator*, which attacks stem-nesting aculeates. Length variable, typically about 0.8 cm. © Centre for Biodiversity Genomics (Photography Group).

Figure 10. The chrysidid *Pseudomalus* (then known as *Omalus*) *auratus*, which attacks stem-nesting aculeates. Length variable, typically about 0.5 cm.

often attacked by an ichneumonid (Figure 9) that oviposits through the stem wall, and by a chrysidid (Figure 10) that gains access while the nest is being built. Many of the parasitoids were relatively uncommon. The rarest species have been recorded only from stem-nesting aculeates, but always in very low numbers. Their populations must be unusually sparse.

Logging the cell contents produced a sort of retrospective life table, showing that aculeate mortality from egg to adult in typical species was only 40–60%, unusually low for insects. To obtain complementary data on developmental rate, fecundity, and longevity, at least one species had to be reared.

No account of how to culture successive generations of such species had been published, but various tests revealed the necessary conditions[4]. Then I went to see O.W. Richards, who quickly authorized my request for a costly rearing facility. Female wasps are active in warm sunshine, so a 100-watt tungsten-filament light bulb in a reflector provided the necessary light and radiant warmth to each cage; nesting sites, prey, and sugar solution were also made available (Figure 11). Mating would only take place if wasps emerged into these conditions from undamaged nests (like those in stems on the cage floor in Figure 11). Banks of cages (Figure 12) were housed in a room held at constant temperature, where powerful thermostatically controlled fans extracted surplus heat generated by the bulbs.

Figure 11. Rearing cage for solitary wasps, showing entrances to nest-galleries excavated in bramble stems (back R), young bean plants (in pots) bearing aphid prey, and (at top L) a tube with 5% sucrose solution, and a means for watering plants without opening the cage.

Figure 12. Part of the rearing facility, showing a set of brightly illuminated cages.

[4]Several species built nests in these conditions, but only those that stock aphids could be supplied with enough prey.

The wasps were successful in this setting, but normal nesting activity could be seen only by patient observers, who kept still for long periods. Females are easily disturbed, readily interrupt their sequences of instinctive behaviour, and may not resume them unaltered.

Female wasps consumed sugar, and also aphids in addition to those stocked in the cells. They could live for many weeks and construct more than 40 cells each. The species shown in Figure 8 developed through successive generations without delay in the laboratory, and had a partial second generation in the field.

These findings demonstrated that the reproductive potential of the wasps is high enough that their populations must be constrained by factors other than the limited mortality in the nests. Such factors were considered in another part of my study.

In addition to research, my editorship of the *Bulletin of the Amateur Entomologists' Society* continued (cf. ESC *Bulletin* **52**: 92). Correspondence was prepared with an ancient but sturdy manual typewriter (as in Figure 13), which occupied a significant area of the desk in my room. Learning to type on this machine without instruction left me with a forceful "visual hunt and peck" technique, albeit a relatively rapid one in the end[5].

Museum of Liverpool (CC BY-SA 3.0), modified

Figure 13. Vintage typewriter.

In my experience, entomologists (including hardworking graduate students) are happier when they have a few outside interests. One of my diversions was to learn folk songs, with fingerpicking accompaniment on my acoustic guitar. A link with Canada was established (although it did not seem significant at the time) because some of the songs were from the debut albums—all released during my PhD—of three outstanding Canadian singer-songwriters: Gordon Lightfoot, Leonard Cohen, and Joni Mitchell.

I also decided to teach myself to speak French, given hopeless inadequacies during travels in France as an undergraduate (ESC *Bulletin* **52**: 156). The structure of the language had been emphasized at school, but my vocabulary was limited and my conversational ability was abysmal. Indeed, my comprehension of spoken French was so poor that during a first visit I failed to understand when someone spoke to me in a shop. Asked to repeat what was said, he looked at me sternly: "J'ai dit bonjour!"

Three avenues helped me to improve. First, I compiled hundreds of common words in a notebook and learned them. My school textbooks had contained phrases that were less useful, such as "The postillion has been struck by lightning."

A second avenue was to translate information by French authors about stem-nesting wasps and bees. One series of particularly lengthy papers was written in an old-fashioned style, and for page after page even minor findings were elaborated with both common and obscure words. It took several months to hammer out the translations laboriously on my old typewriter.

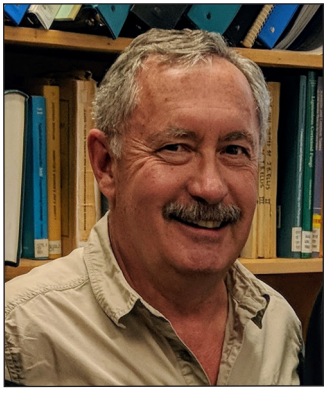
[5]Making changes was much more troublesome than today, when computers allow documents to be modified on-screen, reprinted, and transmitted electronically. The typed sheet of paper was corrected by overtyping after applying correction fluid ("Wite-out") or correction strips, although a page with multiple errors was usually retyped. Before photocopiers became prevalent, copies were generated with carbon paper, which transferred the imprint of each letter to a second sheet—a system echoed by "cc" (carbon copy) in current email systems. A mistake could be erased on the copy, although differential movement of the sheets had to be avoided when the typewriter carriage was rotated to access it. Correcting the top sheet then rectified the copy too. When errors were discovered later, the top and carbon copies might be corrected separately.

Third, I listened whenever possible to French-language broadcasts of the British Broadcasting Corporation, especially the news. The introduction lingers in my memory because it was repeated for every broadcast: “Ici Londres. Vous écoutez en ce moment le …ième bulletin d’information en langue française de la service européenne de la BBC...”.

Eventually, my progress was marked by the fact that I understood a joke. The achievement gave me confidence, so when a student who briefly visited the field station from Belgium had trouble in English, I spoke to him in French—but was disappointed when he just stared at me. Only later was it clear that he came from the Flemish community of that country, members of which maintain some friction with their French-speaking counterparts!

My efforts to learn French would prove useful in due course not for anticipated travel in Europe, but for living in Canada. However, the accents and joual there posed major challenges to someone familiar only with the standardized language and measured tones of newscasters from the European Service of the BBC![6] Going to Canada, though, would depend on completing my doctorate, including estimates of aculeate populations, as outlined in the next article in this series.

[6]Those challenges continue!


M. Noseworthy

Leland Medley Humble
(3 November 1951 – 4 August 2020)

Leland Medley Humble passed away peacefully at home on 4 August 2020 with his family by his side. Lee was born 3 November 1951 in Dawson Creek, British Columbia, and was raised in Nelson, a beautiful town nestled in the Selkirk Mountains in eastern BC. Here, where nature was at his doorstep, Lee developed an appreciation of the outdoors at an early age. Following high school, he worked as a heavy equipment operator for the Canadian Pacific Railroad; trains remained a passion for Lee for the rest of his life. Lee attended Selkirk College in Nelson and completed his undergraduate training in biology at the University of Victoria in 1977. It was here that he started his life-long fascination with insects and, under the guidance of Richard Ring, completed his PhD on insect cold tolerance with his dissertation on "Life histories and overwintering strategies of some arctic sawflies and their hymenopterous parasitoids". His graduate research took him to the Canadian high Arctic for several summers. He had many stories to tell of his adventures in the north: remote camps, exciting flights in small planes, encounters with large animals and memorable interactions with locals and other researchers.

These were busy years for Lee; at the same time as being a full time PhD student, he was the father of a young family and had a job with Dave Gillespie at Agriculture Canada studying parasites and hyperparasites of the European winter moth, *Operophtera brumata* L. In 1985 a position for a forest entomologist came open at the Pacific Forestry Centre with the Canadian Forest Service in Victoria. John Borden, then a professor at Simon Fraser University, inspired by a research talk that he heard Lee give, encouraged him to apply for the job. So began a 35-year career of scientific discovery, collaboration and fun; Lee often remarked at his good fortune to be paid for enjoying his hobby! Lee was hired to provide entomology support to the federal Forest Insect Disease Survey (FIDS), specifically for the BC & Yukon Region. This involved rearing and identifying forest insects collected in the annual surveys, overseeing the insectary and Pacific Forestry Centre Arthropod (PFCA) collection and providing general diagnostic services; and pursuing research interests in what time remained. One of these areas of research examined the biodiversity of arthropod communities in the tree canopies of temperate rain forests; work with Neville Winchester and Richard Ring and as a component of the Montane Alternative Silviculture Systems (MASS) project.

Lee was an active participant in the British Columbia Plant Protection Advisory Council (BCPPAC) and, in addition to chairing the forest pest committee and serving on the Regional Emergency Action Coordination Team (REACT), he was actively involved in the science and politics of gypsy moth control. He provided advice regarding the European gypsy moth, *Lymantria dispar dispar* L. and the Asian gypsy moth, *L. dispar asiatica, L. dispar japonica, L. umbrosa, L. albescens,* and *L. postalba,* found in North America, associated with cargo ships in 1991. Lee helped develop a DNA-based diagnostic test to differentiate the European from the Asian sub-species and in the process set up a high security quarantine room at the Pacific Forestry Centre. In the early 1990s, his Asian gypsy moth work took him to the Russian Far East where he worked on an international collaboration addressing moth attraction to light at shipping ports. This led to adventures

in the forests of Siberia and opened his eyes to the significance of the international movement of forest pests.

A few years later, in 1996, two important events dramatically affected Lee's career: the FIDS program was ended and the Asian longhorned beetle, *Anoplophora glabripenn*is (Motschulsky), was found in Brooklyn, New York. Lee now focused most of his time on alien invasive species; identifying established alien species, developing surveillance and diagnostic tools, studying pest movement pathways and finding practical mitigation opportunities.

He kept his research relevant to real issues by working closely with the Canadian Food Inspection Agency (CFIA), the US Animal and Plant Health Inspection Service (APHIS), and the US Forest Service as well as international organizations such as the International Union of Forest Research Organizations (IUFRO), the International Forestry Quarantine Research Group (IFQRG) and the North American Plant Protection Organization (NAPPO). Lee carried out joint research projects on forest insect detection systems in China with scientists at the Chinese Academy of Forestry and was recognized as an associate research scientist at the Jilin Provincial Academy of Forestry Science. His expertise in insect rearing techniques provided key data to support the development and refinement of the international wood packaging standard, ISPM 15. Lee also continued his work on preventing the introduction and establishment of Asian gypsy moth by providing his scientific expertise during discussions with Asian countries impacted by the implementation of the North American phytosanitary standard – Guidelines for Regulating the Movement of Vessels from Areas Infested with the Asian Gypsy Moth (NAPPO RSPM 33).

Lee worked throughout his career on locating and identifying predators of hemlock woolly adelgid, *Adelges tsugae* Annand. In the early 2000s he identified *Laracobius nigrinus* Fender as a biological control agent for use in eastern North America and more recently he located and collected hemlock woolly adelgid for further work on new biocontrol agents with graduate students and colleagues in Canada and the USA.

Lee was also keenly interested in the curation of insect collections and contributed to and modernized the collection at the Pacific Forestry Centre. In addition to the physical collection, he helped build DNA reference libraries for many groups of insects including bark and woodborers and contributed through his own collections and those of his PhD student, Jeremy deWaard, to the Barcode of Life project with Paul Hebert.

In the final major project of his career, Lee circled back to some of the skills he learned in graduate school, thermotolerance of insects. But this time, instead of cold, he built a device to very precisely measure the high temperatures required to kill insects. This elegant piece of equipment, now known as the Humble Water Bath, hand-crafted by Lee, is a critical tool that will be used to change global trade regulations in years to come.

Lee Humble was a great teacher and mentor. He was an adjunct professor at the University of British Columbia and served on the Master's and PhD committees of numerous graduate students including Ashley Lamb, Gabriella M. Zilahi-Balogh, Jeremy deWaard, Susanne Kuhnholz, Cynthia Broberg, Stacey Wilkerson, Sepideh Massoumi-Alamouti and Eveline Stokkink. He also mentored many students through the co-op program, many of whom came back year after year and were so inspired that they became entomologists themselves. His true classroom, however, was in the forest where he knew plants and insects and how they interacted. He was always looking for ecological connections, formulating theories and planning new experiments. Those who were lucky enough to work with him in the field experienced Lee in his element.

Lee was the recipient of many well deserved awards including the Commemorative Medal for the 125th Anniversary of the Confederation of Canada, for service to Canada (1992), the Canadian Forest Service Merit Award for Team Achievement (1999), Natural Resources Canada

(NRCan) Department Merit Award (1999), the Head of the Public Service Award for Excellence in Policy (1999), Outstanding Foreign Expert Award from Jilin Province, PR China (2001), Ontario Federal Council, Leadership through Collaboration Award (2004), the Canadian Forest Service Achievement Award (2012), Lifetime Achievement Award, Professional Pest Management Association of British Columbia (2012), NRCan Departmental Achievement Award (2013).

In addition to his passion for entomology, Lee was a skilled woodworker, photographer and wildlife enthusiast. Many specialized pieces of lab equipment were meticulously designed and crafted out of wood, plastic or metal by him. He was brimming with novel ideas, full of knowledge of entomology, botany, ecology, forestry, and had an unstoppable enthusiasm for science. He was a true renaissance scientist.

Lee Humble was an exceptional scientist who inspired his colleagues with his passion for science and made significant contributions to forestry and entomology. John Borden, his mentor and long-time colleague and friend, fittingly said, “An invasive insect lurking in British Columbia’s forests will not regret the passing of Lee Humble but all of us who knew him certainly will”.

Meghan Noseworthy and Eric Allen
Pacific Forestry Service, Victoria

E. Allen

Lee at the microscope.

Monty Wood passed away peacefully on 24 August 2020 after partially recovering from a serious illness in July. He had been looking forward to resuming his numerous research collaborations following his recovery.

J. O'Hara (Ottawa, 1991)

Donald Montgomery (Monty) Wood (22 December 1933 – 24 August 2020)

Monty was born on 22 December 1933 in London, Ontario. He was an avid naturalist from an early age and his broad passion for nature persisted throughout his life even as his career path became more focused on entomology during his university years. He received his BA and MA degrees from the University of Toronto in 1956 and 1959, respectively, studying elusive beaver beetles for the latter. A switch to black flies and the guidance of Douglas Davies at McMaster University in Hamilton resulted in a PhD degree on the *Eusimulium*-group in 1963.

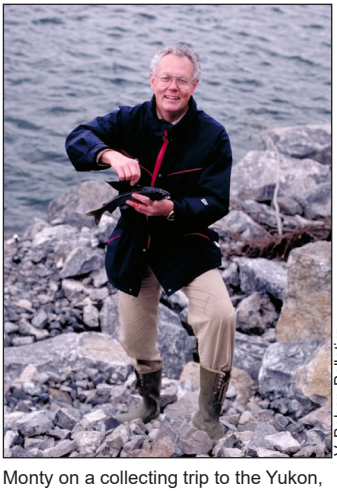
Monty joined Agriculture Canada in 1964 as a research scientist and taxonomist in the Diptera Unit of the Canadian National Collection of Insects (CNC) in Ottawa. Monty initially continued to study the systematics of black flies and published periodically on the family for numbers of years, but his broad interests and skills ensured that he developed expertise in understanding Diptera more broadly, including adults and their immatures. He became an authority on Culicidae, Asilidae and numbers of other smaller families. Ultimately, he focused on one particularly large and difficult family, the Tachinidae. Few systematists have had that breadth of knowledge of such diverse groups, including their different life stages.

It was at an early point in Monty's career that the CNC dipterists launched an ambitious project in 1966 that would involve nearly all of them, to varying degrees, over the next 2 decades (Cumming et al. 2011). Their plan was to coordinate a team of international dipterists in the preparation of a manual for the identification of the families and genera of flies of America north of Mexico. This culminated in the publication of the three volumes of the *Manual of Nearctic Diptera* in the 1980s (McAlpine et al. 1981, 1987; McAlpine and Wood 1989; available online at https://esc-sec.ca/publications/aafc/) and brought international acclaim to the six CNC dipterists who led the project. For the first time, there was a concerted effort to understand the homologies among the hugely diverse members of the order from a strictly Hennigian phylogenetic perspective. Willi Hennig spent 3 months in Ottawa in 1967 and strongly influenced the direction of the manual. Cladistic perspective became the centre point for a better understanding of these flies. Monty was the last surviving member of that illustrious team.

Monty authored several chapters for the *Manual* including the one for the Tachinidae. At the time, the Tachinidae comprised 414 genera in America north of Mexico according to the most recent catalogue (Sabrosky and Arnaud 1965). This was an oversplit classification that was largely the legacy of an early American tachinidologist, C.H.T. Townsend, and a near-impossible one for Monty to follow for his generic key in the *Manual*. To construct a workable key, he first needed to re-evaluate the morphology, evolutionary history and classification of the family. Trips abroad to study types and confer with the leading European tachinidologists of the day, Louis Mesnil and Benno Herting, were instrumental in this process. A revolutionary classification of Nearctic Tachinidae was taking shape in Monty's mind during the 1970s as he studied the hundreds of genera and compared them to the more progressively arranged genera, tribes and subfamilies of

the Palaearctic Region. The first substantial glimpse of his vision for the Nearctic fauna came in the form of a taxonomic conspectus of the Blondeliini of North and Central America and the West Indies (Wood 1985). In this work, the tribe was redefined for the New World and an astonishing 177 new generic-level synonyms and 321 new species-level combinations were proposed. Two years later, the *Manual* chapter appeared (Wood 1987) and a further reduction in genera to a total of about 330 was incorporated into the key (see O'Hara and Wood 1998). These changes revolutionized the classification of Nearctic Tachinidae and later served as the framework for a regional catalogue (O'Hara and Wood 2004). Similarly, his co-authored chapter on the phylogeny of the Nematocera in the third volume of the *Manual* provided a cladistic basis for the phylogeny of this diverse group of flies and launched numerous further studies that have refined our understanding of this group (Wood and Borkent 1989).

Early retirement in 1986 was followed by 34 years as an active Honorary Research Associate at the CNC, a position Monty held until his death. These were intensely active years for his research and field work and included many collaborations internationally and with his close colleagues in the Diptera Unit. He was appointed a Research Associate with various institutions including Instituto Nacional de Biodiversidad (Costa Rica), National Museum of Natural History (Washington), American Museum of Natural History (New York), Carnegie Museum of Natural History (Pittsburgh), and Florida State Collection of Arthropods (Gainesville). Monty enjoyed teaching and regularly served as an Adjunct Professor at Carleton University in Ottawa during the 1970s and 1980s, where he had an enormous impact on the lives of several students such as Art Borkent, Brad Sinclair and Andrew Smith.



V. Behan-Pelletier

Monty on a collecting trip to the Yukon, 1987.

Monty had a keen interest in field studies and spent part of almost every year of his adult life on collecting trips throughout the world until he was physically unable to travel. An interest in the effects of the Bering Land Bridge on the Canadian insect fauna took him and some colleagues to the Yukon on several occasions in the 1980s. These trips resulted in valuable collections of insects and other arthropods as well as a publication with lepidopterist Don Lafontaine on the zoogeography of Beringian Noctuidae (Lafontaine and Wood 1988).

R. Cannings

Monty, Pelee Island, Ontario 1985.

A greater emphasis on Neotropical Tachinidae after retirement was accompanied by more field travel to the southern portion of the Americas, from Mexico to southern Chile and most countries between. Monty purchased land in the biologically-rich cloud forest of Costa Rica and built a field station there, Estación Biológica Monteverde, in 1989. This station continues to operate today on the principles of conservation, education and research. Monty's private insect collection of some tens of thousands of beautifully prepared specimens has largely been donated over the past few years to the CNC. The Tachinidae benefited most from this donation and the CNC's tachinid collection is now the largest and taxonomically richest in the world.

Monty authored or co-authored more than 100 scientific publications (see partial list in Cumming et al. 2011, Appendix A). This included seven chapters in the *Manual of Nearctic Diptera*, including the aforementioned chapter on Tachinidae and a co-authored chapter on the phylogeny and classification of the Nematocera (Wood and Borkent 1989). He was lead author on the masterful 390 page handbook *The Mosquitoes of Canada* (Wood et al. 1979), which provided for the first time a complete presentation of all the species in our country, including both adults and larvae, keys to each species, their distributions and a detailed overview of their biology. He also was co-author of the highly acclaimed book *The Black Flies (Simuliidae) of North America* (Adler et al. 2004). His broad knowledge was also reflected in a pivotal paper which discussed and eloquently illustrated the homologies of the male genitalia of nematocerous families (Wood 1991). He was a member of the editorial team for the two-volume *Manual of Central American Diptera* (Brown et al. 2009, 2010), and an author or co-author on six of its chapters, including lead author on the Tachinidae, the largest chapter in the *Manual* and a summary of many hundreds of hours spent in Central America collecting and studying this family (Wood and Zumbado 2010). The adult morphology and terminology chapter in the *Manual* (Cumming and Wood 2009), along with its most recent version (Cumming and Wood 2017), are now the standard treatments on the morphology of the order and are used by virtually all dipterists.

Over the course of his long career Monty published or co-published 240 new Diptera taxa (4 family-group names, 3 genus-group names and 233 species-group names) and was honoured with 33 scientific patronyms authored by fellow taxonomists in recognition of his scientific achievements (see http://www.canacoll.org/Diptera/Staff/Wood/Wood_Patronyms.pdf).

What follows here is the personal experience of AB, illustrating Monty's generous support of others. "When I arrived in Ottawa in the fall of 1978 to begin a PhD study of midges (Chironomidae), Monty offered me a technical position working on his world catalogue of Tachinidae. Months of photocopying and filing papers followed but during that time, Monty and I debated the ins and outs of Diptera taxonomy, with him patiently and repeatedly showing me specimens from the collection that either indicated how previous publications were flawed or that my views were limited. Hence, an important lesson – in any debate, and certainly in areas of doubt – always go back to the specimens. At the same time, he showed how important well preserved and prepared specimens were in making comparisons – and this was, and remains, a standard at the CNC, with its vast collection of excellent specimens. As spring came in 1979, Monty asked if I would prefer to start my first field season instead of photocopying, giving me an extra field season of data before officially starting my PhD that fall. It was an opportunity I leapt at. However, when I started my collecting efforts, I despaired of finding the pertinent species I had chosen to work on. Consulting a distant colleague, Monty was able to locate the exact aquatic habitat and in showing me, we discovered the species were actually very common locally. Another lesson – many groups previously considered rare are in reality an expression of a lack of knowledge of the diversity of habitats actually present. Monty likewise uncovered numbers of other 'rare' groups that were important to subsequent phylogenetic studies. His interest in natural history was vast, with a broad knowledge of plants, vertebrates, and many other insect groups. He had a deep interest in historical zoogeography and evolution in its breadth.

Monty became my research supervisor a few months into my PhD and this changed my life. He shared his knowledge so freely and we debated so happily that my knowledge grew by leaps and bounds. Monty also supported my degree in several other remarkable ways. When he recognized that making slide preparations was a real bottleneck in my studies, he hired a student to prepare these, freeing up a huge amount of time to undertake other tasks. He also provided the means for field work locally and trips to numbers of locales: British Columbia, South Carolina, Arizona, and Ecuador, among others. When finishing up, he hired Ralph Idema, artist extraordinaire, to

provide numerous illustrations for the thesis (Borkent 1984). Throughout, he encouraged and directed on the basis of his profound knowledge, always in the most encouraging and egalitarian manner. This included a unique year-long course he taught at Carleton University called 'The Phylogeny of the Diptera'. We worked over the literature and specimens for many hours together and one product was ultimately the chapter in the third volume of the *Manual* on the phylogeny of the Nematocera (Wood and Borkent 1989). In short, Monty provided the freedom and financial support to complete this part of my studies in almost idyllic conditions. After I was hired by Agriculture Canada, we continued to work together, with many hours of discussion about nature, science and the various issues we were confronting in our research (and often with a small group of colleagues who gathered every Wednesday at noon to debate papers). One thing was very obvious about Monty – he demanded the highest standards in doing the best science possible. It was another lesson that percolated through all of his work and how he saw that of others – a wonderful characteristic for a scientist to have. And a wonderful experience for me and so many others. After I left Agriculture Canada in 1989, our relationship continued, particularly through connections in Costa Rica, where we both shared in the process of studying our groups there (particularly at INBio) and then with others in the organizing and implementing of what led to the *Manual of Central America Diptera*. He and Grace's apartment near INBio was generously made available for the many times I visited there over the years. And that, as in so many other ways, was what Monty was about: liberally helping others to do good science and ensuring in his own work, the highest standards were met."

Monty will be sorely missed but fondly remembered for his kindness in sharing his remarkably broad knowledge so freely with friends and colleagues, his love of nature, and his generosity in the pursuit of science. He is survived by his loving wife Grace of 57 years, his son Kenneth, daughter Sheila (Bernie Wynia) and grandson Andrew Wynia.

A video of a portion of the Memorial Service held in remembrance of Monty on 19 September 2020 is available on YouTube at https://www.youtube.com/watch?v=DroihFcHWyI.

A. Borkent

Monty and Grace Wood, 8th International Congress of Dipterology, Potsdam, Germany 2014.

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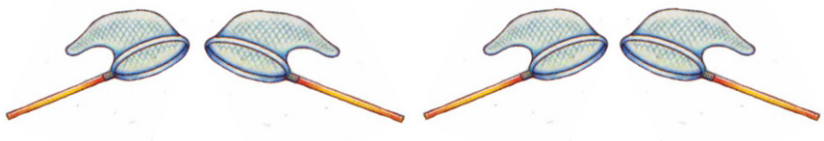
James E. O'Hara and Jeffrey M. Cumming
Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario
Art Borkent
Salmon Arm, British Columbia



Georges Brossard (1940-2019)
L'avocat des insectes

Le 26 juin dernier, l'entomologiste autodidacte et fondateur de l'Insectarium de Montréal, Georges Brossard s'est envolé pour d'autres horizons. La Société d'entomologie du Québec a souhaité rendre un dernier hommage à celui qui a permis de vulgariser l'entomologie auprès du grand public. Nous avons confié le soin de nous rappeler qui était Georges Brossard à l'un de ses amis, Stéphane Le Tirant. Voici donc un résumé de ce qu'aura été la carrière de ce notaire passionné d'entomologie.

Georges Brossard est né à La Pairie et est le fils d'un cultivateur. Son père, Georges Henri Brossard, allait devenir maire de la ville qui porte désormais son nom (Brossard) – une grande ville de la rive sud de Montréal. Il ne fut jamais battu lors d'une élection. Georges Brossard, lui, était notaire de profession.
Le fondateur de l'Insectarium de Montréal fit fortune en travaillant d'arrache-pied et en révolutionnant le notariat. Ainsi, à l'âge de 37 ans, sa véritable passion qu'il avait momentanément quittée, mais qui était présente depuis son tout jeune âge, allait bientôt devenir un travail à temps plein : l'entomologie ou la science qui étudie les insectes.

Ainsi, Georges entreprit de voyager dans plus de 100 pays pour récolter des milliers d'insectes. À son retour au Québec, il fit de nombreuses expositions avec sa collection jusqu'au jour où, après avoir exposé ses insectes au Jardin botanique de Montréal, il réussit à créer l'Insectarium de Montréal avec la complicité de son ami Pierre Bourque et l'approbation du maire de Montréal Jean Drapeau. Les Québécois avaient répondu positivement et en grand nombre à ses expositions. Ils avaient également participé à la campagne de financement de l'Insectarium. Ce musée qui pique la curiosité des Québécois et des visiteurs en général fut la véritable bougie d'allumage pour une multitude d'autres projets.

Denis Blaquière

Georges Brossard tenant une loge avec une reine termite en Afrique du sud.

Suzanne Schiller

Georges Brossard sur un site de migration du papillon monarque au Mexique.

Stéphane Le Tirant

Visite du Dr Ronald D. Cave (Université de la Floride) et du Dr Brett C. Ratcliffe (Université du Nebraska) dans le laboratoire de Georges Brossard.

This tribute was published originally in Antennae*, the newsletter of the SEQ, Volume 26(3) 2019. We thank the Editor of* Antennae *for allowing us to reprint it here.*
Cet hommage a été publié à l'origine dans Antennae*, le bulletin d'information de la SEQ, volume 26(3) 2019. Nous remercions la rédactrice en chef d'*Antennae *de nous avoir permis de le réimprimer ici.*

Stéphane Le Tirant

Le bureau de Georges Brossard et une partie de sa collection dans son sous-sol de sa maison à St-Bruno.

> Les hommes sont étranges. Ils ont construit des jardins botaniques pour les plantes, des planétariums pour la compréhension des planètes, des zoos pour les grands animaux, des aquariums pour les poissons, des volières pour les oiseaux, mais pour les insectes, rien ! C'est comme si cette classe animale n'avait pas de classe. Pourtant, de tous les animaux qui vivent sur terre, les insectes sont parmi les plus importants. Ils sont des nourrisseurs, des vidangeurs, des décomposeurs, des producteurs, des contrôleurs, des pollinisateurs. Et que font les hommes en retour ? Ils les chassent à coup d'insecticides, fongicides, pesticides, herbicides. Il est temps de réconcilier les hommes avec cette classe qui a beaucoup de classe, la classe des insectes. Je vais construire un temple pour honorer les insectes que je nommerai : Insectarium.
>
> *Georges Brossard, 1978*

En quelques années, et avec l'aide de proches complices, Georges fut l'instigateur de l'Insectarium de Terre-Neuve, de Shanghai, de La Nouvelle-Orléans, de Québec et de Bonaventure. Il fut aussi l'un des créateurs ainsi que l'animateur de *Mémoires d'insectes, Insectia 1* et *Insectia 2* qui furent diffusés dans 150 pays par les chaines « National Geographic Channel » et « Discovery ». Naitra ensuite un film (*Le papillon bleu*) basé sur une histoire vécue, où Georges amène un jeune garçon malade (David Marenger) chasser le fameux papillon bleu dans le cadre de la fondation « Rêves d'enfants ». Il multiplia pendant des années les apparitions à la télévision avec des insectes vivants. Il répondit aussi, et ce, toujours en vulgarisant, à une multitude de questions du public et à différents médias pendant plus de trente ans.

Georges Brossard n'avait rien d'un homme normal. Il était polyglotte, gymnaste, féru de droit, homme d'affaires avisé, entomologiste et muséologue, pêcheur exceptionnel, pilote d'avion, conférencier, philanthrope et surtout un excellent communicateur. Il avait fait le tour du monde plusieurs fois et donné des centaines de conférences. Il fut le conférencier invité lors du congrès conjoint en l'an 2000 de la Société d'entomologie du Québec, du Canada et des États- Unis qui réunit, à Montréal, plusieurs centaines d'entomologistes. Jusqu'à tout récemment, il donnait régulièrement des conférences sur l'entrepreneuriat, la gestion de l'environnement, l'éducation et la motivation, et ce, tant dans le milieu des affaires qu'au niveau scolaire.

Georges a également reçu de nombreux honneurs au cours de sa vie. Parmi les plus importants, citons l'Ordre du Canada (2002), du Québec (2006) et de Montréal (2012). Il a reçu deux doctorats honorifiques (Université McGill et Université du Québec à Trois-Rivières). Il est récipiendaire de la médaille Louis-Riel (1992), du Jubilé de la Reine Élizabeth II (2002), du Magnolia Blanc (Shanghai-1998) et de l'Assemblée nationale du Québec (2012). Il fut aussi honoré par la Société d'entomologie du Québec (décoration Léon Provancher - 1988) et l'Association des entomologistes amateurs du Québec. Georges Brossard était membre honoraire du Cercle des jeunes naturalistes. Il reçut aussi des prix relativement à l'environnement.

Au-delà de son crédo qui lui servit toute sa vie à faire la promotion des insectes et à créer

différents moyens pour transmettre sa passion aux Québécois, aux Canadiens et partout dans le monde, Georges fut aussi et avant tout, un homme et un vulgarisateur hors pair doté d'un rare charisme et d'un profond humanisme. Autrefois, cette science qu'est l'entomologie n'était accessible qu'aux scientifiques. Aujourd'hui, de nombreux amateurs et entomologistes professionnels ont été influencés d'une façon ou d'une autre par Georges Brossard. De nombreux entomologistes professionnels étaient de bons amis de Georges Brossard. Ces derniers reconnaissaient ses talents de vulgarisateurs qui faisaient connaitre un peu plus l'importance de leur travail. Georges Brossard savait comment partager et transmettre sa passion. Pour les plus jeunes, il exerçait la même fascination que les grands explorateurs. Georges aimait le monde et en particulier les enfants, et ces derniers le lui rendaient bien. Il avait d'ailleurs participé à plusieurs campagnes de charité pour les enfants autistes, pour la Société pour les enfants handicapés ainsi qu'à quelques campagnes de financement pour enfants de l'Hôpital Enfant-Jésus de Québec. Pour plusieurs, il était aussi un véritable et fidèle ami ainsi qu'un excellent compagnon de voyage. Comme le mentionnait son ami, l'ancien maire de Montréal et directeur du Jardin botanique, M. Pierre Bourque, lors d'une entrevue : c'est tout le Québec à qui il va manquer!

Stéphane Le Tirant, Conservateur de l'Insectarium de Montréal.

Références

Kahle, Barbara. 2014. Georges Brossard : audace et démesure. Québec/Amérique. 317p.

Le Tirant, Stéphane et B. C. Ratcliffe. 2017. Georges Brossard, an Advocate for Insects. Scarabs Newsletter. P.10-17.

Le Tirant, Stéphane. 2003. Rêve d'enfant et la magie du papillon bleu. Les Naturalistes. p.22

G.W. Courtney

Predaceous diving beetles (Dytiscidae: *Graphoderus occidentalis* Horn); Engeldinger Marsh, Iowa; April 2020

Books available for review / Livres disponibles pour critique

The ESC frequently receives unsolicited books for review. A list of these books is available online (http://esc-sec.ca/publications/bulletin/#toggle-id-2) 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 (Deepa Pureswaran, deepa.pureswaran@canada.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.

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 (jpeg or tiff format, about 500 kb) should be submitted with the review.

La SEC reçoit fréquemment des livres non demandés pour des critiques. Une liste de ces livres est disponible en ligne (http://esc-sec.ca/publications/bulletin/#toggle-id-2) et est mise à jour lorsque de nouveaux livres sont reçus.

Si vous souhaitez critiquer un de ces livres, veuillez envoyer un message au président du comité des publications (Deepa Pureswaran, deepa.pureswaran@canada.ca).

Vous devez brièvement indiquer vos qualifications pour critiquer le sujet du livre, et être en mesure de terminer votre critique en 8 semaines.

La préférence est donnée aux membres de la SEC.

Lignes directrices

Les critiques de livre doivent compter entre 800 et 1200 mots. Elles doivent clairement identifier le sujet du livre et si le livre rencontre bien les objectifs énoncés. Les forces et faiblesses du livre devraient être décrites.

Le format des textes doit suivre celui des critiques des récents numéros du Bulletin. Une version numérisée de la couverture du livre (en format jpeg ou tiff, environ 500 kb) devra être soumise avec la critique.

Books available for review (as of November 2020)

Curtain, C.G. & T.F.H. Allen [Eds.]. 2018. Complex Ecology: Foundational Perspectives on Dynamic Approaches to Ecology and Conservation. Cambridge University Press. ISBN: 9781108235754 [paperback].

Dale, M.R.T. 2017. Applying Graph Theory in Ecological Research. Cambridge University Press. ISBN: 9781316105450 [paperback].

Danks, H.V. 2017. The Biological Survey of Canada: A Personal History. Biological Survey of Canada. ISBN: 978-0-9689321-9-3 [e-book].

Eiseman, C. 2019. Leafminers of North America. [e-book].

Forman, R.T.T. 2019. Towns, Ecology and the Land. Cambridge University Press. ISBN 978-1-316-64860-5 [paperback].

Frank, B., J.A. Klikman and S. Marchini. 2019. Human-wildlife interactions. Turning conflict into coexistence. Cambridge University Press. ISBN: 978-1-108-40258-3 [paperback].

Gibson, D.J. and J.A. Newman [Eds.]. 2019. Grasslands and Climate Change. Ecological Reviews. Cambridge University Press. ISBN 978-1-316-64677-9 [paperback].

Kaufman, A.B., M.J. Bashaw and T.L. Maple [Eds.]. 2019. Scientific Foundations of Zoos and Aquariums: Their Role in Conservation and Research. Cambridge University Press. ISBN 978-1-316-64865-0 [paperback].

Klimaszewski J., et al. 2020. Synopsis of adventive species of Coleoptera (Insecta) recorded from Canada. Part 5: Chrysomeloidea (Cerambycidae, Chrysomelidae, and Megalopodidae). Advanced Books. [e-book] doi: 10.3897/ab.e50613.

Leidner, A.K. and G.M. Buchanan [Eds.]. 2018. Satellite Remote Sensing for Conservation Action: Case Studies from Aquatic and Terrestrial Ecosystems. Cambridge University Press. ISBN 978-1-10845670-8 [paperback].

Pettorelli, N., S.M. Durant and J.T. du Toit [Eds.]. 2019. Rewilding. Cambridge University Press. ISBN 978-1-108-46012-5 [paperback].

Pohl, G.R. et al. 2018. Annotated Checklist of the Moths and Butterflies (Lepidoptera) of Canada and Alaska. Pensoft *Series Faunistica* No 118. ISBN 978-954-642-909-4 [e-book].

Saguez, J. 2017. Guide d'identification des vers fil-de-fer dans les grandes cultures au Québec. Centre de recherche sur les grains. ISBN: 978-2-9813604-5-8 [e-book].

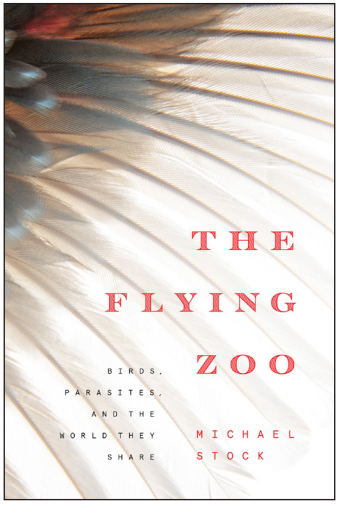
Skevington, J., M.M. Locke, A.D. Young, K. Moran, W.J. Crins and S.A. Marshall. Field Guide to the Flower Flies of Northeastern North America. 2019. Princeton University Press. ISBN 978-0-691-18940-6 [paperback].

Volis, S. 2019. Plant Conservation: The Role of Habitat Restoration. Cambridge University Press. ISBN 978-1-108-72733-4 [paperback].

Wilson, K., A. Fenton, and D. Tompkins [Eds.]. 2019. Wildlife Disease Ecology. Linking theory to data and application. Cambridge University Press. 978-1316-50190-0 [paperback].

Book review / Critique de livre

The Flying Zoo: Birds, Parasites, and the World They Share. Stock, M. 2019. The University of Alberta Press, Edmonton. xi + 260 pp. Paperback ISBN 978-1-77212-374-6. Pdf ISBN 978-1-77212-440-8.



I will get nitpicks out of the way because I want to finish on a positive note. The van Riper's names are misspelled, as is Craig Benkman's. The late Nicola Saino is referred to as being female; easy mistake. *Paser monantus* instead of *Passer montanus*. The referencing was baffling and even maddening; superscripted numbers began at 1 for each chapter, and the same reference in the same chapter could have multiple numbers (e.g., Rothchild and Clay's book is both reference 15 and 26 in Chapter 2) and be used in multiple chapters. Moreover, because the reference section is not alphabetical, it is painful to track down citations. A single alphabetical numbered set of references would have been much more penetrable. For example, in the text, one could write "observation x^{252}." and in the reference section, one might have "252. Watson, J. M. year. title. source." A final gripe is that the majority of figures and tables are not cited in the text.

Now, to business. Author Michael Stock was an MSc student of Bill Samuel and PhD student of John Holmes, two figures writ large in the realm of parasitology. Stock went on to an academic posting, specializing in parasitology, at MacEwan University in Edmonton, from which he retired in 2019. His enduring passion for parasites is obvious from the text. The book is mostly about the various macroparasites of birds; occasional reference is made to microparasites but largely in the context of macroparasites. The first chapter is about general aspects of parasitism, followed by separate chapters on lice, fleas, ticks, mites, flies, helminths, and "others". The last two chapters

focus on a variety of general topics; Chapter 9 is mostly about sexual selection, and the last chapter is mostly about how human meddling is shaping and will continue to shape symbioses of the preceding organisms with birds.

Throughout, there is a peppering of nifty trivia, such as how keratinaceous bacteria occupy female lice reproductive tracts so that the former are transferred to eggs, enabling young lice to immediately digest feathers. But there is also substance; various well-studied host-parasite systems are described in detail. Many of the characters and stories associated with these systems are familiar to me, but there were many new stories that were fun to read about. For instance, I was only peripherally familiar with the *Ixodes uriae* tick-king penguin symbiosis on islands in remote parts of the south Pacific, and Stock stitches together an engaging story of both proximate consequences and ultimate coevolution between the players. Among other things, I also enjoyed reading lovely descriptions of separate areas of avian digestive tracts.

The book is clearly written, engaging, and mostly approachable even for non-biologists. Stock considers all kinds of literature, ranging from modern phylogenies to minutiae of parasite structures, to history (e.g., Socrates and how far fleas can jump), and some of this rich tapestry is apt to hold something from which all readers will be able to learn. There are, however, instances where the writing gives misleading impressions (e.g., one could be forgiven on p. 20 for thinking chitin is unique to fleas, or on p. 179 that pheasants deliberately become infected with caecal nematodes to reduce health of red grouse competition). Stock suggested that he wanted to minimize technical language, but regularly falls back on it (e.g., rictal bristles). For the most part the language is explained, but much of it probably could have been avoided. One term not explained is "primitive" which to most lay readers would suggest "inferior". All minor criticisms.

Throughout, I paused at places where established theory was not used to explain general patterns. For example, Stock describes parasites that are benign (he even uses the term beneficial in a few instances, which means they've stopped being parasites and become mutualists) and parasites that cause great harm, but the concept of optimal virulence is not used to explain why this continuum of benefit/harm has evolved. There are many places where the concept of optimal virulence is hinted at, but not clearly enough for many readers to grasp. On p. 67 and elsewhere, group selection thinking creeps in; here, he suggests that ticks stop feeding to keep their host population extant; the only important consideration is how well a feeding tick would do relative to an unrelated, non-feeding one. Later (p. 147), Stock states that helminth populations self-regulate to avoid superinfections; again, success of reproducers vs. non-reproducers at an individual level is the only proper comparison. I also found that Stock too readily accepted findings of studies as being established, focusing too much on studies obtaining significant, positive results, when my reading of literature on the same topics reveals more exceptions than support (e.g., the Hamilton-Zuk hypothesis). Not to say that Stock never presents contrary findings (e.g., with respect to the tasty chick hypothesis that runts in a nest become lightning rods for ectoparasites, suffering so their sibs do not), just that he does not in others. For instance, some hypotheses Stock covers are extremely controversial, such as that androgenic hormones suppress immunity. Although these issues gave me pause, they did not significantly dampen my enjoyment of the book.

My sense is that this book will appeal to a broad audience, including academics who specialize on bird parasites. The latter group will find less with which they are unfamiliar, but with the volume of literature having been and being produced, there are bound to be some novel niches to read about. The latter audience will also find they can breeze through this book without being too encumbered by technical language. There are also numerous interesting questions Stock raises that could provide fodder for research. I do not see the book as providing material for a university course, but I could see recommending the book to students looking for an easy in to a wide variety of topics in parasitology.

Dave Shutler
Acadia University, Wolfville, Nova Scotia

Participants in the second Board Meeting
Top row: Ryan Jones, Chris MacQuarrie, Geoff Powell, Bill Riel
Second row: Étienne Normandin, Joel Kits, Neil Holliday, Gail Anderson
Third row: Brian Van Hezewijk, Ward Strong, Boyd Mori, Catherine Scott
Bottom row: Sebastian Ibarra Jimenez, Roselyne Labbé, Felix Sperling, Emma Despland

Highlights of the recent Board of Directors meetings

The ESC Board of Directors has met by videoconference twice since the report in the September issue of the *Bulletin*. The outgoing Board met on 14 October 2020, and the incoming Board met immediately after the Annual Meeting of Members on 20 October 2020. The meeting of the incoming Board was devoted to routine appointments of officers, trustees and committee chairs, and so the remainder of this report will deal with the business conducted at the final meeting of the outgoing Board.

The Board received reports from all ESC committees and officers. There were also updates on progress in the organization of future Joint Annual Meetings (JAM). The organization of the 2021 JAM is proceeding on track. At the request of the hotel chain, the meeting has been moved to a later date and a smaller hotel in Niagara Falls; because of this, it has been possible to renegotiate the contract in ways that will limit losses due to possible low attendance at the meeting. The Board received brief updates on the 2022 JAM (joint with the Entomological Societies of British Columbia and of America) and the 2023 JAM (joint with the Entomological Society of Saskatchewan). The Board voted to accept the invitation of the Société d'entomologie du Québec, to meet jointly in 2024. The Board approved a new version of *A Guide to the Organization of the Annual Meeting of the Entomological Society of Canada*, which will be distributed to the organizing committees of future meetings, and posted in the members' area of the ESC website. President Gail Anderson thanked all those who had been involved in the onerous task of updating the document, particularly Suzanne Blatt and Chris MacQuarrie.

Treasurer, Joel Kits, reviewed the ESC financial statements for 2019–20, and these were accepted by the Board. At the end of that fiscal year investment values were depressed but have since recovered somewhat; revenues exceeded the budget while expenses were less than

budgeted. The Board agreed that the previously-enacted limitation on spending of investment capital could now be removed as the financial markets had recovered sufficiently from the pandemic-induced downturn. The Board also agreed that, in light of the uncertainty created by the pandemic, the planned 2021 review of the Society's finances in preparation for a strategic planning exercise should be delayed until conditions have stabilized. The Board approved an increase in the amount budgeted for the editorial assistant for *The Canadian Entomologist*, and requested that the finance committee meet with the editors-in-chief to examine ways to ensure the ongoing financial sustainability of the journal. The Board received the financial statements for the ESC Scholarship Fund for information; the value of investments in the Fund had declined during the 2019–20 fiscal year, and donations to the Fund were below the budgeted target.

The Board learned that the search for a new webmaster had been successfully concluded, and Cass Chowdhury will be taking over from Jordan Bannerman. A search for a technical editor of *The Canadian Journal of Arthropod Identification* is about to begin, as Morgan Jackson is stepping down from this position. Gratitude was expressed to Jordan and Morgan for their enormous efforts on behalf of the Society.

The Board approved changes to the standing rules to create two new director positions, a Director of Equity, Diversity and Inclusion, and a Student and Early Professional Director, and to clarify the roles and responsibilities of the Social Media Administrators. There were additional minor changes to other parts of the standing rules to accommodate the addition of the two new directorships. As further minor changes need to be approved by the Board, the required specific notification to members of changes to the standing rules will appear in the March 2021 issue of the *Bulletin*. The Board approved changes to the Committee Guidelines to define more precisely the duties of the Physical Assets Committee.

At the request of the Chair of the Insect Common Names Committee, the Board affirmed its view that there continues to be a need for the ESC to maintain a list of approved English and French common names of insects. The list of Canadian General Status Working Group (CGSWG), aims ultimately to provide common names for all Canadian organisms, however unlikely they are to be encountered by non-specialists; it also replaces well-established names with multi-part hierarchical common names that deviate from names used for the same organisms in other jurisdictions. The ESC list aims to maintain consistency of common names with previous usage and with other jurisdictions. The ESC's list is limited to species of economic or conservation importance or are of groups, such as dragonflies or butterflies, that non-specialists may encounter and wish to identify. It was noted that the Board had debated the value of, and criteria for, common names several times in recent years, and that it would be useful to get input on this issue as part of the planned survey of the membership on a wide range of topics.

Call for nominations: Societal Director (Second Vice-President), Director at Large

The Society will hold an online ballot to select candidates for a Societal Director and Director at Large. The selected candidates will then be presented as a slate for formal election by members at the Annual Meeting in Niagara Falls in November. Nominations for these positions must be signed by three active members of the Society and be received by the Secretary of the Entomological Society of Canada, Neil Holliday, by 28 February 2021 (see inside back cover for contact details).

Appel à candidatures : Directeur sociétal (second vice-président), conseiller

La Société tiendra un vote en ligne afin de sélectionner des candidats pour les postes de directeur sociétal et de conseiller. Les candidats sélectionnés seront ensuite présentés à la réunion annuelle à Niagara Falls en novembre pour une élection formelle par les membres. Les nominations pour ces postes doivent être signées par trois membres actifs de la Société et être reçues par le secrétaire de la Société d'entomologie du Canada, Neil Holliday, au plus tard le 28 février 2021 (voir le troisième de couverture pour les informations de contact).

Executive Meeting - Call for Agenda Items

If members have any items they wish to be discussed at the next Board of Directors or Executive Council meeting, please send them to the Secretary, Neil Holliday (see inside back cover for contact details), as soon as possible.

Réunion du conseil exécutif – Points à l'ordre du jour

Si des membres aimeraient ajouter des points à l'ordre du jour pour discussion à la prochaine réunion du Bureau des directeurs ou du Conseil de l'exécutif, merci de les envoyer au secrétaire, Neil Holliday (voir le troisième de couverture pour les informations de contact), le plus tôt.

Members' discounts

Entomological Society of Canada members can enjoy discounts on publications from Annual Reviews, Elsevier, Cambridge University Press, and the Entomological Society of America. Details of how to benefit from these discounts are available on the member's area of the Entomological Society of Canada website at: https://esc-sec.site-ym.com/.

Remise pour les membres

Les membres de la Société d'entomologie du Canada peuvent bénéficier d'une remise lors d'achats de publications de : Annual Reviews, Elsevier, Cambridge University Press et de la Société d'entomologie d'Amérique. Les informations nécessaires pour profiter de ces remises sont disponibles dans la section des membres du site de la Société d'entomologie du Canada à : https://esc-sec.site-ym.com/.

70th Annual Meeting of Members
Zoom Video Conference
20 October 2020, 11:00 AM CDT
MINUTES

1. Call to Order

The meeting was called to order at 11:07 AM by President Gail Anderson, with 51 members participating.

2. Notice of Meeting

Notice of the meeting was sent to all members by email on 25 September 2020, and was published in the September 2020 issue of the *Bulletin*.

3. Additions to and approval of the Agenda

Motion: that the agenda be approved as circulated.

Moved by Gail Anderson, seconded by Kevin Floate. **Carried.**

4. Minutes of the 69th Annual Meeting of Members

The minutes of the 69th Annual Meeting of Members and of the Special Meeting of Members to approve the 2018–19 financial statements were published in the December 2019 issue of the *Bulletin*.

Motion: that the minutes of the 69th Annual Meeting of Members and of the Special Meeting of Members of 22 October 2019 be approved as distributed.

Moved by Gail Anderson, seconded by Chris MacQuarrie. **Carried.**

5. Commemoration of deceased members of the entomological community

Secretary Neil Holliday reported the passing of nine Canadian entomologists since the previous Annual Meeting of Members: Paul-Michael Brunelle (Halifax, NS), Douglas A. (Doug) Craig (Edmonton, AB), John Frederick Doane (Saskatoon, SK), Ronald Harry (Ron) Gooding (Edmonton, AB), George Thomas Harvey (Sault Ste Marie, ON), Leland Medley (Lee) Humble (Victoria, BC), James Francis (Frank) McAlpine (Ottawa, ON), Kenneth (Ken) Richards (Lethbridge, AB & Saskatoon, SK), and Donald Montgomery (Monty) Wood (Ottawa, ON).

A moment of silence was observed in memory of these deceased entomologists.

6. Report from the Board of Directors

President Gail Anderson presented the report. She indicated that, in response to concerns raised at the 2019 Annual Meeting of Members, the Board had increased the Public Education Grants available to Regional Societies from $200 to $500, and had increased the duration of eligibility for the Young Professional membership category from 3 years after graduation to 5 years. In recognition of the importance of Student and Early Professional members of the Society, the Board had approved a new Student and Early Professional Director position. The Board had undertaken several initiatives to increase Equity, Diversity and Inclusion within the Society and within the entomological community as a whole. Among these are the addition of a new director position, the Director for Equity, Diversity and Inclusion; the creation of an Equity, Diversity and Inclusion Committee; holding of a Sharing Circle for all ESC members; and approval of a donation to EntoPOC, an organization that assists entomologists of colour to join entomological societies.

President Anderson provided information on numbers of members currently and in recent years. She noted that the pandemic-caused cancellation of the 2020 Joint Annual Meeting (JAM) was probably the main reason for the reduction in membership in 2020. A considerable number of members decide whether to join the Society based on whether they will attend the JAM, and can therefore take advantage of the discounted registration for ESC members.

Membership Category	Current Members		
	2018	2019	2020
Early Professional	34	36	20
Emeritus	64	71(2*)	73(3*)
Honorary Member	6	4	3
Regular	281(51*)	252(66*)	215(69*)
Student	142	169	95
Enthusiast	—	—	24
Grand Total	527(51*)	532(68*)	431(72*)
* Members using auto-renewal			

President Anderson encouraged members to participate in the 2021 Joint Annual Meeting of the Entomological Societies of Canada and of Ontario, which is planned to take place at the Marriott Fallsview Hotel, Niagara Falls, Ontario from 14–17 November 2021. The general chair of the meeting is Amro Zayed of York University. She noted that the deadline for submissions of symposia was 30 October 2020.

President Anderson noted that the success of the Society arose from the many individuals who work without recognition behind the scenes. She thanked the Board of Directors, the Officers, Representatives, and Trustees, the office staff, and the Chairs and members of committees for their unstinting efforts on behalf of the Society in a very challenging year. She thanked the ESC for the privilege of serving as President and asked if there were questions or comments.

7. Resolution to approve the actions of the Board

Motion: that all Bylaws, contracts, acts and proceedings of the Board of Directors of the ESC enacted, made, done or taken since 20 August 2019, being the date of the last Annual Meeting of Members, be approved, adopted, ratified, sanctioned and confirmed.

Moved by Gail Anderson, seconded by Felix Sperling. **Carried.**

8. Treasurer's Report

Treasurer Joel Kits reviewed the highlights of the ESC's financial statements for 2019–20, which are posted in the members' section of the ESC's website. At the end of the financial year, the value of the Society's assets was negatively affected by the COVID-19 market crash but has since recovered considerably. Treasurer Kits reviewed relevant revenue and expenses of the ESC, which showed a healthy financial situation for current cash flows.

Motion: that the 2019-2020 financial statements for the Entomological Society of Canada be approved.

Moved by Joel Kits, seconded by Ward Strong. **Carried.**

Treasurer Kits reviewed the highlights of the 2019–20 financial statements of the ESC Scholarship Fund, which are posted on the website. The fund was affected by the COVID-19 market crash but has since recovered. Donations for 2020 came in below expectations, which is a concern.

Motion: that the members receive for information the 2019–2020 financial statements of the Entomological Society of Canada Scholarship Fund.

Moved by Joel Kits, seconded by Terry Galloway. **Carried.**

8.1 Review Engagement for 2020–2021

Motion: that Bouris, Wilson LLP of Ottawa be appointed as public accountants to ESC and the ESC Scholarship Fund to conduct the review engagement of both sets of financial statements for the 2020–2021 financial year.

Moved by Joel Kits, seconded by Neil Holliday. **Carried.**

9. Election of Directors

Motion: that the following candidates be elected as Directors

Position	Candidate	Length of term	Year of completion*
Societal Director (2nd Vice-President)	Chris MacQuarrie, CFS, Sault Ste Marie	3 years	2023
Director at large	Emma Despland, Concordia University	3 years	2023
Regional Director, ESS	James Tansey, SK Min of Ag., Regina	3 years	2023
Regional Director, ESM	Jason Gibbs, University of Manitoba	3 years	2023
Regional Director, ESO	Rosalyne Labbé, AAFC, Harrow	1 year	2021
Regional Director, AES	Catherine Scott, Acadia University	2 years	2022
Director for Equity, Diversity & Inclusion	Sebastian Ibarra, Agriculture & Land, PEI	3 years	2023
Student & Early Professional Director	Rachel Rix, Dalhousie University	3 years	2023
* Term ends at the time of the Annual Meeting of Members			

Moved by Neil Holliday, seconded: Gail Anderson

Secretary Holliday explained that the ESC By-laws require that all directors be elected for a 3-year term. Where a director resigns during their term, the rotation of directors is preserved by electing a director for the remainder of the 3-year term. This is why the ESO and AES regional directors are to be elected for less than 3 years. The new director positions for Equity, Diversity and Inclusion, and to represent Students and Early Professionals were approved in principle by the Board at its July meeting, and the necessary standing rule changes were approved by the Board last week. In both cases, one candidate came forward, and is on the slate for election. Until 2013, students had a director on the Board, and that director position was filled annually. When ESC's bylaws were changed to conform to the new Canada Not-for-Profit Corporations Act, all terms of office of directors became 3 years, and it was considered that this was too long for a student director, and students were represented on the Board by a non-voting student representative. The Board now considers it more appropriate for students and early professionals to have a full-directorship position on the Board, and moved to implement this.

The motion was **carried**.

10. Transfer of office

Gail Anderson passed a "virtual gavel" to Bill Riel the incoming president. Past-president, Kevin Floate ushered Chris MacQuarrie to the virtual podium to assume his duties as the 2nd vice president.

11. Presentation of Service Award

President Bill Riel presented a service award to Gail Anderson (outgoing President). He praised Gail for leading with competence, enthusiasm, and cheerfulness despite facing one of the most unusual and challenging years in the ESC's history. Her strong leadership was vital to ESC while facing unprecedented, confusing and difficult circumstances.

President Riel presented a service award to Joel Kits who has served the society for almost 3 years as Treasurer, declaring that it is impossible to overstate the value of Joel's service to the ESC, especially given the financial uncertainty of recent times. Joel carried out his duties with competence and wisdom as he helped keep ESC's finances in good shape, provided invaluable advice and guidance to Executive Council and the Governing Board. He has left ESC in a solid financial position going forward.

12. Notice of 71st Annual Meeting of Members

The next Annual Meeting of Members is scheduled to take place on Tuesday, 16 November 2021. At this time, it is expected that the meeting will take place at the Marriott Fallsview Hotel, Niagara Falls, Ontario.

13. Adjournment

Motion: that the meeting be adjourned.

Moved by Bill Riel, seconded by Justin Henault. **Carried.**

President Riel declared the meeting adjourned at 11:33 AM CDT.

ESC 2020 Photo Contest Winners

We are pleased to announce the winners of the ESC Annual Photo Contest. This year saw 27 people participate in our annual ESC Photo Contest. They submitted a high number of entries - 99 to be precise. We wish to thank all the entrants for their fine collection of photos.

We would also like to thank the anonymous judges who took the time to review and rank all the photo entries. This is never an easy task with so many stunning pictures. The winners and honourable mentions listed below will have their photos grace the covers of *The Canadian Entomologist* and the *Bulletin* for the 2021 season.

First Place: Tim Haye

Caption: Samurai wasp, *Trissolcus japonicus*, parasitizing egg of *Halyomorpha halys* (Delémont, Switzerland).

Second Place: Mel Hart

Caption: *Enallagma civile* watching the foot traffic along a boardwalk at Riding Mountain National Park, MB.

Third Place: Andrea Brauner

Caption: A presumed Acrididae grasshopper found hanging out in the backyard in Summerland, BC.

Entomologist in Action: Chris Ratzlaff

Caption: Collecting insects and setting up pan traps on the dry slopes of Galiano Island, British Columbia as part of the Biodiversity Galiano Project.

Honourable Mention: Andreas Fischer

Caption: Subadult female black widow spider walking on her web. Tsawwassen, BC.

Honourable Mention: Matt Muzzatti

Caption: Chiang Mai, Thailand. Two male rhinoceros beetles (Xylotrupes: Dynastinae) preparing to 'fight.' Prize fighters are bred and bets are placed on which male will throw the other off a cylindrical piece of wood.

Honourable Mention: Robyn DeYoung

Caption: Robber fly in the Subfamily Asilinae, photo taken at Trout Creek Point in Summerland, BC.

Honourable Mention: Richard Yank

Caption: Portrait of a male American rubyspot (*Hetaerina americana*) photographed along the Châteauguay River at Ste-Martine, Québec, on 13 August 2020. A small population of this colourful damselfly was discovered at this site, well north of its usual range, several years ago.

Call for Nominees: ESC Achievement Awards

Do you know a well-respected entomologist who deserves recognition because of their outstanding contributions to their science in Canada? Is this person a leader in their field due to successes in publishing, patenting, editorial work and/or grant acquisition, in the teaching and mentoring of students, or through active volunteer involvement in the ESC and other societies/organizations? If yes, consider nominating them for one of our Society's Achievement Awards. Do not hesitate to contact the Chair of the Achievement Awards Committee, Felix Sperling (felix.sperling@ualberta.ca), if you have any questions about eligibility or the nomination process.

Gold Medal and C. Gordon Hewitt Award

Both awards are for outstanding entomological contributions in Canada by an individual, but the nominees for the C. Gordon Hewitt Award must have successfully defended their doctoral thesis in the 12 years ending on December 31 of the year in which the Award is received. Parental, compassionate or medical leave is not counted as part of the 12-year period; however, such periods must be identified in the letter from the nominator.

Nominations can only be made by members of the ESC, and signed by the nominator and by at least one seconder (also to be a member of the ESC). Verified communication from a recognized email address will be accepted in lieu of a signature. Nominators should include the following information for both awards: 1. The name and address of the nominee(s); 2. A statement of relevant achievements (3–5 pages) which may include, but is not limited to, the following: outline of research areas, particularly major contributions; number of articles in refereed journals, books, book

Appel à candidature: Prix d'excellence de la SEC

Connaissez-vous un entomologiste respecté qui mérite une reconnaissance pour ses contributions remarquables à sa science au Canada? Cette personne est-elle leader dans son champ d'étude par ses succès en publication, brevets, travail éditorial et/ ou obtention de subventions, enseignement, mentorat d'étudiants, ou par son implication bénévole auprès de la SEC et d'autres sociétés/ organisations? Si oui, veuillez considérer de nominer cette personne pour un des prix d'excellence de notre Société. N'hésitez pas à contacter le président du comité des prix d'excellence, Felix Sperling (felix.sperling@ualberta.ca) si vous avez des questions sur l'éligibilité ou le processus de nomination.

Médaille d'or et prix C. Gordon Hewitt

Les deux prix sont pour des contributions entomologiques exceptionnelles au Canada par un individu, mais les candidats pour le prix C. Gordon Hewitt doivent avoir soutenu avec succès leur thèse de doctorat dans les 12 dernières années au 31 décembre de l'année de remise du prix. Les congés parentaux, de soignant ou de maladie ne comptent pas dans la période de 12 ans : ces périodes doivent cependant être identifiées dans la lettre de présentation.

Les candidatures doivent être soumises par des membres de la SEC, et doivent être signées par la personne qui soumet la candidature et par au moins une personne qui l'appuie (également membre de la SEC). Une communication vérifiée par une adresse courriel reconnue sera acceptée comme signature. Les candidatures doivent inclure les informations suivantes pour les deux prix : 1. Le nom et l'adresse du candidat; 2. Un énoncé des accomplissements pertinents (3-5 pages) qui peuvent inclure, mais ne se limitent pas à : le domaine de recherche et particulièrement les

chapters, patents; editorial activities; teaching history, numbers of graduate students, teaching awards; value of grants; involvement in ESC; active involvement and/or memberships in other Societies; entomological extension/ community involvement; organizing of symposia or meetings; 3. A current curriculum vitae; and 4. The name of the nominator and at least one seconder. The documentation should stress the particular achievement or achievements to be considered and not merely the general competences of the nominee. Other seconders may merely state their support, without documentation, in a letter of endorsement of the nomination. The Committee will not prepare the documentation nor conduct research connected with it. Please send nominations by e-mail to the Chair of the Achievement Awards Committee, Felix Sperling (felix.sperling@ualberta.ca), no later than **28 February 2021**.

Honorary Members of the Entomological Society of Canada

An Honorary Member is deemed to have made an outstanding contribution to the advancement of entomology, and may be an Active Member or former Active Member of the Society at the time of nomination.

Collectively, Honorary Members are not to comprise more than 10 members or 1% of the active membership of the Society. Nominations should be supported by at least five members of the Society, and are to be sent by e-mail to the Chair of the Achievement Awards Committee, Felix Sperling (felix.sperling@ualberta.ca) no later than **28 February 2021**.

contributions majeures; le nombre d'articles dans des revues avec évaluation par les pairs, livres, chapitres de livres, brevets; activités éditoriales; historique d'enseignement, nombre d'étudiants gradués, prix d'enseignement; valeur des subventions; implication au sein de la SEC; implication active et/ou adhésion à d'autres Sociétés; implication dans la communauté entomologique et vulgarisation; organisation de symposiums ou de réunions; 3. Un curriculum vitae à jour; et 4. Le nom de la personne qui soumet la nomination et au moins une personne qui l'appuie. La documentation devrait mettre en évidence le ou les accomplissements particuliers à considérer, et pas seulement les compétences générales du nominé. D'autres personnes peuvent aussi manifester leur appui, sans documentation, dans une lettre de soutien de la nomination. Le comité ne préparera aucune documentation et ne fera aucune recherche en lien avec la nomination. Merci d'envoyer vos nominations par courriel au président du comité des prix d'excellence, Felix Sperling (felix.sperling@ualberta.ca), au plus tard le **28 février 2021**.

Membres honoraires de la Société d'entomologie du Canada

Un membre honoraire est considéré comme ayant apporté des contributions remarquables à l'avancement de l'entomologie et peut être un membre actif ou un ancien membre de la Société au moment de la nomination.

Collectivement, les membres honoraires ne peuvent pas totaliser plus de 10 membres ou 1% des membres actifs de la Société. Les nomination doivent être appuyées par au moins cinq membres de la Société, et doivent être envoyées par courriel au président du comité des prix d'excellence, Felix Sperling (felix.sperling@ualberta.ca), au plus tard le **28 février 2021**.

Fellows of the Entomological Society of Canada

Fellows are deemed to have made a major contribution to entomology, and are to be Active Members of the Society at the time of nomination. Their contribution may be in any area (e.g., research, teaching, application or administration), and may be judged on the basis of contribution to and stimulation of the work of others, as well as by direct personal effort.

Collectively, Fellows may not comprise more than 10% of the active membership of the Society. Nominations should be supported by at least four members of the Society, and are to be sent by e-mail to the Chair of the Achievement Awards Committee, Felix Sperling (felix.sperling@ualberta.ca), no later than **28 February 2021**.

Fiduciaires de la Société d'entomologie du Canada

Les fiduciaires sont considérés comment ayant apporté une contribution majeure à l'entomologie et doivent être des membres actifs de la Société au moment de la nomination. Leur contribution peut se situer dans n'importe quel domaine (p.ex. recherche, enseignement, application ou administration), et ils seront jugés selon leur contribution et la stimulation du travail des autres, ainsi que par leurs efforts personnels.

Collectivement, les fiduciaires ne peuvent pas totaliser plus de 10% des membres actifs de la Société. Les nominations doivent être appuyées par au moins quatre membres de la Société, et doivent être envoyées par courriel au président du comité des prix d'excellence, Felix Sperling (felix.sperling@ualberta.ca), au plus tard le **28 février 2021**.

Wanted: Applicants for the Bert & John Carr Award

The Bert and John Carr Award was created in 2010 (see ESC *Bulletin*, June 2010 [p.102] or September 2010 [p. 170]) to support research activities by individuals who study insect faunistics, or the natural history and taxonomy of Canada's insect fauna. Preference is given to applications by amateurs, but those by students and others will be considered. Applications should consist of: 1. The name and address of the applicant; 2. A statement of the research activity to be undertaken, including a cost estimate of up to $1000; and 3. A current curriculum vitae. Applications are to be sent by e-mail to the Chair of the Achievement Awards Committee, Felix Sperling (felix.sperling@ualberta.ca) no later than **28 February 2021**.

Recherchés : Candidats pour le prix Bert & John Carr

Le prix Bert et John Carr a été créé en 2010 (voir le *bulletin* de la SEC, juin 2010 [p.102] ou septembre 2010 [p.170]) afin de soutenir des activités de recherche par des individus qui étudient la faunistique des insectes ou l'histoire naturelle et la taxonomie de la faune entomologique du Canada. La préférence sera donnée aux candidatures provenant d'amateurs, mais les candidatures d'étudiants ou d'autres individus seront considérées. Les candidatures devront inclure : 1. Le nom et l'adresse du candidat; 2. Un énoncé sur les activités de recherche qui seront entreprises par le candidat, incluant le coût estimé jusqu'à 1000$; et 3. Un curriculum vitae à jour. Les candidatures doivent être envoyées par courriel au président du comité des prix d'excellence, Felix Sperling (felix.sperling@ualberta.ca), au plus tard le **28 février 2021**.

List of Contents: Regional Journals / Table des matières : Revues des sociétés régionales

Contents of regional society journals

This regular feature highlights research published in the five regional society journals that include peer-reviewed papers. It should be noted that some regional society journals are not published on a regular basis and may not always include peer-reviewed articles.

Contenu des revues des sociétés régionales

Cette rubrique régulière met en lumière la recherche publiée dans les cinq revues des sociétés régionales qui incluent des articles révisés par les pairs. Veuillez noter que certaines revues des sociétés régionales ne sont pas publiées sur une base régulière et peuvent ne pas toujours inclure des articles évalués par les pairs.

Journal of the Entomological Society of Ontario Volume 151

Articles

Rediscovery of *Anacampsis lupinella* Busck (Lepidoptera: Gelechiidae) in Ontario. Gard W. Otis, Jean François Landry, Jeremy R. deWaard, Mary Gartshore, Dave Beadle, Ken Stead. Pages 1-14, June 2020

pdf

First Canadian record and additional new state records for North American deer keds (Diptera: Hippoboscidae: *Lipoptena cervi* (Linnaeus) and *L. mazamae* Rondani). Michael J. Skvarla, R. A. Butler, R. T. Fryxell, C. D. Jones, M. V. A. Burrell, K. C. Poh, J. Evans, E. Machtinger. Pages 33-40, November 2020.

pdf

Scientific Notes

Emblemasoma albicoma Reinhard (Diptera: Sarcophagidae), a parasitoid of *Neotibicen canicularis* (Harris) (Hemiptera: Cicadidae) in Ontario, Canada. Bradley Sinclair. Pages 15-18, June 2020

pdf

New Canadian records of *Phyllopalus pulchellus* Uhler and *Hapithus agitator* Uher (Orthoptera: Gryllidae) based on digital observations. Steve Paiero, Russ J.L. Jones, Jill C. Crosthwaite, Grace Pitman. Pages 19-23, October 2020.

pdf

The first eastern North American records for the introduced European rhyparochromids *Drymus brunneus* (Sahlberg) and *Raglius alboacuminatus* (Goeze), and an additional record of *Gastrodes grossipes* (DeGeer) in North America. Steve Paiero, Stephen. P. L. Luk, Denise Beaton. Pages 25-31, October 2020

pdf

Canadian Weed Science Society
Société canadienne de malherbologie

CWSS-SCM Newsletter

The Society has recently adopted a new style for its newsletter so that there is no longer a Table of Contents. To see what's new in Canadian weed science, go to:

https://secureservercdn.net/198.71.233.161/36f.606.myftpupload.com/wp-content/uploads/2020/10/CWSS-SCM-Newsletter-October-2020.pdf

Meeting announcements / Réunions futures

In view of the COVID-19 situation, readers should check the meeting website to ascertain if the conference is still proceeding and, if so, in what format.

10th International IPM Symposium: Implementing IPM across Borders and Disciplines
Denver, 15–18 March 2021
https://ipmsymposium.org/2021/

Entomological Society of America: 2021 International Branch Virtual Symposium
26–28 April 2021
https://www.entsoc.org/international/2021-virtual-symposium

26th International Congress of Entomology (Entomology for our planet)
Helsinki, Finland, 18−23 July 2021
https://ice2020helsinki.fi/

XVI International Conference on Ephemeroptera and XXI International Symposium on Plecoptera
Fort Collins, Colorado, 25 July−1 August 2021
(no website to date)

Society for Invertebrate Pathology Annual Conference
Port Elizabeth, South Africa, 1–5 August 2021
http://www.sipweb.org/meetings.html

Joint Annual Meeting of the Entomological Society of Canada and the Entomological Society of Ontario
Niagara Falls, 14–17 November 2021
https://www.entsocont.ca/esceso-2021-jam.html

Entomological Society of America Annual Meeting
Denver, 31 October–3 November 2021
(no website to date)

Readers are invited to send the Editor notices of entomological meetings of international, national or Canadian regional interest for inclusion in this list.

Les lecteurs sont invités à envoyer au rédacteur en chef des annonces de réunions entomologiques internationales, nationales ou régionales intéressantes afin de les inclure dans cette liste.

Bulletin of the Entomological Society of Canada

Editor: Cedric Gillott
Assistant Editor: Donna Giberson

The *Bulletin of the Entomological Society of Canada*, published since 1969, presents quarterly entomological news, opportunities and information, details of Society business, matters of wider scientific importance and book reviews.

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The Entomological Society of Canada was founded in 1863 primarily to study, advance and promote entomology. It supports entomology through publications, meetings, advocacy and other activities.

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Rédacteur: Cedric Gillott
Rédactrice adjointe: Donna Giberson

Le *Bulletin de la Société d'entomologie du Canada*, publié depuis 1969, présente trimestriellement des informations entomologiques, des occasions, des renseignements sur les opérations de la Société, des dossiers scientifiques d'importance et des analyses d'ouvrages.

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La Société d'entomologie du Canada a été établie en 1863 principalement pour promouvoir l'étude et l'avancement de l'entomologie. Elle soutient l'entomologie par l'entremise de publications, de réunions et d'autres activités.

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Editor's note: *Society Directors and Officers are reminded to check these lists, and submit corrections, including the names and positions of new officers.*

The last word / Le dernier mot

Cedric Gillott, Editor / Rédacteur

A winter of discontent

"*Now is the winter of our discontent*" says Richard, Duke of Gloucester, the future King Richard III.[1]

It is likely that Richard was referring to the unhappy state that the Yorkists found themselves in, though if he were extant, I'm sure that he would have the COVID-19 pandemic in mind. The next few months (perhaps as many as 6 in the Prairies) are expected to see a rise in the number of people testing positive to the virus, sometimes through no fault of their own, but equally through a complete disregard of recommendations (nay, even rules) for avoiding close interpersonal contact/transmission. After starting out as one of the least affected provinces, Saskatchewan has recently seen massive increases in case numbers, often traceable to large, crowded gatherings of mostly young, careless (maskless) adults.

What has the preceding ramble got to do with our Society? It's simply that the ESC includes a large proportion of student and early professional members who, as normal young people, enjoy getting together socially. We may also have friends and family members of all ages who are finding it difficult to follow the rules and continue to gather. While not wishing to be seen as 'lecturing' my colleagues, I do ask them to consider the possible outcomes both to themselves and to others (friends and relatives), before embarking on large group activities. Even for routine activities, wear a mask and practise physical distancing. Optimistically, a vaccine could be available by Spring 2021. (The play's second line reads:"*Made glorious summer by this sun of York"* Shakespeare's metaphor for 'better times are on the way'.)

[1]Opening line of William Shakespeare's *The Tragedy of King Richard the Third*

Un hiver de déplaisir

« *Now is the winter of our discontent* »[1] dit Richard, Duc de Gloucester, le futur roi Richard III.

Il est probable que Richard faisait référence à l'état malheureux dans lequel se trouvaient les Yorkistes, bien que s'il avait existé, je suis sûr qu'il aurait eu la pandémie de COVID-19 à l'esprit. Les prochains mois (peut-être jusqu'à 6 dans les Prairies) devraient voir une augmentation du nombre de personnes testées positives au virus, parfois sans qu'elles en soient responsables, mais parfois également en raison d›un mépris total des recommandations (voire des règles) visant à éviter les contacts interpersonnels et la transmission du virus. Après avoir commencé comme l›une des provinces les moins touchées, la Saskatchewan a récemment connu une augmentation massive du nombre de cas, souvent due à de grands rassemblements d›adultes, pour la plupart jeunes et négligents (sans masque).

Quel est le rapport avec notre société ? C'est simplement que la SEC compte une grande partie de membres étudiants et jeunes professionnels qui, en tant que jeunes gens normaux, apprécient se retrouver en groupe. Nous avons peut-être des amis et de la famille de tous âges qui trouvent difficile de suivre les règles et qui continuent à se rassembler. Bien que je ne souhaite pas être perçu comme donnant des sermons à mes collègues, je leur demande de réfléchir aux conséquences possibles, pour eux-mêmes et pour les autres (amis et parents), avant de se lancer dans des activités en grand groupe. Même pour les activités de routine, portez un masque et pratiquez la distanciation physique. Avec optimisme, un vaccin pourrait être disponible d'ici le printemps 2021. (La deuxième ligne de la pièce se lit comme suit : « *Made glorious summer by this sun of York*[2] », la métaphore de Shakespeare pour dire que des temps meilleurs s'en viennent.

1 Première ligne de *The Tragedy of King Richard the Third* de William Shakespeare, traduction de Jean-Michel Déprats: « Ores voici l'hiver de notre déplaisir »
2Traduction de Jean-Michel Déprats : « Changé en glorieux été par ce fils d'York »

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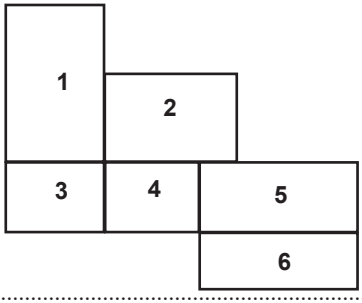

Front cover/Plate supérieur:

1. Praying mantis (Mantodea: Mantidae) having a snack [Summerland, British Columbia, Canada]
Une mante religieuse (Mantodea : Mantidea) prend sa collation [Summerland, Colombie Britannique,Canada]
[Photo: Andrea Brauner]

2. *Apodemia mormo* (Lepidoptera: Riodinidae) individual caught in the wild as part of a captive breeding experiment to help bolster populations of this endangered species [Keremeos, British Columbia, Canada]
Un individu *Apodemia mormo* (Lepidoptera : Riodinidae) capturé en nature dans le cadre d'une expérience d'élevage en captivité afin d'aider à soutenir les populations de cette espèce menacée [Keremeos, Colombie Britannique, Canada]
[Photo: Jayme Lewthwaite]

3. *Platypedia* (Hemiptera: Cicadidae) expands its wings and sclerotises.
Un *Platypedia* (Hemiptera : Cicadidae) étend ses ailes et se sclérifie.
[Photo: Bob Lalonde]

4. Egg parasitoid *Telenomus* (Hymenoptera: Platygastridae) emerging from stink bug (Hemiptera: Pentatomidae) eggs [Delémont, Switzerland]
Des parasitoïdes des oeufs du genre *Telenomus* (Hymenoptera : Platygastridae) émergeant d'oeufs de punaises (Hemiptera : Pentatomidae) [Delémont, Suisse]
[Photo: Tim Haye]

5. *Paralobesia marilynae* (Lepidoptera: Tortricidae) egg hatching six days after oviposition on a showy lady's slipper (Orchidaceae) [Gatineau Park, Québec, Canada]
Des oeufs de *Paralobesia marilynae* (Lepidoptera: Tortricidae) émergeant six jours après la ponte sur le cypripède royal (Orchidaceae) [Parc de la Gatineau, Québec, Canada]
[Photo: Marilyn Light]

6. *Sinodendron rugosum* (Coleoptera: Lucanidae) [Victoria, British Columbia, Canada]
Sinodendron rugosum (Coleoptera : Lucanidae) [Victoria, ColombieBritannique, Canada]
[Photo: Debra Wertman]

Back cover/Plate inférieur:

Tagged Bombus bimaculatus (Hymenoptera: Apidae) queen [Winnipeg, Manitoba, Canada]
Une reine *Bombus bimaculatus* (Hymenoptera : Apidae) marquée [Winnipeg, Manitoba, Canada]
[Photo: Emily Hanuschuk]

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