Bulletin

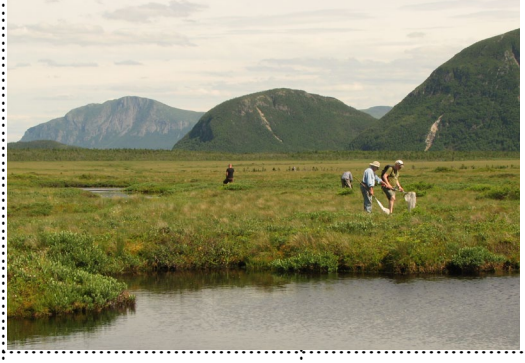
Entomological Society of Canada
Société d'entomologie du Canada

Volume 49
Number / numéro 1

March / mars 2017

Published quarterly by the
Entomological Society of Canada

Publication trimestrielle par la
Société d'entomologie du Canada



List of Contents / Table des matières

Volume 49(1), March / mars 2017

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

One of the 50+ *Megarhyssa atrata* (Hymenoptera: Ichneumonidae) observed ovipositing on a single dead limb of a maple tree [Winnipeg, Manitoba, Canada]

Une femelle parmi au moins 50 *Megarhyssa atrata* (Hymenoptera: Ichneumonidae) observées en pleine ponte sur une seule branche morte d'un érable [Winnipeg, Manitoba, Canada]

Photo: Jordan Bannerman

Up front / Avant-propos

Neil Holliday, President of ESC / Président de la SEC

J. Richardson

Changing Faces

The majority of members of the Entomological Society of Canada may doubt that I am a "real" entomologist because they usually see me formally attired at annual meetings. Hence, I decided that I would use some of the illustrations accompanying "Up Front" to demonstrate my entomological legitimacy. Also, as I am writing this in January, it seems appropriate to portray the sort of entomological activity in which one can be involved in mid-Canada in mid-winter. While it may look like I am harpooning a subterranean seal, I am actually excavating a wintering aggregation of my favourite carabid beetle, *Chlaenius cordicollis*. Comparison of this column's picture with that in the December 2016 issue will reveal that they are by no means contemporary. December's picture was taken in 2016, whereas today's picture was taken in February 1982. Between those times, my face, and the face of the Entomological Society of Canada, have both changed.

Other changes of face must also be noted. The Society has a new secretary. We are grateful that Aynsley Thielman has agreed to step into the role so capably filled by Alec McClay for the last 5 years. Aynsley is a postdoctoral researcher with Dezene Huber

UNBC

Aynsley Thielman, new ESC Secretary / Aynsley Thielman, nouvelle secrétaire de la SEC

Des visages qui changent

La majorité des membres de la Société d'entomologie du Canada doutent peut-être que je sois un « vrai » entomologiste parce qu'ils me voient généralement habillé de façon formelle aux réunions annuelles. J'ai donc décidé que j'utiliserais certaines des illustrations accompagnant l'« Avant-propos » afin de démontrer ma légitimité entomologique. De plus, puisque j'écris ces lignes en janvier, il semble approprié d'illustrer le type d'activités entomologiques dans lesquelles on peut s'impliquer dans le centre du Canada en milieu d'hiver. Bien que je puisse avoir l'air d'harponner un phoque souterrain, je suis en fait en train d'excaver une agrégation hivernale de mon carabe préféré, *Chlaenius cordicollis*. Une comparaison de la photo de cette rubrique avec celle du numéro de décembre 2016 révèlera qu'elles ne sont aucunement contemporaines. La photo de décembre a été prise en 2016, alors que celle d'aujourd'hui a été prise en février 1982. Entre ces deux années, mon visage, et le visage de la Société d'entomologie du Canada, ont tous deux changé.

D'autres changements de visages doivent également être notés. La Société a une nouvelle secrétaire. Nous sommes reconnaissants qu'Aynsley Thielman ait accepté de remplir le poste occupé de façon si compétente par Alec McClay durant les 5 dernières années. Aynsley est chercheure postdoctorale avec Dezene Huber et Mark Shrimpton à l'Université du Nord de la Colombie-Britannique à Prince George, Colombie-Britannique. Elle utilise des techniques morphologiques et moléculaires de fine pointe afin d'identifier les invertébrés benthiques dans les cours d'eau du centre de la Colombie-

and Mark Shrimpton at the University of Northern British Columbia in Prince George, British Columbia. She is using morphological and cutting-edge molecular techniques to identify benthic invertebrates in streams in central British Columbia; taxa from the stream and from fish guts are compared to elucidate trophic interactions. She has also helicoptered to pristine mountain tops to sample terrestrial alpine invertebrates, and admire the passing mammalian fauna. Prince George's opportunities for experiencing insects in nature are a contrast to Aynsley's urban-focused upbringing in Niagara Falls, Ontario, and to the laboratory science of her BSc in Molecular Biology and Genetics from the University of Guelph. Fiona Hunter was instrumental in Aynsley's revelation: Aynsley began working in Fiona's mosquito identification and West Nile virus testing program in 2001, and completed a PhD under Fiona's supervision in 2011. Aynsley is active in public education and citizen science and has contributed insect-related items for local radio and national TV broadcasts. She previously served ESC as the Graduate Student Representative.

The second new face is that of Jordan Bannerman, ESC's new webmaster. Since 2012, Jordan has been an instructor in the Department of Entomology, University of Manitoba, where he teaches in five courses, has a major role in the Department's extension activities, and provides research support in several areas. Jordan grew up in the Okanagan Valley of British Columbia, and has been an avid fly-fisher from an early age. During his first degree, he spent a summer driving around the apple orchards of the Okanagan releasing sterile codling moths. However, it was courses from Bob Lalonde, and working in Bob's research laboratory at UBC's Okanagan campus, that oriented

N. Holliday

Jordan Bannerman, new ESC webmaster, and the embryonic new ESC web page / Jordan Bannerman, nouveau webmestre de la SEC, et la nouvelle page Web embryonnaire de la SEC

Britannique : les taxons du cours d'eau et du tube digestif des poissons sont comparés afin d'élucider les interactions trophiques. Elle s'est rendue en hélicoptère aux sommets vierges des montagnes afin d'échantillonner des invertébrés terrestres alpins, et admirer la faune mammalienne passante. Les opportunités de Prince George pour étudier des insectes en nature contrastent avec le passé plutôt urbain d'Aynsley à Niagara Falls, Ontario, et avec la science de laboratoire de son baccalauréat en biologie moléculaire et génétique de l'Université Guelph. Fiona Hunter a été importante dans la révélation d'Aynsley : Aysnley a commencé à travailler dans le programme d'identification de moustiques et de tests du virus du Nil occidental en 2001, et a complété un doctorat sous la direction de Fiona en 2011. Aynsley est active dans l'éducation au public et la science citoyenne et a contribué dans les médias sur la radio locale et la télévision nationale. Elle a précédemment été représentante étudiante de la SEC.

Le second nouveau visage est celui de Jordan Bannerman, le nouveau webmestre de la SEC. Depuis 2012, Jordan est chargé de cours au département d'entomologie de l'Université du Manitoba, où il enseigne cinq cours, a un rôle majeur dans les activités de transfert de connaissance du département, et fournit du soutien à la recherche dans différents domaines. Jordan a grandi dans la vallée d'Okanagan de Colombie-Britannique et est un pêcheur à la mouche avide depuis son jeune âge. Durant son premier diplôme, il a passé son été à conduire dans les vergers de pommes d'Okanagan en relâchant des carpocapses stériles. Cependant, ce sont les cours de Bob Lalonde et le fait de travailler dans le

Jordan's career path towards entomology. For his MPM at Simon Fraser University, Jordan was supervised by Bernie Roitberg and Dave Gillespie in research on the ecology of aphid-parasitoid interactions in greenhouse crops. Jordan retains his passion for fly-fishing and fly-tying, and confesses that when the Winnipeg winters prevent fly-fishing, he spends a great deal of his spare time dreaming about this pursuit.

Jordan is a key player in another change of face that is currently under way: the development of a completely new website for the ESC. Since December 2016, Jordan has been working with Ryan Mayo of Strauss event and association management to build the new website in the WordPress platform. At the time of writing, the structure of the site is largely established. Jordan has begun migration of content from the old site, and adding completely new content. One important objective is to have a members' area that provides straightforward and intuitive access to *The Canadian Entomologist*, *Memoirs*, and other member benefits. The home page of the new website will include direct views of the most recent ESC Twitter and Blog posts, and the new platform allows viewing on mobile devices as well as on computer screens.

I mentioned at the end of my first paragraph that the face of the Entomological Society of Canada has changed since the days of my 1982 photograph. In the late 1970s and early 1980s the Society had about 1000 members — about 2½ times the current number. Nevertheless, at my first ESC meeting (1975) the president, George Cooper, expressed grave concern because Agriculture Canada vacancies created by retirement of entomologists were being allocated to other scientific fields. As about 50% of ESC members were federal entomologists at that time and as federal governments continued the policy despite ESC protests, part of the reduction in total ESC membership is attributable to the diminution of a major source pool for members. A welcome change is the increasing proportion of student members in the Society, and their increasing

laboratoire de Bob au campus Okanagan de UBC qui ont orienté la carrière de Jordan vers l'entomologie. Pour son MPM à l'Université Simon Fraser, Jordan a été supervisé par Bernie Roitberg et Dave Gillespie dans la recherche sur l'écologie des interactions puceron-parasitoïdes dans les cultures de serre. Jordan a conservé sa passion pour la pêche à la mouche et le montage de mouches, et confesse que quand les hivers de Winnipeg empêchent la pêche à la mouche, il passe beaucoup de son temps libre à en rêver.

Jordan est un joueur clé dans un autre changement de visage qui se poursuit actuellement : le développement d'un site Web complètement nouveau pour la SEC. Depuis décembre 2016, Jordan a travaillé avec Ryan Mayo de la compagnie Strauss event and association management afin de construire le nouveau site Web sur la plate-forme WordPress. Au moment d'écrire ces lignes, la structure du site est largement établie. Jordan a débuté la migration du contenu de l'ancien site et a ajouté du contenu complètement nouveau. Un objectif important est d'avoir une section des membres qui fournit un accès direct et intuitif à *The Canadian Entomologist*, aux *Mémoires*, et aux autres avantages des membres. La page d'accueil du nouveau site Web inclura des vues directes des gazouillis Twitter et des billets de blogues les plus récents pour la SEC, et la nouvelle plateforme permettra une consultation sur les appareils mobiles ainsi que sur les écrans d'ordinateur.

J'ai mentionné à la fin de mon premier paragraphe que le visage de la Société d'entomologie du Canada avait changé depuis l'époque de ma photographie de 1982. À la fin des années 1970 et au début des années 1980, la Société comptait environ 1000 membres – environ 2½ fois le nombre actuel. Néanmoins, lors de ma première réunion de la SEC (1975), le président, George Cooper, avait exprimé de graves inquiétudes parce que les emplois vacants d'Agriculture Canada créés par la retraite d'entomologistes étaient alloués à d'autres domaines scientifiques. Puisqu'environ 50% des membres de la

influence on ESC activities. It is notable that attendance at Joint Annual Meetings in the 1970s was rather similar to that of today; thus the proportion of our membership attending Joint Annual Meetings is larger than before.

There have also been profound changes in the publication landscape in the last decades. Thirty years ago, scientific journals were available only in print, and every month, ESC members received an envelope containing the latest issue of *The Canadian Entomologist*. The accumulation of these issues in one's personal library saved many a trudge to a distant institutional library where one competed for access to the only copy (and sometimes waited for it to come back from the binders!). Today, entomologists associated with an institutional library can have access to the all 149 volumes of the journal without leaving their desks, and competition for access is virtually unknown. Until recently, *The Canadian Entomologist*, like most North American scientific journals, charged page charges for publication and there was a discount for ESC members. However, like competing journals, we no longer charge for publication in the journal, and so cannot offer membership discounts. Thus, there has been an erosion of the motivation to be a long-term member of the ESC that was once provided by a member's easy access to *The Canadian Entomologist* and reduced publication costs.

At its meetings in Orlando in September 2016, the ESC Board of Directors spent considerable time reviewing membership and trends and the influence of changing circumstances on ESC revenues, and concluded that the Society needs to rethink how it operates. During the course of the current Society year, we have already devoted one Board meeting to the topic of membership, and plan another Board meeting devoted to finance. The Board's year will culminate with a strategic planning exercise associated with the Winnipeg Joint Annual Meeting. Our current ESC has benefited from previous episodes of introspection and organizational assessment, most recently in 2013 when it

SEC étaient des entomologistes fédéraux à l'époque, et puisque le gouvernement fédéral avait continué la politique malgré les protestations de la SEC, une partie de la réduction du nombre de membres de la SEC est attribuable à la diminution d'un bassin majeur de membres. Un changement bienvenu est l'augmentation de la proportion de membres étudiants de la Société et leur influence croissante sur les activités de la SEC. Il faut noter que la participation aux réunions annuelles conjointes dans les années 1970 était similaire à celle d'aujourd'hui : ainsi, la proportion de nos membres qui se rend aux réunions conjointes annuelles est plus grande qu'avant.

Il y a également eu de profonds changements dans le paysage des publications dans les dernières décennies. Il y a trente ans, les revues scientifiques n'étaient disponibles qu'en version papier, et chaque mois, les membres de la SEC recevaient une enveloppe contenant le dernier numéro de *The Canadian Entomologist*. L'accumulation de ces numéros dans notre bibliothèque personnelle a épargné à plusieurs d'avoir à se traîner jusqu'à une bibliothèque institutionnelle lointaine où on devait se faire compétition pour l'accès à la seule copie (et parfois attendre qu'elle revienne de la reliure!). Aujourd'hui, les entomologistes associés à une bibliothèque institutionnelle peuvent avoir accès aux 149 volumes de la revue sans quitter leur bureau, et la compétition pour y accéder est virtuellement inconnue. Jusqu'à récemment, *The Canadian Entomologist*, comme la plupart des revues scientifiques nord-américaines chargeait un coût par page pour la publication et il y avait un rabais pour les membres. Cependant, comme les revues compétitrices, nous ne chargeons plus pour la publication dans la revue et nous ne pouvons donc plus offrir de rabais aux membres. Il y a donc eu une érosion de la motivation à être membre à long terme de la SEC qui provenait auparavant de l'accès facile à *The Canadian Entomologist* et des coûts de publication réduits.

Lors de ses réunions à Orlando en septembre

was determined to dispose of the headquarters building and engage the services of an association management company. However, changes in the Society's environment continue apace, and the Board believes it is time for another assessment of the appropriate face for the Entomological Society of Canada to present to members and potential members. We need to examine what value we can provide to members so that all entomologists in Canada will want to be members all the time, not just when they plan to register at the Joint Annual Meeting at the membership discount rate.

The Board welcomes your input to the review process. Please write to me telling me what you like about ESC, and what you value about it. Tell me how we can make membership more valuable to you. Tell me why your non-member colleagues do not join. Send your input on these and similar topics to Neil_Holliday@UManitoba.CA. I will convey it to the Board, so that we can work to improve the ESC and make its face as attractive as possible.

D.Giberson

Baetis bundyae (Ephemeroptera: Baetidae) male imago, from Char River near Rankin Inlet, NU

2016, le conseil d'administration de la SEC a passé un temps considérable à réviser les adhésions et les tendances et influences des circonstances changeantes dans les revenus de la SEC, et a conclu que la Société devait repenser sa façon d'opérer. Pour l'année actuelle de la Société, nous avons déjà dévoué une réunion du CA au sujet des adhésions, et avons planifié une autre réunion du CA aux finances. L'année du CA culminera avec un exercice de planification stratégique associé avec la réunion annuelle conjointe à Winnipeg. Notre SEC actuelle a bénéficié d'épisodes précédents d'introspection et d'évaluation organisationnelle, plus récemment en 2013 lorsqu'il a été décidé de disposer de l'immeuble du siège de la SEC et d'embaucher les services d'une compagnie de gestion d'association. Cependant, les changements dans l'environnement de la Société se poursuivent rapidement et le CA croit qu'il est temps de réévaluer le visage approprié de la Société d'entomologie du Canada à présenter aux membres et aux membres potentiels. Nous devons examiner ce que nous estimons pouvoir fournir aux membres afin que tous les entomologistes du Canada veuillent être membres tout le temps, et pas seulement lorsqu'ils prévoient s'inscrire à la réunion annuelle conjointe au taux préférentiel des membres.

Le CA vous invite à donner votre opinion dans le processus de révision. Veuillez m'écrire afin de me dire ce que vous aimez concernant la SEC et ce que vous appréciez. Dites-moi comment nous pouvons donner plus de valeur à l'adhésion. Dites-moi pourquoi vos collègues non-membres ne joignent pas la société. Envoyez-moi votre avis sur ces questions et des sujets similaires à Neil_Holliday@UManitoba.CA. Je les transmettrai au CA afin que nous puissions travailler à améliorer la SEC et rendre son visage le plus attrayant possible.

Joint Meeting of the Entomological Societies of Canada and Manitoba
Fairmont Winnipeg Hotel
Winnipeg, Manitoba
22-25 October 2017
SMALL IS BEAUTIFUL

On behalf of the Entomological Societies of Canada and Manitoba, we are pleased to invite you to the **ESC-ESM 2017 Joint Annual Meeting: Small is Beautiful.** Nestled in between two very large entomology meetings, ICE in Orlando 2016 and ESA-ESC in Vancouver 2018, the ESC-ESM JAM in Winnipeg will undoubtedly be a much smaller event but an excellent opportunity to showcase entomological research in Canada.

Keynote Speaker: Angela Douglas, Cornell University – "Interface between insects and bacteria"

Plenary Symposium Speakers:
- Keith Summerville, Drake University – Forestry Symposium
- Dale Clayton, University of Utah – Ectoparasite Symposium
- Anthony Ives, University of Wisconsin-Madison – Population Dynamics Symposium
- To be determined – Pollination Symposium

Additional Symposia:
- Biological Survey of Canada
- Graduate Student Showcase: Contact Miles Zhang or Anne-Sophie Caron

Organizing a member symposium or a workshop? Contact: **Paul Fields (Scientific Chair), paul.fields@agr.gc.ca**

***** Submitted paper deadline is 31 July 2017 *****

Registration: early registration deadline -11 September 2017. Online registration closes 15 Oct. 2017
- Regular members - early registration ($350), late or onsite registration ($450)
- Early professional members – early registration ($265), late or onsite registration ($365)
- Students - early registration ($175), late or onsite registration ($275)
- Non-members - early registration ($450), late or onsite registration ($585)
- Single day onsite registration ($200)

Member Discount: Renew or become an ESC member - $26 for students and $105 for regular members

Accommodations: Fairmont Winnipeg Hotel, discount meeting rate - $169 + taxes (book early).
Staying at the conference hotel is convenient for you and lowers the meeting costs.

Associated Meetings:20 October 2017 - Agriculture & Agri-Food Canada Working Group on Biocontrol
26-27 October 2017 - Western Forum on Pest Management
http://www.westernforum.org/

Visit ESC-ESM 2017: http://home.cc.umanitoba.ca/ESM

For general meeting inquiries contact: Rhéal Lafrenière (General Chair), Rheal.Lafreniere@gov.mb.ca

Réunion conjointe annuelle des Sociétés d'entomologie du Canada et du Manitoba
Hôtel Fairmont, Winnipeg (Manitoba)
22-25 octobre 2017
PETIT, C'EST BEAU

De la part des Sociétés d'entomologie du Canada et du Manitoba, nous sommes heureux de vous inviter à la **Réunion annuelle conjointe SEC-SEM de 2017 : Petit, c'est beau**. Nichée entre deux très grandes réunions d'entomologie, soit le ICE 2016 à Orlando et la SEA-SEC 2018 à Vancouver, la réunion SEC-SEM à Winnipeg sera sans doute plus petite, mais constituera une excellente opportunité de présenter la recherche entomologique au Canada.

Conférencière principale : Angela Douglas, **Université Cornell** – "L'interface entre les insectes et les bactéries"

Conférenciers des symposiums pléniers :
- Keith Summerville, Université Drake – Symposium en foresterie
- Dale Clayton, Université de l'Utah – Symposium sur les ectoparasites
- Anthony Ives, Université de Wisconsin-Madison – Symposium sur la dynamique des populations
- À déterminer – Symposium sur la pollinisation

Symposiums additionnels :
- Commission biologique du Canada
- Vitrine aux étudiants gradués – contactez Miles Zhang ou Anne-Sophie Caron

Vous organisez un symposium ou un atelier? Contactez Paul Fields (président du comité scientifique), paul.fields@agr.gc.ca

*** **Date limite pour la soumission des présentations : 31 juillet 2017** ***

Date limite pour l'inscription hâtive – 11 sept. 2017. Date limite pour l'inscription en ligne – 15 oct. 2017.
- Membres réguliers - inscription hâtive (350$), inscription tardive ou sur place (450$)
- Membres jeunes professionnels – inscription hâtive (265$), inscription tardive ou sur place (365$)
- Étudiants - inscription hâtive (175$), inscription tardive ou sur place (275$)
- Non membres - inscription hâtive (450$), inscription tardive ou sur place (585$)
- Inscription sur place pour une journée (200$)

Réduction pour les membres : Renouveler/joindre la SEC – 26$ pour les étudiants et 105$ pour membres réguliers.

Hébergement : Fairmont Winnipeg Hotel, tarif réduit – 169$ + taxes (réservez tôt). Réserver une chambre dans cet hôtel est pratique et réduit les coûts de la réunion.

Réunions associées :
20 octobre – Groupe de travail sur la lutte biologique d'Agriculture et Agroalimentaire Canada
26 et 27 octobre – Forum de l'Ouest sur la lutte antiparasitaire http://www.westernforum.org/

Visitez SEC-SEM 2017 : http://home.cc.umanitoba.ca/ESM

Pour des renseignements généraux, contactez : Rhéal Lafrenière (président général), Rheal.Lafreniere@gov.mb.ca

The 2016 Bert and John Carr Award Recipient - Anna Solecki

The Bert and John Carr Award's intent is to promote interest in science and nature, by funding research on faunistics, natural history and taxonomy of Canada's insect fauna. As the 2016 recipient and as a student, I am very grateful to have received this prestigious award honouring two knowledgeable naturalists and entomologists.

This award, along with a Northern Research Fund award and the Northern Scientific Training Program, has been used to partially support my field work in the summer of 2016 in Churchill, Manitoba, at the Churchill Northern Studies Centre for my PhD work at the University of Guelph. My overall research is focused on examining the trophic and taxonomic diversity, as well as phylogenetic community structure, of Diptera in the Arctic. Although flies are very abundant, species-rich and ecologically diverse in the Arctic, they are not well documented. I hope to examine and determine some of the factors affecting their diversity. In particular, my research in Churchill is looking at the fly community structure along an ecological gradient, the boreal forest-tundra transition. Preliminary work has suggested that trophic roles of particular Diptera families are important for predicting community structure in open and forest habitats.

I obtained my MSc from McGill University in 2015 on the biogeography of higher Diptera

Récipiendaire 2016 du prix Bert et John Carr – Anna Solecki

L'objectif du prix Bert et John Carr est de promouvoir l'intérêt pour les sciences et la nature en finançant la recherche sur la faunistique, l'histoire naturelle et la taxonomie de la faune entomologique du Canada. En tant que récipiendaire 2016 et en tant qu'étudiante, je suis très reconnaissante de recevoir ce prix prestigieux à la mémoire de deux naturalistes et entomologistes pleins de savoirs.

Ce prix, ainsi que le financement sur la recherche nordique et le programme de formation scientifique nordique ont été utilisés en partie pour appuyer mes travaux de terrain de l'été 2016 à Churchill, Manitoba, au centre d'études nordiques Churchill dans le cadre de mes travaux de doctorat à l'Université Guelph. Ma recherche examine principalement la diversité trophique et taxonomique ainsi que la structure phylogénétique des communautés de diptères en Arctique. Bien que les mouches soient très abondantes, riches en espèces et écologiquement diversifiées dans l'Arctique, elles ne sont pas bien documentées. J'espère examiner et déterminer quelques-uns des facteurs qui affectent leur diversité. Plus particulièrement, mes recherches à Churchill regardent la structure des communautés de mouches le long d'un gradient écologique, la transition entre la forêt boréale et la toundra. Les travaux préliminaires suggèrent que les rôles trophiques de familles spécifiques de diptères sont importants pour prédire la structure des communautés dans les habitats ouverts et forestiers.

J'ai obtenu ma maîtrise de l'Université McGill en 2015 sur la biogéographie des diptères supérieurs dans les prairies glaciaires et postglaciaires sous la supervision de Dr

in glacial and postglacial grasslands under the supervision of Dr Terry Wheeler and Dr Chris Buddle. I had the opportunity during this time to be a part of the Northern Biodiversity Program, a large project which, among other goals, aims to document insect diversity in the Arctic, as well as to document changes in northern insect assemblages over the last 50 years.

My passion for insects grew from the work that I performed at the Lyman Entomological Museum during my undergraduate degree in applied zoology at Macdonald Campus, McGill University. I was able to spend my summers and a few semesters working on the taxonomy of the tribe Fiebrigellini (Chloropidae: Diptera) for my undergraduate thesis project with Dr Terry Wheeler. This project spurred my passion not only for flies, but also for taxonomy and natural history, which has laid the foundation for my current work on Arctic insects.

Terry Wheeler et Dr Chris Buddle. J'ai eu la chance, durant cette période, de faire partie du programme de biodiversité nordique, un vaste projet qui vise, entre autres, à documenter la diversité des insectes dans l'Arctique ainsi que les changements dans l'assemblage des insectes nordiques durant les 50 dernières années.

Ma passion pour les insectes a grandi suite au travail que j'ai effectué au musée entomologique Lyman durant mes études de premier cycle en zoologie appliquée au campus Macdonald de l'Université McGill. J'ai pu passer mes étés et quelques sessions à travailler sur la taxonomie de la tribu Fiebrigellini (Chlorpidae: Diptera) pour mon projet de premier cycle avec Dr Terry Wheeler. Ce projet a alimenté non seulement ma passion pour les mouches, mais également pour la taxonomie et l'histoire naturelle, ce qui a posé les fondations de mon travail actuel sur les insectes de l'Arctique.

People in the news / Gens qui font les manchettes

J. Moisan-De Serre

Véro, flanked by Julien Saguez and Guy Boivin, with her award.

Véronique Martel receives prestigious award

Véronique Martel received the Décoration Léon Provancher - Catégorie Jeune Chercheur at the Joint Annual Meeting of the Société d'Entomologie du Québec and the Société de Protection des Plantes du Québec, held in Nicolet (Quebec), 2-4 November 2016. The award honors young researchers who have successfully defended their doctoral thesis in the past 10 years and who have made an outstanding contribution to entomology in Quebec.

STEP Corner / Le coin de la relève

Anne-Sophie Caron and Miles Zhang

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 entsoccan.students@gmail.com. For regular updates on new Canadian entomological research, you can join the ESC Students Facebook page or follow us on Twitter @ esc_students.

Student Awards

While a lot of the awards deadline have already passed, do not forget to check the ESC website for information about the different student awards available such as conference travel awards at http://www.esc-sec.ca/studentawards.php.

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. We look forward to hearing from you,

Miles and Anne-Sophie

Aperçu de la recherche

Nous continuons à faire la publicité des publications des étudiants gradués 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 entsoccan.students@gmail.com. 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.

Bourses étudiantes

Bien que la plupart des dates limites pour les bourses soient déjà passées, n'oubliez pas de consulter le site de la SEC pour de l'information à propos des différentes bourses étudiantes disponibles telles que les bourses de voyages pour des conférences à http://www.esc-sec.ca/f-studentawards.php.

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. Au plaisir d'avoir de vos nouvelles,

Miles et Anne-Sophie.

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).

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.

Clark, Erin. Ph.D. 2016. The potential of novel phenol-derivative compounds for antifeedant control of several stored-product coleopteran pests. Supervisor: Dezene Huber, University of Northern British Columbia.

Hervet, Vincent. Ph.D. 2016. Host range and multitrophic interactions between the parasitoid *Cotesia vanessae* (Hymenoptera: Braconidae) and Noctuidae (Lepidoptera) hosts in North America. Supervisors: Kevin Floate, Agriculture and Agri-Food Canada – Lethbridge and Rob Laird, University of Lethbridge.

Isitt, Rylee. M.Sc. 2016. Local and geographic variation in the pheromone blend of the spruce beetle, *Dendroctonus rufipennis* Kirby (Coleoptera: Curculionidae). Supervisors: Dezene Huber, University of Northern British Columbia and Katherine Bleiker, Canadian Forest Service.

Moffat, Chandra. Ph.D. 2016. On the role of host trait variation in insect diversification. Supervisor: Stephen Heard, University of New Brunswick.

Wilches, Diana. M.Sc. 2016. Effects of extreme temperatures on the survival of the quarantine stored-product pest, *Trogoderma granarium* (khapra beetle) and on its associated bacteria. Supervisors: Kevin Floate, Agriculture and Agri-Food Canada - Lethbridge, Rob Laird, University of Lethbridge and Paul Fields, Agriculture and Agri-Food Canada - Winnipeg.

AAFC appoints the next generation of entomologists

Tara Gariepy and Peter Mason

We are pleased to inform members of the Entomological Society of Canada that Agriculture and Agri-Food Canada has recently hired a batch of entomologists to positions across Canada. These appointments are part of AAFC's plan to replace retiring scientists and maintain capacity to address threats to Canadian agriculture. The entomological community in Canada will benefit through the energy and enthusiasm that these scientists will bring to the ESC.
Please join us in welcoming the new recruits.


D. Lauzer

Dr Paul Abram
Research Scientist, Biological Control of Insect Pests, Agassiz Research and Development Centre, Agassiz, British Columbia

Before arriving in Agassiz, Dr Abram completed a PhD and postdoctoral research at the Université de Montréal and AAFC Saint-Jean-sur-Richelieu (2012-2016), and a MSc at Carleton University, AAFC Ottawa, and CABI Switzerland (2009-2012). His work to date has focused on the behaviour and ecology of biological control agents for invasive arthropod pests in Canada (e.g., brown marmorated stink bug, swede midge, and leek moth). His future research program will continue to focus on the use of indigenous and exotic natural enemies to address invasive arthropod pest problems in horticultural production systems, and gaining an understanding of the ecological processes necessary to develop safe and effective biological control programs.

Dr Adam Brunke
Research Scientist, Systematics and Taxonomy of Staphylinidae, Ottawa Research and Development Centre

Dr Brunke completed his PhD at the University of Copenhagen, in Denmark (2015). He then pursued post-doctoral research fellowships at the Natural History Museum of Vienna (Austria) (2015-2016) and Agriculture and Agri-Food Canada in the Canadian National Collection of Insects, Arachnids and Nematodes (Ottawa, Canada) (2016-2017). Dr Brunke's work to date has focused on solving global to regional-scale problems in phylogenetics, classification, biogeography and taxonomy of rove beetles (Coleoptera: Staphylinidae) using an integration of molecular, morphological and fossil data. Morphological datasets have been enriched using 3-D (microcomputed tomography) and 3-D-like (rSEM) analyses. His future research program will continue this focus, with new efforts toward the acquisition of molecular data from museum specimens of rare species and the complete integration of morphological and molecular data to uncover cryptic diversity within and diagnostic tools for the North American rove beetle fauna.

Tara Gariepy (tara.gariepy@agr.gc.ca) is a research scientist at Agriculture and Agri-Food Canada, London Research and Development Centre. Her research focuses on invasive insect pests, biological control, and molecular ecology. Peter Mason (peter.mason@agr.gc.ca) is a research scientist at Agriculture and Agri-Food Canada, Ottawa Research and Development Centre. His research focuses on biological control of arthropod pests, biologically-based risk assessment, and invasive alien species.

Dr Haley Catton
Research Scientist, Field Crop Entomology, Lethbridge Research and Development Centre, Lethbridge, Alberta

With a diverse background researching trees, weeds, native plants, insects, and mammals, Dr Catton specializes in population biology, insect-plant interactions, biological control, and insect ecology. Her research program at AAFC focuses on the biology and integrated pest management of insect pests of cereal crops, ranging from established pests like wheat stem sawfly to emerging pests such as the invasive cereal leaf beetle. Dr Catton earned a BSc in Agriculture (Plant Systems) with Distinction, and a MSc in Plant Science from the University of Manitoba. Her PhD from the University of British Columbia Okanagan focused on biological control of weeds with insects. Dr Catton was a visiting researcher the University of Queensland in Brisbane, Australia, during her PhD studies, and conducted postdoctoral research in population biology at the University of Lethbridge.

Dr Chandra Moffat
Research Scientist, Entomology, Fredericton Research and Development Centre, Fredericton, New Brunswick

Dr Moffat completed her PhD at the University of New Brunswick with Stephen Heard. Her thesis focused on the role host plant traits play in driving the host range and diversification of herbivorous insects. For her MSc (University of British Columbia Okanagan with Jason Pither and Bob Lalonde, AAFC and CABI), she investigated the ecological host range and cryptic genetic diversity of a candidate weed biological control agent. She also completed three co-op terms (University of Victoria) with AAFC in integrated pest management and greenhouse biological control and one in arthropod biological control at CABI. Chandra previously served as the Student Representative and Co-Chair of the Student Affairs Committee for the ESC, as well as Co-Chair of the International Student Affairs Committee for ICE 2016. In her new research program, Dr Moffat will apply her expertise in community and molecular ecology to identify the interactions among insect pests, their host-plants (primarily potato, but also other crops) and communities of beneficial arthropods above and below ground. Her current projects include characterizing the evolutionary ecology of the Colorado potato beetle - potato interaction to improve IPM strategies and quantifying biodiversity of soil arthropods (Collembola) under different agronomic practices using DNA metabarcoding.

Dr Boyd Mori
Research Scientist, Entomology, Saskatoon Research and Development Centre, Saskatoon, Saskatchewan

Dr Mori completed his PhD in 2014 at the University of Alberta on pheromone monitoring and management of the red clover casebearer (*Coleophora deauratella*) moth in the Peace Region of Alberta. He then undertook a Postdoctoral Fellowship at the Swedish University of Agricultural Sciences (Alnarp, Sweden) where he researched the chemical ecology of the highly invasive spotted wing fruit fly (*Drosophila suzukii*) with a focus on alternative pest management strategies. Boyd joined AAFC-Saskatoon in April 2016. Boyd's primary project will be on the ecology of swede midge-host plant interactions, where he aims to identify host plant resistance mechanisms against the swede midge, a potentially significant pest of canola. He is a strong proponent of integrated pest management and has a robust background in insect behaviour,

physiology and population genetics which he uses to develop monitoring and management tools for insect pests.

Félix Longpré
Insect Rearing Biologist, London Research and Development Centre, London, Ontario

After a bachelor's degree at Université de Montréal, Félix completed a Master's degree in Dr Timothy Work's laboratory at Université du Québec à Montréal. His research focussed on the effects of forest harvesting on epigeic fauna food webs using stable isotopes. Félix spent most of his professional life rearing beneficial insects and mites. He worked for many years as the production manager for Anatis Bioprotection before spending a year in China, working as a consulting insect rearing biologist for Fujian Yan Xuan Biological Technology Co. Ltd. Over the years he has gained experience rearing *Ephestia kuehniella*, *Podisus maculiventris*, and different species of *Trichogramma*, ladybugs and mites. As the new Insect Rearing Biologist, he will be in charge of managing insect production at the London Research Centre and will provide insect rearing support for AAFC researchers and technicians. Félix is interested in rearing high quality insects efficiently and would like to streamline insect production by developing automated insect rearing methods that could minimize labor by incorporating electronics into species-specific 3D printed insect rearing cages.

Dr Julia J. Mlynarek
Research Scientist, Field Entomology, Harrow Research and Development Centre, Harrow, Ontario

Dr Mlynarek started her position as the Research Scientist (field entomology) at the Harrow Research and Development Centre (HRDC) at the beginning of September 2016. Dr Mlynarek completed a MSc in Entomology at McGill University in 2009, under the supervision of Dr Terry Wheeler. Her MSc thesis focused on the taxonomy and systematics of the Chloropidae (Diptera). In 2014, she graduated with a PhD in Biology from Carleton University, under the supervision of Dr Mark Forbes, for her entomological studies of host-parasite associations in damselflies (Odonata) infested by water mites (Acari) and gregarines (Apicomplexa). Most recently, she conducted post-doctoral research at the University of New Brunswick, with Dr Stephen Heard, investigating the diversity and population genetics of leaf mining insects (Diptera, Coleoptera, and Lepidoptera) feeding on the plant family Asteraceae. Dr Mlynarek brings a diverse background and a wealth of expertise in species interactions, insect ecology, and systematics. She will apply her expertise to monitor insect populations and communities, and develop sound integrated pest management strategies in field, horticultural and vegetable crops of Southern Ontario.

Dr Jean-Philippe Parent
Research Scientist, Horticultural Entomology, London Research and Development Centre, Vineland Station, Ontario

Dr Parent conducted his PhD research at Université de Montréal, in collaboration with the St-Jean-sur-Richelieu Research and Development Centre. His thesis focussed on the behavioral demonstration in *Trichogramma* wasps of their capacity to measure time, and its modulation by

temperature. A second component of his thesis was to investigate the capacity of a parasitoid to learn to associate intervals of time with an odour reward, using *Microplitis croceipes* as a model system, in collaboration with Keiji Takasu of Kyushu University. He is now working at the Vineland – London Research and Development Centre, focusing on pest control of fruit trees and grapevines. Ongoing research projects include vector identification of red blotch grapevine virus in treehoppers and the use of *Trichogramma* wasps to control populations of Oriental fruit moths in orchards. Research interests include the use of biological control agents, behavioural manipulations of insects such as infochemical-mediated attraction, repulsion and learning, as well as movement and exploitation of resources by both pest and biological control agents in an arboreal environment.

Dr Meghan Vankosky
Research Scientist, Field Crop Entomology, Saskatoon Research and Development Centre, Saskatoon, Saskatchewan

Dr Vankosky has worked on integrated insect pest management in field crops, greenhouse crops, and orchard crops, always with a strong emphasis on biological control and plant-insect interactions. Dr Vankosky most recently completed a 1-year term as a postdoctoral scholar working with Dr Mark Hoddle at the University of California, Riverside. At UCR, she established a release and phenology project for *Diaphorencyrtus aligarhensis*, a parasitoid of the Asian citrus psyllid (*Diaphorina citri*). In addition to her experience working with classical biological control in the citrus orchards of California, Dr Vankosky worked to understand the life history and behaviour of an omnivorous biological control agent of greenhouse pests during her PhD at the University of Windsor, and on integrated pest management and biological control of the pea leaf weevil (*Sitona lineatus*) in southern Alberta during her MSc at the University of Alberta. Dr Vankosky's current research interests include insect pest and natural enemy monitoring in the Prairies, understanding the ecology and biology of field crop pests, and developing innovative approaches to integrated pest management.

Dr Tyler Wist
Research Scientist, Field Crop Entomology, Saskatoon Research and Development Centre, Saskatoon, Saskatchewan

Dr Wist spent his early insect years killing mosquitos and studying insects of the urban forest before chasing pollinators in echinacea crops for his MSc at the University of Saskatchewan. A PhD from the University of Alberta taught him the unseen world of insect chemical ecology and an NSERC Visiting Fellowship had him chasing pest and beneficial insects in cereal and canola crops. As a Research Scientist, Tyler is pursuing many entomological passions including modeling the effect of beneficial insects on cereal aphid populations, infecting wheat and camelina with aster yellows through leafhopper vectors, working with wheat midge and its parasitoids, studying landscape effects on and economic threshold of flea beetles, and studying the chemical ecology of several pest insects. Tyler's future holds expanded projects on aphids, aster leafhoppers, wheat midge and emerging insect pests in field crops of the Canadian Prairies.

Preface

When I was a graduate student in the Department of Entomology at the University of Manitoba, Professor Thorsteinson, Thor, was the Head of the Department, and a rather enigmatic and mythical character. Although I never took a course from him, he served on my PhD examining committee, so I had more contact with him than many other students in the Department at the time. My interactions with him were always unpredictable. Some days he seemed distracted, he always had a lot on his mind. Some days he would focus more fully on our discussion, or the question I had asked, and he would be thoughtful and insightful. One thing is for certain, my interactions with him were always interesting.

Ásgeir Jónas Thorsteinson (1917-1998)

In the summer of 1976, prior to Thor's retirement, he suffered a serious automobile accident, which delayed the family`s post-retirement plans to move to Vancouver. They eventually moved west, and he became disconnected from the entomological community in Manitoba. I encountered him only once after that in the 1980's, at a meeting of the Western Forum, a collective of pest management specialists working out practical solutions to insect and plant disease problems. Thor and I sat down in the bar after an afternoon session for a beer; he was most interested in what had happened in the Department since he had left. He was particularly interested in the Canada Biting Fly Centre, a valuable component of the Department for about 10 years. The Director of the CBFC was Dr Mary Chance. Mary reverted to her maiden name at the time of her marriage to Manfred Jaeger. It just so happened that her maiden name was Galloway. From a distance, this caused Thor to think about the ramifications of this change, and he eventually asked me what had happened to my wife, Carol. When I explained the situation, we both had a good laugh. Cam Jay, a subsequent Head of Department was some years later visiting Vancouver with his wife, Doreen. They were driving through the city when Cam decided they should visit Thor, or at least call him while they were in the city. He had no idea about where Thor and his wife, Mildred, were living, so he turned into a strip mall where there was a telephone booth by the sidewalk. He jumped out of their vehicle and entered the telephone booth with the notion to look up Thor's contact information. As his fingers were walking up and down the pages of the directory, there was a gentle tap-tap-tap on the glass, and as he looked up, there was Thor smiling back at him. Talk about coincidence!

Several years ago, it occurred to me that I hadn't heard anything about Thor for many years. I searched obituaries on-line; I used various on-line search strategies and contacted entomologists around British Columbia to find something about how to find out where he was or what had happened to him. It wasn't until Rob Currie forwarded Mildred's obituary to me that I was able to complete my quest. I contacted Thor's family via the funeral home, and his daughter, Julian, contacted me. From that point, we have worked together to compile the following obituary. (T.D.Galloway)

Editor's note. *Remarkably, following his death in 1998, no scientific tribute to A.J. Thorsteinson was published. We are, therefore, pleased to reproduce in the Bulletin a slightly revised version of a recently published summary of Dr Thorsteinson's career. The full version, which includes a list of Dr Thorsteinson's publications and the names of his graduate students, appears in the* Proceedings of the Entomological Society of Manitoba (2014, **70:** 5–10)*. We thank the Editor of the* Proceedings *for granting us permission to use this material.*

Thor was born 2 September 1917 in Winnipeg. He attended high school in Winnipeg from 1931 to 1935, during which time he worked in the commercial fishery on Lake Winnipeg. He was valedictorian of his graduating class in 1935 before enrolling in Winnipeg Normal School to obtain his first class teacher certification. He taught public school at Old Fort School in 1937-1938. He was hired in the Department of Entomology at the University of Manitoba during the summers of 1939 and 1940, where he had enrolled in 1939; he received an Isbister Scholarship at the University of Manitoba, and the University Gold Medal in his graduating year, when he also served as Vice Stick and President of the fourth year class in 1940-1941. Upon graduation, he worked as an assistant cereal breeder in the Cereal Division at the Rust Research Laboratory on the University of Manitoba campus.

Thor's academic career was interrupted by WWII, and he served as a Lieutenant in the Canadian Army Infantry, Motor Division from 1942-1944. After the war, he pursued graduate training in Entomology and entered a programme at Imperial College, University of London in 1945 with a 2-year British Council Scholarship. He completed his PhD in December 1946, after which he returned to Canada to work for 2 years as an insect physiologist at the Forest Insect Laboratory in Sault Ste Marie, Ontario. He joined A.V. Mitchener in the Department of Entomology at the University of Manitoba in 1948 as an Assistant Professor. He was promoted to Associate Professor in 1953 and became Acting Chairman of the Department of Entomology in 1956 and Professor of Entomology and Chair in 1958. Thor supervised 21 graduate students from 1955 to 1974, many of whom had long, successful careers in entomology. Thor stepped down as Head of the Department in 1976 and retired in August 1977.

It's difficult to categorize Thor's research activities. He would have called himself an insect physiologist, specializing in host plant selection and interactions between herbivorous insects and plants. He and his collaborators published at least 40 refereed papers, spanning a considerable range of topics. Notable among these is the Thorsteinson (1960) paper, "Host plant selection in phytophagous insects", which appeared in the Annual Review of Entomology. This paper was recognized as a Science Citation Classic, cited more than 300 times since it was published, and is still being cited in 2015. He and a number of post-doctoral researchers have contributed significantly to the nature of insect-host plant relationships. Many of these studies involved important crop pests, such as diamondback moth, cabbage maggot, and the two-striped and lesser migratory grasshoppers.

Another well connected thread through Thor's research career was his interest in biting flies. This included mosquitoes, and the impact of various natural chemicals on growth and development for mosquito larvae. In later years, he interacted extensively with the City of Winnipeg personnel who were in charge of mosquito abatement activities. Thor's views were well entrenched and he was a frequent contributor to public hearings conducted by the City. He firmly believed that thermal fogging, the adulticide strategy at the time, was not effective and should be abandoned. Dr Reiny Brust, one of the best known mosquito researchers in Canada, studied for his MSc under Thor's supervision.

Another area related to biting flies arose from his observations on behaviour of host-seeking horse flies. As the story goes, he watched horse flies accumulate inside his vehicle when he parked with the windows rolled down at the family cottage near Piney, Manitoba. This is certainly prime horse fly habitat, so there would have been no shortage of flies for study. As he wondered about what it was that attracted flies to enter his vehicle, he considered heat as a first hypothesis, given the higher temperature inside the car. He then conceived what he initially referred to as a heliothermal trap, a large black target that he thought would absorb the sun's radiant energy and thus have a higher temperature. The trap for his target worked brilliantly, but as he later discovered through careful experimentation carried out by graduate students, Garth Bracken,

Dieter Peschken and Wally Tostowaryk, along with departmental collaborator, Dr Bill Hanec, it was the reflective nature of a shiny, black sphere that was most responsible for the attraction. This trap became universally known as the Manitoba Horse Fly Trap, and you can find horse fly workers the world over who use this trap, or one based on its principles, wherever horse flies are studied. His papers on the horse fly trap have been cited collectively more than 200 times. As an amazing testament to the effectiveness of the trap, TDG recorded an astounding average catch of 10,000 horse flies, per hour, one day at a study site near Whitemouth Lake, Manitoba.

It is unfortunate this summary was inadvertently delayed from the time of his death, 15 March 1998. In its publication, we hope Thor's contributions to his field of research and to the University of Manitoba might be recognized.

Reference

Thorsteinson, A.J. 1960. Host selection in phytophagous insects. Annual Review of Entomology, **5:** 193–218.

Terry D. Galloway (Winnipeg) and Olivia Julian Thorsteinson (Vancouver)

Dr Thelma Finlayson, CM (1914-2016)

Thelma receiving the Order of Canada in 2005

Professor Thelma Finlayson passed away peacefully in her sleep on 15 September 2016 at the age of 102. Thelma had an amazing, fascinating and influential life. She was a pioneering scientist and a giant in the pest management world. She, together with Dr Bryan Beirne, had a vision of controlling pests in an integrated manner, with as little chemical pesticide use as possible, long before such ideas were fashionable or accepted. Together they founded the Masters of Pest Management Program (MPM) in 1973 at Simon Fraser University (SFU). This program is still going strong today, having graduated hundreds of students from around the world.

I first met Thelma in 1983 when I arrived at SFU to register in the MPM program. For me it was a new program, a new university and a new country. To say I was overwhelmed is an understatement. Everything felt strange and foreign. I had not been on the SFU campus for more than an hour when Thelma bounced up and welcomed me to the program, the university and the country. She told me her door was always open and to pop in and see her any time. Suddenly things didn't seem quite so strange and foreign anymore. I remember that day as clearly as if it was yesterday. I was 21 and Thelma was 69 and had officially been 'retired' for 4 years. Thelma became my mentor and role model, and also one of my closest friends. She has been and continues to be one of the greatest influences in my life and in the lives of so many others.

Thelma was born on 29 June 1914 and did not meet her father until he came home from the First World War when she was 4 years old. She grew up in a rural area and it was a big adventure to move 120 miles to the city of Toronto to attend the University of Toronto in 1932. It was her first trip away from home. Thelma took an Honours Science degree and did not take an entomology class until she was in her fourth year. The eminent entomologist who was the professor for the course walked in to class on the first day carrying hundreds of vials of preserved insects, wrote the names of ten texts on the board, then told Thelma, and the one other student in the class, to dissect and draw all the specimens. Then he left and they never saw him again, although he had supplied an exam for them to write at the end of the academic year. Although Thelma said it helped her become self-reliant and to work independently, it was extremely traumatic and she vowed that she would teach her own entomology courses very differently!

Thelma graduated in 1936, the height of the Great Depression, and was determined to get a job at the Dominion Parasite Laboratory in Belleville, Ontario, which later became part of Agriculture Canada and prelude to Agriculture and Agri-Food Canada. She arrived and presented her newly minted qualifications but was immediately turned away as they were not about to hire a female! She refused to leave, sitting on their doorstep, reading entomological texts in their library, chatting to other scientists and generally refusing to just "go away quietly". Eventually someone needed an extra pair of hands and so she was asked to help. After a period of volunteering, eventually someone felt guilty enough to actually offer to pay her for the work she was doing and she was offered a job for the princely sum of $50 a month, as long as she worked holidays and weekends as well! Thelma was the first female scientist to be hired. Sometime later she married another entomologist there, Roy Finlayson. Thelma was then fired because, in 1940, married women were not allowed to work in the civil service. Then war struck again, and, in 1942, Thelma, and many other women scientists were hired to replace the men who had gone to fight. But after the war, they said, congratulations, we've won the war, you're fired! Thelma fought all the way up to the Assistant Deputy Minister, and won – winning an extremely important human rights battle for women in Canada.

Thelma's first project at Belleville was in the classic biological control of the European spruce sawfly that decimated the forests of New Brunswick and Quebec in the 1930s and 1940s. This involved rearing millions of wild caught sawfly cocoons from Europe and Japan to identify and propagate possible parasites for release. She then spent several years collecting and dissecting hundreds of thousands of grasshoppers to harvest their immature parasites. She also worked with a parasite of sawflies to determine the best diet and temperature ranges needed to achieve the highest levels of fertility and fecundity. One of her greatest specialties was taxonomy of final instar larvae of beneficial parasites used to control agricultural and forest insect pests. The Laboratory was widely regarded as one of the most prestigious biological control centres in the world.

Thelma had an active and rewarding career with the government as an entomologist, published many papers and monographs, did a tremendous amount of foundational work in biological control and had two insects named after her, an oakworm moth, *Anisota finlaysoni*, and a wasp, *Mesopolobus finlaysoni*. When many people are beginning to think of retirement, Thelma moved across the country to the fledgling Simon Fraser University to begin a new career as a professor. It was not just very brave to start an entirely different career, but brave for other reasons too as she did not have a PhD because she had been too poor to continue at university. Over her career with the government, she published many monographs each of which could have been PhDs in their own right, but she did not have the actual degree. Despite this, she decided to embark on a career as a professor and came to SFU in 1967 where she helped Bryan Beirne establish the Masters of Pest Management program, the program that brought me to SFU, and Canada. Thelma was the

first woman to be hired as a professor in Biological Sciences and rose to full professor in a short time. She was also the first Professor Emerita. So many firsts!

The MPM program is, rightfully, world famous, attracting students from all over the globe. Many overseas graduates have gone back to their own country afterwards to become leaders in their forestry or agriculture departments, and those in Canada are employed in all sectors of pest management, helping to ensure that Canada's agricultural produce is the finest in the world. As a biological control specialist, Thelma understood the importance of biological control in pest management so she endowed a Chair in Biological Control in 2008, currently held by Dr Jenny Cory. She has also established many awards and graduate scholarships for students in the Pest Management Program.

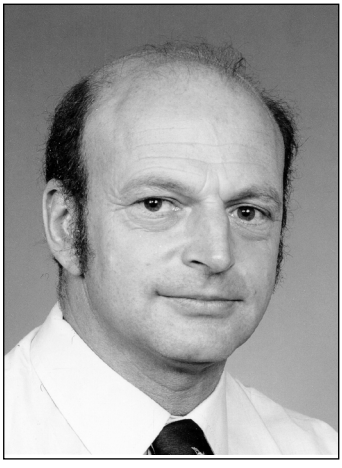
Before she retired, Thelma recognized that many students were in academic distress and she was particularly gifted in advising and helping them overcome their academic challenges. She was one of the first people associated with academic advising when it was first established at the university. She volunteered her time advising students for almost **40 years** before it became too much for her to physically walk to the centre from the parking lot. At 95 she was probably the oldest academic advisor ever. Innumerable students have benefitted from her sage advice and calm non-judgmental tones. Most have progressed into respected careers whereas, without Thelma, only despair and failure might have been the endpoint. After meeting with Thelma, students would be inspired and encouraged to find their way. Some years ago, I became the Undergraduate Director in Criminology and whenever I had a question that stumped me, I knew I could always ask Thelma as she knew the answers to all student related issues despite being in her 90s. I used to tell any of my Crim students who needed to go to advising to go and see Thelma, rather than whoever they were supposed to go to in Arts as I knew Thelma would look after them kindly. Two years ago, SFU, rebuilt the academic advice centre and renamed it the Thelma Finlayson Student Engagement Centre in her honour. At its opening she gave a speech for 5 minutes, with no notes! At her 100th birthday, she gave a 20 minute speech, again, with no notes.

Thelma won many awards. She was awarded an honorary doctorate from SFU in 1996, the Order of Canada in 2005, the YWCA Women of Distinction award in 2007, and SFU's Chancellor's Distinguished Service Award in 2010, to name just a few. She was made an Honorary Member and Fellow of the Entomological Society of Canada and Honorary Life Member of the Entomological Society of British Columbia and received the C.D. Nelson Memorial Prize for outstanding service to the University. She published her most recent paper at the age of 99!

Thelma led by example thousands of women scientists and showed time and time again that women can be great scientists and compassionate leaders. She influenced so many generations of young women as well as young men, and her legacy will live on forever in those people and their students, and in their students. She made a difference in so many peoples' lives by example and by advice. She changed the world for women scientists and we are forever grateful to her for her strength and leadership. To see a conversation with Thelma go to: https://www.youtube.com/watch?v=KwwFgTaeXpY.

We will never forget her.

Gail S. Anderson
Burnaby, British Columbia,
(Some parts based on "An Entomological Memoir" by Thelma Finlayson, 1984)



Christopher Frederick Hinks (1939 – 2016)

Chris Hinks, former research scientist at Agriculture and Agri-Food Canada (Ottawa and Saskatoon), died on 12 November 2016 in Bodmin, Cornwall, United Kingdom, after a lengthy battle with cancer.

Born on 10 March 1939 in Hayle, Cornwall, Chris developed an early fascination for insects, collecting moths and butterflies, and rearing larvae, as a small boy who enjoyed exploring the nearby dunes, woods and other wilderness areas. In 1952, the Hinks family emigrated briefly to the Western Australian Outback, as 'Ten Pound Poms'. However, they returned to Britain in 1954 due to his mother's poor health, settling first in Somerset, before eventually moving back to Cornwall. Here, Chris completed high school, then worked as a trainee forester (1957) before reporting to the British Army for National Service in 1958 (one of the last men conscripted). He served 2 years as a Specialist Regimental Signaller in Cyprus as part of the British Peace-keeping Force during the unrest between Turkish and Greek Cypriots. Interestingly, Chris carried his Imms' '*A Textbook of Entomology*' with him, and a tent mate, noting this, encouraged Chris to apply to Imperial College, University of London, after his army stint.

Following his discharge from the Army, Chris refocussed on his education, completing his pre-university A-level entrance requirements at Cornwall Technical College in 1 year, rather than the usual 2! At Imperial College, he was much influenced by O.W. Richards and R.G. Davies, receiving his BSc (Hons) in Zoology in 1964. He remained at Imperial College for his PhD (1968) under the supervision of N. Waloff, investigating the endocrine control of circadian rhythms in moths. While a PhD student, Chris published a landmark paper in *Nature* (Hinks 1967), demonstrating a role for the bioamine serotonin in controlling circadian rhythm in moths. An outcome of this work was strong encouragement to apply for positions in the United Kingdom (Imperial College), Australia (CSIRO, Division of Entomology, Canberra) and Canada (Department of Forestry, Government of Ontario, Sault St. Marie; Entomology Research Institute, Government of Canada, Ottawa; and Department of Biology, Carleton University, Ottawa).

Chris opted to take up a post-doctoral fellowship at Carleton University, studying virus-host relationships of insect-transmitted plant and insect viruses using electron microscopy and autoradiography. It was during this period that Chris met, then married (in December 1968) Elizabeth, at the time a student working in the same laboratory. The post-doctoral stint lasted less than a year (till October 1968) before Chris was appointed as a Research Scientist at the Entomology Research Institute (ERI), Canada Department of Agriculture. When the ERI was reorganised to become the Biosystematics Research Institute, Chris' group liaised closely with taxonomists, becoming involved in programs to examine histological and biochemical differences among species. Unfortunately, government bureaucracy left Chris frustrated and disappointed, leading to his resignation in 1978 and a return to Cornwall. Here, Chris and Elizabeth first operated a shop in Hayle, selling, books, cards, stationery and a selection of health foods and supplements. Then, in 1981, after selling that business, they bought a fledgling florist shop in Camborne, quickly developing it to become an Interflora agency over the next 2 years. From their half acre garden with its large greenhouse and tunnel, Chris supplied some of the flowers and plants they sold.

Chris and Elizabeth returned to Canada in 1983 with his appointment as an Insect Toxicologist at the Agriculture and Agri-Food Canada - Saskatoon Research Centre. His expertise in insect physiology and insect - plant interactions was ideally suited to the team that was tasked to develop population management strategies for grasshoppers and other insect pests of cereal crops. Chris very quickly re-adapted to the challenges of scientific research and immediately took a lead role in quantifying the impacts of different diets (crop plants) on grasshopper biotic potential (nutrition, growth and development). This research led to a number of promising leads in the field of host-plant resistance in cereal crops, perennial grasses and pulse crops. Although, his research was focussed primarily on grasshoppers and cereal crops, his expertise was also sought after by wildlife (insecticide residues) and biological control researchers (predation, insect pathology). His keen interest in entomology, often with stimulating questions, resulted in many discussions that prompted new research approaches at the Centre. His publication record during his brief time at AAFC-Saskatoon was extensive, including two important reviews dealing with the resistance of cultivars of cereal crops and grasses to grasshoppers (Hinks and Olfert 1992) and nutrition and protein economy in grasshoppers and locusts (Hinks et al. 1993). In December 1993 while renovations to labs at AAFC – Saskatoon Research Centre were underway, Chris had a transfer of work to Silwood Park, the Imperial College field station. He retired to Cornwall in May 1995.

Even after returning to his beloved Cornwall, Chris maintained his scientific interests. He conducted many beetle surveys, collecting, identifying and recording beetles for the Cornish Records. He collaborated in a survey of the Red River region, near Hayle, and coauthored the report to the Cornish County Council which outlined the group's findings and recommendations. He was an active member of the Cornish Wildlife Trust, serving as a trustee on the Board and a member of its Conservation Committee.

Chris was an avid gardener, and he designed and developed beautiful gardens wherever he lived. He was also a skilled woodworker, producing fine pieces of furniture. He read widely and was knowledgeable on many subjects.

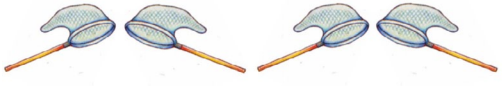
References

Hinks, C.F. 1967. Relationship between serotonin and the circadian rhythm in some nocturnal moths. Nature (Lond.), **214**: 386-387.

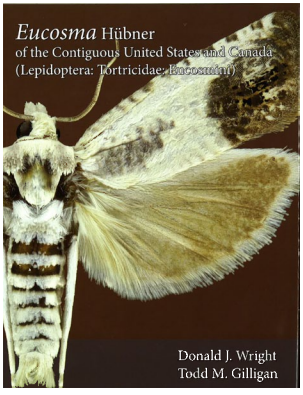
Hinks, C.F., and Olfert, O. 1992. Cultivar resistance to grasshoppers in temperate cereal crops and grasses – a review. Journal of Orthoptera Research, **1**: 1-9.

Hinks, C.F., Hupka, D., and Olfert, O. 1993. Nutrition and protein economy in grasshoppers and locusts. Comparative Biochemistry and Physiology, **104**: 133-142.

Cedric Gillott and Owen Olfert (Saskatoon), with valuable input from Elizabeth Hinks (Camelford, Cornwall, UK)



Eucosma *Hübner of the Contiguous United States and Canada (Lepidoptera: Tortricidae: Eucosmini)*. Wright, D.J. & T.M. Gilligan. 2015. Wedge Entomological Research Foundation. 256 pp., 133 species accounts, 30 colour plates, 49 monochrome plates. ISBN: 9780933003163 [hardcover]. US$90.00.



The genus *Eucosma* is a very diverse genus in North America and identification of its members has been difficult for numerous species. Many of the descriptions were in scattered references, types were misinterpreted, and species were over and under described especially in the west. Most species treated in this book were traditionally placed in the genus *Thiodia* and then later *Phaneta*, and this book uses the most recent placement following work by the same authors from the previous year.

The book opens with a concise introduction to the little that is known of the natural history of *Eucosma* with a detailed account of the taxonomic history of this group and morphological terminology used. The bulk of the book is dedicated to species accounts, with the majority conveniently divided up into species groups. Nine new species are described in this book and the descriptions are not only well done and thorough, but they fit seamlessly into the rest of the text.

Each of the 133 species accounts are concise and clearly state how to separate the species from similar ones. A full synonymy is given and in many species a concerted effort was made to determine the holotype from a series of cotypes, or neotypes were designated. In more difficult groups the discussion is lengthy but useful in conveying the challenge of delineating species boundaries.

The adult and genitalia plate numbering is consistent with the species accounts, making association easy. The adult plates are excellent where numerous examples are typically illustrated for each species and structured for easy comparison. The genitalia plates show the artistic mastery and scientific perfection that are comparable to their previous publications but on a much larger scale. One thing that is incredibly helpful but rarely seen in large treatments like this is drawings of the extent of variation in genitalia structures for most species.

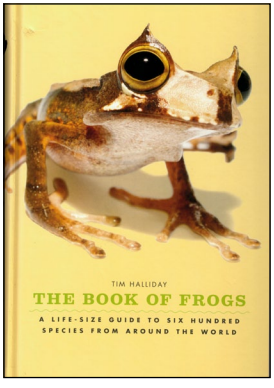
Overall Wright and Gilligan's book has made a very difficult group accessible to everyone. The amount of work and expertise that went into it are immense and they managed to produce something that is practically very useful in identifying *Eucosma*. Another strength is that they clearly identify difficult groups that still need work, but not just in vague terms but with enough information that future researchers can use it as a starting point. It is hard to pick out imperfections in this volume, but there are two things that I would have liked to see, though admittedly they are more reflective of my personal preferences. Firstly, having the adult specimens illustrated to scale would have been useful, however the measurements are given in the text. Range maps would have also been nice to supplement the geographic ranges described in the text, but as is stated in the Introduction, most species are too poorly known to do this in a meaningful way.

This book is a necessity for anyone identifying North American tortricids and I am sure I am not the only one anxiously awaiting the next volume on the equally difficult genus *Pelochrista*.

Jason J. Dombroskie
Department of Entomology
Cornell University

*Reprinted from the Newsletter of The Lepidopterists Society (**57**:204) with the kind permission of The Lepidopterists' Society and the reviewer.*

The Book of Frogs: A Life-Size Guide to Six Hundred Species from around the World. Halliday, T. 2016, University of Chicago Press, 656 pp. ISBN 10: 0-2261-8465-X, Can$59.89.



The Book of Frogs is a heavy volume, aimed at biologists and naturalists with an interest in these imperiled amphibians. This review is from the perspective of a non-herpetologist with a lifelong interest in these interesting animals. My interest in frogs dates back to a childhood in southern Ontario spent catching every animal that was too slow to elude me. It extends to the present, including a recent sabbatical leave that included working with amphibian biodiversity researchers in Central America. I anticipate that this book would have a wider audience than scientists, however. To the public, frogs are among the most charismatic of the non-mammals, receiving far more public attention and affection than their scaly, occasionally deadly reptile cousins, and are far more familiar than their fellow amphibians, the secretive salamanders. Virtually every child has caught a frog, or kept tadpoles (usually toads) and, if not, they should. This book is an outstanding choice for review in the Bulletin for these reasons, and also because I suspect many entomologists have had at least a passing interest in frogs because both are most commonly found where insects and other arthropods are common.

The book begins with a section entitled "What is a frog?" that includes the small, but important, detail that frogs and toads are all in the order Anura, and thus considered a single group. It is best to think of these terms in the same way as insect common names – one person's toad is a frog to an individual living elsewhere. The differences are biologically inconsistent and therefore meaningless. For example, while we in North America think of toads as the warty, dry-land inhabiting members of the group (almost all the toads we see in Canada are a single species, the American toad), there are many frogs in other parts of the world that match this description. There are warty frogs, and smooth-skinned toads. The important point here is that, despite the title, all anurans receive equal coverage in this volume.

Like many animals, particularly those that require fresh water, amphibian populations are in a period of steep decline. The principal cause is habitat destruction by humans, although, as is typically the case with biological phenomena, other agents (climate change, environmental contaminants, new/introduced diseases) play a varying role in the declines of some species. While this book spends a few pages introducing this issue and the potential causes, it is not the book for those that want to delve into this aspect in detail.

There is also a brief section on general biology that features some particularly interesting notes about reproductive strategies. For example, some frogs omit the tadpole stage and are "direct developers", while others spend the tadpole stage partly in their father's mouths, or on his back and male parental care, in general, is not uncommon among anurans. Perhaps it is because this aspect of frog biology that always interested me most, but I would have liked to see more time spent on this section. I realize that the intent of the book is to cover as much ground as possible, in terms of species, but I think there could have been room for more expansion of this section. It was frustratingly short.

The layout of the book is such that ca. 95% of the pages are devoted to ca. 600 species accounts, arranged by family. Many readers living in Canada might be astounded at the diversity and range of these animals; being cold-blooded in a country that features freezing temperatures stifles the Canadian species count (although the wood frog is a common species that occurs north of the Arctic Circle and survives freezing each year). Each species account features a page

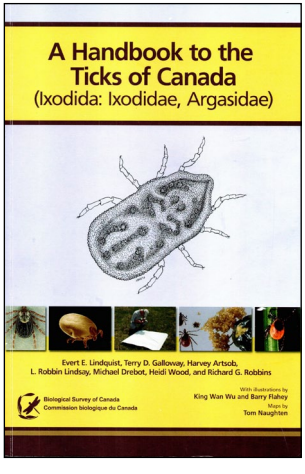
including a range map, notes on natural history, conservation status, interesting aspects of biology and calling behaviour, and similar species that may be confused with it. Most importantly, there is an "actual size" photo, accompanied by an enlarged version of the same. This is a strong positive aspect of the book. Conversely, the range maps are not useful in some cases – species with very small ranges, typically in the tropics, are represented by a tiny, green spot on a grey map. This is not different from many field guides, but on such a tiny map it can be difficult to tell where in Central America a given species is found. This makes many of the maps largely useless, and a "zoomed-in" inset would have been welcome.

One fun aspect of the book is that the common names of frogs are frequently descriptive, and occasionally humorous. Some are named after other animals: there are skunk, leopard, pig, sheep and chicken frogs in these pages. Many others derive their name from physical characteristics: dumpy frogs, stubfoot toads, and, my favourite, the nosy-be-giant tree frog.

Who should buy this book? Anyone who has, or is looking to cultivate, an interest in anuran biology and diversity. At the retail price of approximately $60 CDN, it is the most bang-for-the-buck that I could imagine. While there are thousands of species that cannot fit on its pages, this book covers all the bases in surveying this group worldwide. Travelers will find all of the common species, and many uncommon ones, listed in its pages. Lastly, the many listings of critically endangered and threatened species serve as a reminder that these flightless "canaries in the coal mine" need more attention from non-herpetologists than ever.

Christian H. Krupke
Purdue University, West Lafayette

A Handbook to the Ticks of Canada (Ixodida: Ixodidae, Argasidae). Evert E. Lindquist, Terry D. Galloway, Harvey Artsob, L. Robbin Lindsay, Michael Drebot, Heidi Wood, Richard G. Robbins ; with illustrations by King Wan Wu and Barry Flahey; maps by Tom Naughten. 2016. Biological Survey of Canada Monograph Series No. 7, 326 pp. ISBN: 978-0-9689321-8-6. Can$29.95.



How worried should you be when you return from the field with an attached tick? After all, different ticks can vector numerous nasty diseases, such as Lyme, Rocky Mountain spotted fever or any of the newly identified microbes that can only be distinguished using current DNA technologies. The long-awaited A Handbook to the Ticks of Canada (Ixodida: Ixodidae, Argasidae) will let you key out any tick that you are likely to encounter across Canada. It has the first accessible and comprehensive compilation of keys for all active stages of ticks found in Canada or even any comparable region of North America. Until now, you had to track down out-of-print copies of tick keys and spend time agonizing over characters that might or might not distinguish larvae of species that probably don't occur in your region anyway. This handbook is an unparalleled resource for identifying all the ticks of Canada and northern USA and is unique in having keys to both immature and adult stages.

Ticks of Canada begins with a brief overview of the natural history of ticks, followed by illustrations of the characters used to distinguish tick species, information on collecting and studying ticks, and a synopsis of the medical and veterinary importance of ticks in North America. Clear line drawings of external characters for all life stages make the morphology section valuable for visualizing and remembering important diagnostic characters although the text for this section would have benefitted from the use of subheadings. The section on collecting, preserving and studying ticks is very brief, with almost half devoted to scanning electron microscopy. An expanded description of field methods might have been more helpful. The substantial section on the medical and veterinary importance of ticks is an excellent resource and provides a thorough overview of the microbial and non-microbial effects associated with tick bites in Canada. The authors do not shy away from current debate on diseases like *Bartonella* or the presence of *Borrelia miyamotoi* in British Columbia, and the discussion of Lyme borreliosis is well balanced. The references are up to date, with a few as recent as 2016. However, there is no mention of the current revolution in microbiome studies.

The stated goal of Ticks of Canada is to allow accurate identification of feeding ticks. To this end, most of the book is comprised of keys and species accounts. The keys use clearly discernable morphological characters for each couplet, with two characters in most cases to allow even damaged specimens to be identified. As most entomologists are aware, receiving a specimen for identification with damaged mouthparts is common and this handbook provides a chance to identify specimens removed in a hurry by panicked people. Maps showing extralimital records (e.g., *Ixodes pacificus,* Map 12 on page 133) bring home the importance of determining travel history when identifying ticks.

Summary life histories and the disease vectoring potential of a species are easily accessed in Ticks of Canada once a specimen has been identified. Separate tick/host and host/tick indices further provide accessible compilations of patterns of host use. This should even allow veterinarians and health workers to more efficiently focus their testing and refine their diagnoses of specific disease agents. I found it interesting that Swainson's thrush (page 296) is host to four species of *Ixodes* as well as *Haemophysalis leporispalustris* and *Amblyomma maculatum,* which opens interesting questions about the risk of unexpected coinfections from a single tick bite. In contrast, the last major compilation of tick/host records for Canada, now over 60 years old (Gregson, 1956), provided no host records at all for *I. scapularis* and only listed this important tick species as 'likely to occur in Canada'. The compilations in Ticks of Canada are also an important advance for documenting and modeling ecological relationships. In this context, it would have been helpful if the authors had made the underlying specimen records available, whether as online supplementary files or data submissions to public repositories like Canadensys (http://www.canadensys.net). This would greatly facilitate future work on ticks across Canada, which is an important region of range expansion for many ticks.

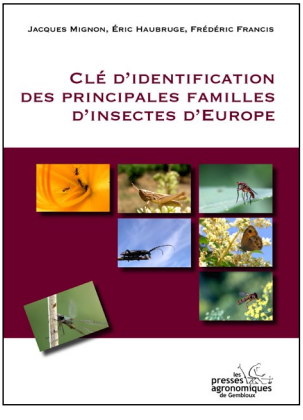
One of the best features of Ticks of Canada is its cost. For under Can$30 you can own a print copy to carry in your field vehicle (it might even be good reading after a long day of collecting, in lieu of scary campfire stories). Or you can download the pdf for free directly from the website of the Biological Survey of Canada: http://www.biologicalsurvey.ca/public/Bsc/Controller/Page/AGR-001-Ticks-Monogram.pdf.

Ticks of Canada is a contribution toward the Biological Survey of Canada's ambitious Biota of Canada project: http://biologicalsurvey.ca/pages/read/the-biota-of-canada. After the demise of the excellent handbook series on the Insects of Canada and Alaska, the BSC has stepped into the gap to provide this high-quality, authoritative and desperately needed guide to Canada's biodiversity. Except for a typo in a few early copies that identified it as No. 6 in the monograph series (rather than the soon-corrected No. 7 in subsequent printings) I found no other editorial glitches.

The bottom line is that entomologists and even health professionals across the northern half of North America, will now be able to more rapidly identify the ticks that are likely to vector disease. In combination with the excellent summary of the potential disease associations of these ticks, this should allow more rational fact-based input into discussions of major public health concern. I'm confident that A Handbook to the Ticks of Canada will, in time, be viewed as an important contribution toward bringing awareness of the complex public health issues associated with tick-borne illnesses to be brought back into the mainstream.

Janet Sperling
Department of Biological Sciences
University of Alberta

Clé d'identification des principales familles d'insectes d'Europe. Jacques Mignon, Eric Haubruge, Frédéric Francis. 2016. Les presses agronomiques de Gembloux (Université de Liège, Belgique). 87 pages + espace pour la prise de notes et les dessins. ISBN: 978-2-87016-141-8. 15€ ou Can$28.95



Les trois auteurs de cette clé d'identification sont diplômés de Gembloux Agro-Bio Tech (Université de Liège, Belgique). Jacques Mignon collabore avec Eric Haubruge et Frédéric Francis, qui sont chercheurs dans l'Unité d'Entomologie Fonctionnelle et Évolutive et également en charge de l'enseignement de l'entomologie. Ce sont aussi des passionnés qui mettent leurs connaissances et leur savoir au profit des étudiants et de la vulgarisation de l'entomologie.

Cet outil d'identification, rédigé en français, est le fruit de plusieurs décennies d'enseignement de l'entomologie et il a été bonifié au fil des ans. Il est donc avant tout destiné aux étudiants. On trouve d'ailleurs une mise en garde dans l'avant-propos, qui mentionne que cet outil n'est pas une clé de terrain ni un guide de reconnaissance qui pourrait être utilisé par les entomologistes les plus novices. Il est également mentionné que les auteurs se sont permis quelques libertés au niveau de la classification et du vocabulaire.

Cette clé est divisée en 9 sections, précédées d'un avant-propos et d'une table des matières et on trouve également à la fin de l'ouvrage quelques pages vierges utiles pour la prise de note ou la réalisation de croquis qui peuvent être réalisés au laboratoire pendant des séances d'observation ou d'identification. Chaque section commence avec une page titre sur laquelle figure une photo d'insecte en noir et blanc. Chaque section contient une dizaine de pages contenant du texte et des illustrations.

L'ouvrage débute par une première section qui est une clé d'identification des principaux ordres d'insectes d'Europe. On y retrouve entre autres des Diptères, Éphéméroptères, Hémiptères, Dermaptères, Lepidoptères et quelques sous-ordres. Pour chaque ordre ou sous ordre, il y a un renvoi vers les pages ou sections qui en traitent davantage.

On trouve ensuite une section sur les ordres dits « mineurs ». Dans cette section, on retrouve notamment les Collemboles, les Odonates, les Orthoptères, les Dyctioptères, les Psocoptères, les Trichoptères et les Siphonaptères. Contrairement au précédent chapitre, ces ordres ne sont pas

décrits de façon dichotomique, mais sous la forme d'une liste des sous-ordres et dans certains cas des super-familles et familles qui les constituent. Les auteurs donnent souvent le nom vernaculaire des différentes familles avec de courtes descriptions morphologiques mais aussi des informations sur les milieux de vie et les comportements des insectes qui constituent ces familles. Bien qu'on ne retrouve pas d'illustration dans cette section, il y a quand même plusieurs renvois vers des figures de la première section.

Les cinq sections suivantes se consacrent chacune à un ordre en particulier. On trouve donc des sections qui traitent des Hémiptères, des Lépidoptères, des Diptères, des Hyménoptères et des Coléoptères. Pour ces sections, on retrouve une clé d'identification dichotomique qui se base sur les critères morphologiques. On trouve également à quelques reprises des indications sur le mode de vie de ces insectes.

La section suivante est un glossaire qui réfère principalement aux différents critères morphologiques utilisés pour cette clé. On peut souligner que les auteurs ont indiqué, pour chaque nom, s'il s'agissait du genre masculin ou féminin, ce qui permet aux plus novices des entomologistes d'éviter des erreurs d'accord à l'écrit comme à l'oral. La plupart des définitions présentées dans cette section renvoient à des figures.

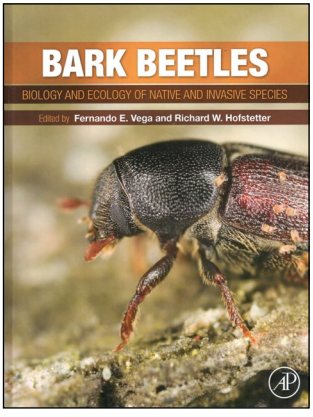
L'ouvrage se termine par une courte bibliographie, avec une vingtaine de références pour la plupart assez anciennes, mais qui peuvent être de belles références si les données qu'elles contiennent sont encore d'actualité.

Certains trouveront peut-être que cette clé manque d'illustrations. Mais les 85 illustrations en noir et blanc qui y figurent sont de très bonne qualité, même si elles proviennent d'un ouvrage publié par Delvare et Aberlenc en 1989 et consacré aux Insectes d'Afrique et d'Amérique tropicale. On retrouve de nombreux schémas d'insectes entiers ou des détails d'ailes, de tête, de pièces buccales, d'antennes ou de tarses. On retrouve peu d'annotations sur ces figures et le type de vue (dorsal, ventral, latéral droit ou gauche) n'est pas toujours indiqué, même si il est facile pour un entomologiste de le deviner. On peut parfois se demander pourquoi certaines familles ont le droit à une ou plusieurs illustrations et d'autres non. On pourra peut-être aussi regretter le choix de certaines figures qui ne représentent pas toujours l'organe décrit et l'absence de barres d'échelle qui aideraient à avoir des mesures des différents organes représentés. Certaines illustrations se trouvent parfois plusieurs pages avant ou après leur mention dans la clé.

En résumé, l'ouvrage constitue une bonne clé destinée à des étudiants qui ont déjà quelques connaissances en entomologie, et pour s'initier à l'identification des différents ordres, sous-ordres et familles d'insectes.

Pour les plus curieux, qui souhaiteraient se faire une idée de l'ouvrage ou qui souhaiteraient l'acheter, il est possible d'avoir un avant-goût de son contenu, disponible en ligne à l'adresse suivante: https://orbi.ulg.ac.be/bitstream/2268/195169/1/D%C3%A9but%20Cl%C3%A9%20Famille%20Insectes.pdf

Julien Saguez
CÉROM, Saint-Mathieu-de-Beloeil (Qc)



Bark Beetles: Biology and Ecology of Native and Invasive Species. Edited by Vega, Fernando E. and Richard W. Hofstetter. 2015. Academic Press, Amsterdam. 640 pp. ISBN print: 9780124171565; e-book: 9780124171732 US$129.95 (hardcover)

This ambitious book aims to provide broad coverage of the ecology, phylogeny and management of bark beetles at a global scale. This is a lofty goal given that, as Chapter 1 reminds us, bark beetles are a highly diverse subfamily, occurring in all regions of the world and associated with most major terrestrial plant groups, most plant parts and with a range of invertebrate and microbial symbionts. To achieve their goals, the editors have compiled contributions from 33 bark beetle experts across North America and Europe. Over 15 chapters, the book covers: natural history and ecology, morphology, taxonomy and phylogenetics, evolution and diversity, population dynamics, host tree defense and resistance, symbiotic associations, natural enemies, response models to climate change, management, and economics. It also includes chapters on bark beetle genera of economic concern including *Dendroctonus*, *Ips*, *Tomicus* and *Scolytus*, as well as a chapter focussed primarily on *Hypothenemus hampei,* the economically important coffee berry borer. This book is targeted at a broad audience including scientists, professors, forest managers, insect management practitioners, mycologists, and students.

In general, this book is very thorough and comprehensive. It provides inclusive, well-integrated and up-to-date coverage of a broad topic that has evolved rapidly in recent years. It is well organized with the chapters having a logical flow. It will be a very useful reference text for the breadth of its intended audience, as it balances coverage of the theoretical and the practical. In fact, I wish this text had been available when I was doing my PhD. Though having read numerous papers and texts on various aspects of bark beetle biology and ecology over the years, I was very pleased to learn a great deal of new information about bark beetles from this book.

Given the title of the book, I had hoped to read more about bark beetle ecology in invaded ranges. Though there is good coverage of the biology and ecology of *Tomicus piniperda* in its invaded range, there is not similar coverage of other invasive bark beetles - for example *Ips grandicollis* in Australia, or *Dendroctonus valens* in China. I think this is an unfortunate shortcoming given the importance of, and interest in, invasive species today. The lack of authors from outside North America and Europe stands out here as they could provide a valuable perspective.

In having the luxury of reading the book in its entirety, two chapters stood out that I would probably not have read if I was using this as a reference text. Surprising to me as more of an ecologist, I especially enjoyed Chapter 2 on the morphology, taxonomy and phylogenetics of bark beetles. This chapter was well written and engaging. I especially enjoyed the section on the history of bark beetle taxonomy and taxonomists, though one wonders how Karl Schedl's descendants would feel about the characterization of him being uncooperative! Chapter 2 also includes a useful, very well illustrated, overview of bark beetle identification which will be invaluable to anyone new to bark beetle identification. Chapter 3 on evolution and diversity includes a good overview of evolution and diversity within the scolytids and covers material that one might expect in such a chapter, such as the evolution of feeding guilds. Coverage of less-known topics, such as the evolution and diversity of mating systems and of social behaviour was unexpected – the authors themselves point out that much of this material is little-known outside

a small group of specialists. It was this material that I found especially interesting – in particular, the relationship between mating systems and gallery architecture. I will certainly think about this the next time I look at a bark beetle gallery. Other chapters that stood out include chapters on conifer resistance and defence (Chapter 5), and on symbiotic associations (Chapter 6) as both were very thorough, contemporary and very readable. Chapters 8 and 10, on *Dendroctonus* and *Tomicus* respectively, were especially well written and informative and should be considered go-to resources for the genera. Chapter 14 on bark beetle management in conifer forests was especially well integrated in its discussion of management in both Europe and North America.

Throughout the book, there is reiteration of the topic material which I appreciated. For example, although there was an entire chapter devoted to bark beetle management, I found the management section in the chapter on *Tomicus* to be very useful. Similarly, the chapter on population dynamics is augmented by coverage of the topic in other chapters such as Chapter 5 on conifer resistance and defenses, and Chapter 10 on *Tomicus*. The index is compiled well, so the breadth of this information is readily accessible.

This book is not meant to be read from cover to cover, as one is required to do for a book review. Consequently, difference in coverage, detail, tone, and readability between chapters is apparent. For example, the chapters on *Dendroctonus* and *Tomicus* include a great deal on ecology and biology of the species, while the chapters on *Ips* and to a lesser degree *Scolytus* tended to focus on taxonomy and phylogeny of the groups. As a result, I was left wanting to read more about *Ips* species biology and ecology. There was also an imbalance of detail, with some topics having very thorough coverage while others felt like they could use more detail. For example, Chapter 11 on the coffee berry borer includes a great deal of detail on all aspects of the coffee berry borer, while after reading Chapter 4 on population dynamics I was left wanting several topics to be illustrated with more examples.

Overall, this is a well written, comprehensive and authoritative book on bark beetle biology and ecology and is recommended reading for scholars and practitioners.

Kathleen Ryan
Forest Entomologist
Silv-Econ Ltd.
Edmonton

D.Giberson

White Admiral Butterfly, *Limenitis arthemis* (Lepidoptera: Nymphalidae) on Blooming Point Beach, Prince Edward Island

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://www.esc-sec.ca/bulletinbooks.php) 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 (Maya Evenden, mevenden@ualberta.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://www.esc-sec.ca/f-bulletinbooks.php) 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 (Maya Evenden, mevenden@ualberta.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.

Acorn, J. and I. Sheldon. 2017. Butterflies of Ontario and Eastern Canada. 320 pp. with illustrations of each species and range maps. Lone Pine Media Productions and Partners Publishing. ISBN:987-1-77213-0323-4 [softcover]

Miller, K.B. & J. Bergsten. 2016. Diving Beetles of the World. 336 pages, 300 color photos, illus., and drawings; Johns Hopkins Univ. Press. ISBN: 9781421420547 [hardcover]

Pryke, L.M. 2016. Scorpion. 221 pgs, colour plates, photos. The University of Chicago Press. ISBN: 9781780235929 [soft cover]

Dodd, A. 2016. Beetle. 192 pgs, colour plates, photos. The University of Chicago Press. ISBN: 9781780234885 [soft cover]

Gandy, M. 2016. Moth. 238 pgs, colour plates, photos. The University of Chicago Press. ISBN: 9781780235851 [soft cover]

Appel, E. & S.N. Gorb. 2015. Comparative Functional Morphology of Vein Joints in Odonata. Zoologica Vol. 159; 104 pages, 53 figures, 1 table; E. Schweizerbart'sche Verlagsbuchhandlung. ISBN-978-3-510-55046-3. [paperback]

Cárcamo, H.A, & D.J. Giberson [Eds.]. 2014. Arthropods of Canadian Grasslands. Vol. 3: Biodiversity and Systematics, Part 1. 413 pp.; photos, maps, checklists. Biological Survey of Canada. ISBN 9780968932162 [soft cover]

Giberson, D.J., & H.A. Cárcamo [Eds.]. 2014. Arthropods of Canadian Grasslands. Vol. 4: Biodiversity and Systematics, Part 2. 479 pp.; photos, maps, checklists. Biological Survey of Canada. ISBN 9780968932179 [soft cover]

Nominations for ESC Board of Directors / Nominations pour le Conseil d'administration de la SEC

The following have been nominated and agreed to stand for election in 2017 for the indicated positions. Members will receive more details on this year's process by email or in the mail. In accordance with our new By-laws under the Canada Not-for-profit Corporations Act, a plebiscite/vote first will be held to 'select candidates' for a slate of Directors. The slate will then be presented for formal election at the Annual Members' Meeting in Winnipeg in October.

The current ballot will select candidates for a Director-at-Large and a Societal Director (Second Vice-President). The plebiscite will be conducted electronically but paper ballots will still be mailed to members who do not have email addresses. Electronic votes must be submitted or ballots mailed to the Elections Committee by **15 July 2017**. PLEASE REMEMBER TO VOTE!

Les personnes suivantes ont été nominées et ont accepté de se présenter pour les élections de 2017 pour les postes indiqués. Les membres recevront plus de détails sur le processus de cette année par courriel ou par la poste. Conformément à notre nouveau règlement intérieur en vertu de la loi canadienne sur les organisations à but non lucratif, un plébiscite/vote sera d'abord tenu afin de « sélectionner les candidats » pour une liste de directeurs. La liste sera ensuite présentée pour une élection formelle à la réunion annuelle des membres à Winnipeg en octubre.

Ce vote sélectionnera les candidats pour les postes de conseillers et de directeur sociétal (second vice-président). Le plébiscite sera conduit électroniquement, mais des bulletins de vote papier seront envoyés aux membres ne possédant pas de courriel. Les votes électroniques doivent être soumis ou les bulletins de vote envoyés au comité des élections au plus tard le **15 juillet 2017**. N'OUBLIEZ PAS DE VOTER!

Candidates for Societal Director / Second Vice-President
Candidat(e)s pour le poste de directeur(trice) sociétal(e)/second(e) vice-président(e)

Kevin Floate
(AAFC, Lethbridge)
(left / gauche)

and / et

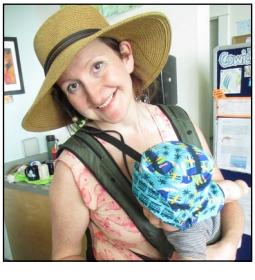
Sherah VanLaerhoven
(University of Windsor)
(right / droite).

Candidates for Director-at-Large / Candidates pour le poste de conseillère

Deepa Pureswaran
(Laurentian Forest Centre,
CFS, Quebec City)
(left / gauche),

and / et

Chandra Moffatt
(AAFC, Fredericton)
(right / droite).



Call for interest: position of Editor-in-Chief of *The Canadian Entomologist*

The Entomological Society of Canada (ESC) is seeking an Editor-in-Chief for *The Canadian Entomologist* (*TCE*) to start September 2017.

The Editor-in-Chief of *TCE* is one of the Officers of the ESC and is responsible for the journal's scientific and editorial integrity. *TCE* is an international journal that publishes on all aspects of entomology. Published by Cambridge University Press, *TCE* received about 200 new submissions from 30 countries in 2015. One of the world's oldest entomological journals, *TCE* celebrates its 150th anniversary in 2018.

The Executive Council of the ESC is keen to hear from members of the Society interested in this exciting and challenging position. For further questions regarding this position or to suggest potential candidates, please contact ESC President Neil Holliday;
Neil_Holliday@UManitoba.CA.

Avis à manifestation d'intérêt : le poste de rédacteur scientifique pour *The Canadian Entomologist*

La Société d'entomologie du Canada (SEC) recherche un rédacteur scientifique pour *The Canadian Entomologist* (*TCE*) à compter de septembre 2017.

Le rédacteur scientifique de *TCE* est un des administrateurs de la SEC et est responsable de l'intégrité scientifique et éditoriale de la revue. *TCE* est une revue internationale qui publie sur tous les aspects de l'entomologie. Publiée par les presses de l'Université Cambridge, *TCE* a reçu autour de 200 nouvelles soumissions en provenance de 30 pays en 2015. *TCE*, qui est une des plus vieilles revues entomologiques du monde, célèbrera son 150e anniversaire en 2018.

Le conseil exécutif de la SEC aimerait être contacté par les membres de la Société intéressés par ce poste excitant et plein de défis. Pour des questions concernant le poste ou pour suggérer des candidats potentiels, veuillez contacter le président de la SEC, Neil Holliday;
Neil_Holliday@UManitoba.CA.

M. Larrivée

Everes amyntula (Lepidoptera, Lycaenidae)

Thirteenth Annual Photo Contest

The Thirteenth Annual Photo Contest to select images for the 2018 covers of *The Canadian Entomologist* and the *Bulletin of the Entomological Society of Canada* is underway. The cover images are intended to represent the breadth of entomology covered by the Society's publications. Insects and non-insects in forestry, urban or agriculture; landscapes, field, laboratory or close-ups; or activities associated with physiology, behaviour, taxonomy or IPM are all desirable. A couple of 'Featured Insects' (for the spine and under the title) are also needed. If selected, your photo will grace the cover of both publications for the entire year. In addition, winning photos and a selection of all submitted photos will be shown on the ESC website.

Contest rules:

Photos of insects and other arthropods in all stages, activities, and habitats are accepted. To represent the scope of entomological research, we also encourage photos of field plots, laboratory experiments, insect impacts, research activities, sampling equipment, etc. Photos should, however, have a clear entomological focus.

Digital images must be submitted in unbordered, high-quality JPG format, with the long side (width or height) a minimum of 1500 pixels.

Entrants may submit up to five photographs. A caption must be provided with each photo submitted; photos without captions will not be accepted. Captions should include the locality, subject identification as closely as is known, description of activity if the main subject is other than an insect, and any interesting or relevant information. Captions should be a maximum of 40 words.

The entrant must be a member in good standing of the Entomological Society of Canada. Photos must be taken by the entrant, and the entrant must own the copyright.

The copyright of the photo remains with the entrant, but royalty-free use must be granted to the ESC for inclusion on the cover of one volume (6 issues) of *The Canadian Entomologist*, one volume (4 issues) of the *Bulletin*, and on the ESC website.

The judging committee will be chosen by the Chair of the Publications Committee of the ESC and will include a member of the Web Content Committee.

The Photo Contest winners will be announced on the ESC website, and may be announced at the Annual Meeting of the ESC or in the *Bulletin*. There is no cash award for the winners, but photographers will be acknowledged in each issue in which the photos are printed.

Submission deadline is **15 August 2017**. Entries should be submitted as an attachment to an email message; the subject line should start with "ESC Photo Contest Submission".
Send the email message to: photocontest@esc-sec.ca.

Treizième concours annuel de photographie

Le treizième concours annuel de photographie visant à sélectionner des images pour les couvertures de *The Canadian Entomologist* et du *Bulletin de la Société d'entomologie du Canada* pour 2018 est en cours. Les images sur la couverture doivent représenter l'étendue entomologique couverte par les publications de la Société. Des photos représentant des insectes ou autres arthropodes forestiers, urbains ou agricoles, des paysages, du travail de terrain ou de laboratoire, des gros plans, ainsi que montrant des activités associées à la physiologie, au comportement, à la taxonomie ou à la lutte intégrée seraient souhaitées. Deux « insectes vedettes » (pour le dos et sous le titre) sont également recherchés. Si elle est sélectionnée, votre photo ornera la couverture des deux publications pour l'année entière. De plus, vos photos gagnantes et une sélection de photos soumises seront montrées sur le site Internet de la SEC.

Règlements du concours :

Les photos d'insectes et autres arthropodes à n'importe quel stade, effectuant n'importe quelle activité et dans n'importe quel habitat sont acceptées. Afin de représenter les sujets de la recherche entomologique, nous encourageons également les photos de parcelles de terrain, expériences de laboratoire, impacts des insectes, activités de recherche, équipement d'échantillonnage, etc. Les photos doivent, cependant, avoir un intérêt entomologique clair.

Les images numériques doivent être soumises sans bordure, en format JPG de haute qualité, avec le plus grand côté (largeur ou hauteur) d'un minimum de 1500 pixels.

Chaque participant peut soumettre jusqu'à cinq photographies. Une légende doit être fournie pour chaque photo soumise : les photos sans légendes ne seront pas acceptées. La légende doit inclure la localisation, l'identification du sujet le plus précisément possible, la description de l'activité si le sujet n'est pas un insecte, et toute information intéressante ou pertinente. Les légendes doivent avoir une longueur maximale de 40 mots.

Les participants doivent être membres en bonne et due forme de la Société d'entomologie du Canada. Les photos doivent avoir été prises par le participant, et le participant doit en posséder les droits d'auteur.

Le participant conserve les droits d'auteur de la photo, mais l'utilisation libre de droits doit être accordée à la SEC afin de l'inclure sur la couverture d'un volume (6 numéros) de *The Canadian Entomologist*, un volume (4 numéros) du *Bulletin*, et sur le site Internet de la SEC.

Le comité d'évaluation sera choisi par le président du comité des publications de la SEC et inclura un membre du comité du contenu du site Internet.

Les gagnants du concours de photographie seront annoncés sur le site Internet de la SEC et pourront être annoncés à la réunion annuelle de la SEC ou dans le *Bulletin*. Il n'y a pas de prix en argent pour les gagnants, mais les photographes seront remerciés dans chaque numéro où les photos seront imprimées.

La date limite de soumission est le **15 août 2017**. Les soumissions doivent être faites en pièces jointes d'un courrier électronique. L'objet du message doit débuter par « Soumission pour le concours de photographie de la SEC ».
Envoyez vos courriels à : photocontest@esc-sec.ca.

Don't read this article

I will admit that the headline was thoroughly and completely "click bait". That's because I was worried that **"The new ESC Science Policy Committee and its mandate"** would have you move along to the next article. And I hope that giving you the goods now on what this article is about doesn't cause that right… now.

For those of you who are still with me, and I hope that is a majority of our members, I am aware that policy is not generally considered an exciting topic. But in this era of climate change, environmental degradation, increasing population pressure on our agricultural and silvicultural output, emergent and spreading vector-borne diseases, research funding challenges, and rapidly shifting politics in Canada and many of our largest trading partners, we as entomologists cannot merely sit back and let policy happen. We need to engage with policy makers to encourage careful decision making with the long view in mind.

Our diverse Society membership has an equally diverse set of skills and perspectives to offer to Canadians and the rest of the world. But engagement can only happen if we are willing to put fingers on the pulse of various issues, and to collaboratively marshal responses to issues as they begin to emerge. In other words, we can only be effective if we are able to anticipate in time and react with collective care and wisdom.

Over the past many years, the ESC has maintained a Science Policy and Education Committee. That committee has been effective in many areas including over the past several years:

- expressing concern to the federal government about travel restrictions on federal scientists wishing to attend ESC meetings,
- encouraging the continued support of the Experimental Lakes Area,
- responding to NSERC consultations, and
- drafting the ESC Policy Statement on Biodiversity Access and Benefit Sharing which was later adopted by our Society.

However, because the combination of both public education and public policy was a substantial and growing mandate, the ESC Executive Council Committee decided in 2015 to split the committee into two, each part taking care of one of the two former aspects.

In October 2016 I was asked to chair and help to formulate the new ESC Science Policy Committee. Your committee now consists of (in alphabetical order):

- Patrice Bouchard (ESC First VP, Agriculture and Agri-Food Canada)
- Crystal Ernst (appointed member, postdoctoral fellow at Simon Fraser University)
- Neil Holliday, (ESC President, ex officio committee member, University of Manitoba)
- Dezene Huber (appointed member as academic representative, Chair 2016/2017, University of Northern British Columbia)
- Fiona Hunter (ESC Second VP, Brock University)
- Rachel Rix (appointed member and student and early professional representative, Dalhousie University)
- Amanda Roe (appointed member as government representative, Natural Resources Canada – Canadian Forest Service)

Each executive member's term is specified by their ESC executive term. Each appointed member is a member for up to 3 years. The Chair position is appointed on a yearly basis. The terms of reference specify that the committee should contain members *"who (represent) the Student (and Early Professional) Affairs Committee, and preferably one professional entomologist employed in government service and one employed in academia."*

We are officially tasked *"(t)o monitor government, industry and NGO science policies, to advise the Society when the science of entomology and our Members are affected, and to undertake tasks*

assigned by the Board that are designed to interpret, guide, or shift science policy."

We are now working on putting together an agenda, and have started to work on a few items. For instance, you may recall an eBlast requesting participation in Canada's Fundamental Science Review that was initiated by Hon. Kirsty Duncan, Minister of Science. We hope that some of you took the opportunity to send your thoughts to the federal government.

As we develop an agenda, we would like to consult with you, the ESC membership. Please tell us:

- *What policy-related issues do you see emerging in your area of study, your realm of employment, or in the place that you live?*
- *How might the ESC Science Policy Committee integrate better with your concerns and those of the rest of the membership?*
- *How can our Society be more consultative and responsive to the membership and to issues as they arise?*
- *Who are the people and organizations with which ESC should be working closely on science policy issues?*
- *How can you be a part of science policy development, particularly as it relates to entomological practice and service in Canada and abroad?*

Please email me at huber@unbc.ca with your thoughts, questions, and ideas. We know that many of you are already involved in this type of work, and we hope that we can act as synergists to your efforts and that you can help to further energize ours.

Dezene Huber
Chair, ESC Science Policy Committee

Ne lisez pas cet article

Je dois admettre que le titre a été prévu sous tous ses angles pour être un « piège à clics ». J'avais peur que **« Le nouveau comité de la politique scientifique de la SEC et son mandat »** vous incite à passer à l'article suivant. Et j'espère que de vous donner le sujet réel de cet article maintenant ne causera pas ça… maintenant.

Pour ceux d'entre vous qui sont encore avec moi, et j'espère qu'il s'agit de la majorité de nos membres, je suis conscient que la politique n'est généralement pas considérée comme un sujet excitant. Mais dans cette ère de changement climatique, de dégradation environnementale, d'augmentation de la pression de la population sur notre agriculture et sur la sylviculture, d'émergence et de dispersion de maladies à transmission vectorielle, de défis dans le financement de la recherche et de politiques qui changent rapidement au Canada et dans plusieurs de nos plus grand partenaires d'échanges, nous, comme entomologistes, ne pouvons pas simplement nous asseoir et laisser la politique se passer. Nous devons nous impliquer auprès des décideurs afin d'encourager des prises de décisions prudentes et garder le long terme en vue.

Nos membres diversifiés de la Société ont une gamme d'habiletés et de perspectives toute aussi diversifiée à offrir aux Canadiens et au reste du monde. Mais l'engagement ne peut se produire que si vous être prêts à prendre le pouls des différentes questions, et de guider, de façon collaborative, nos réponses à ces questions alors qu'elles commencent à émerger. En d'autres termes, nous ne pouvons être efficaces que si nous sommes capables d'anticiper à temps et de réagir avec une attention et une sagesse collectives.

Durant les dernières années, la SEC a maintenu un comité de la politique scientifique et de l'éducation. Ce comité a été efficace dans plusieurs domaines, incluant dans les dernières années :

- exprimer, auprès du gouvernement fédéral, l'inquiétude concernant les restrictions de voyage des scientifiques fédéraux souhaitant se rendre aux réunions de la SEC,
- encourager le soutien continu à la région des lacs expérimentaux,
- répondre aux consultations du CRSNG, et
- ébaucher un énoncé de principe de la SEC sur l'accès et le partage des avantages de la biodiversité qui a, par la suite, été adopté par notre Société.

Cependant, puisque la combinaison de l'éducation au public et de la politique scientifique était un mandat substantiel et en croissance, le conseil exécutif de la SEC a décidé en 2015 de séparer le comité en deux, chaque partie s'occupant de l'un des deux aspects.

En octobre 2016, on m'a demandé de présider le nouveau comité de la science politique de la SEC. Votre comité est maintenant composé de (en ordre alphabétique) :

- Patrice Bouchard (premier VP de la SEC, Agriculture et agroalimentaire Canada)
- Crystal Ernst (membre nommée, chercheure postdoctorale à l'Université Simon Fraser)
- Neil Holliday (Président de la SEC, membre ex officio du comité, Université du Manitoba)
- Dezene Huber (membre nommé comme représentant académique, président 2016/2017, Université du Nord de la Colombie-Britannique)
- Fiona Hunter (seconde VP de la SEC, Université Brock)
- Rachel Rix (membre nommée et représentante des étudiants et jeunes professionnels, Université Dalhousie)
- Amanda Roe (membre nommée comme représentante du gouvernement, Ressources naturelles Canada – Service canadien des forêts)

Le mandat de chaque membre du conseil exécutif est spécifié par leur mandat sur le conseil exécutif de la SEC. Chaque membre nommé est membre pour une durée allant jusqu'à 3 ans. Le poste de président du comité est nommé sur une base annuelle. Les lignes directrices spécifient que le comité devrait contenir des membres « *qui représentent le comité des affaires étudiantes (et des jeunes professionnels), et préférentiellement un entomologiste professionnel employé par le gouvernement et un par le milieu académique* ».

Nous sommes officiellement mandatés pour « *surveiller les politiques scientifiques du gouvernement, de l'industrie et des ONG, de conseiller la Société quand la science de l'entomologie et nos membres sont affectés, et d'entreprendre des tâches assignées par le CA afin d'interpréter, guider ou modifier la politique scientifique* ».

Nous travaillons actuellement afin d'assembler des priorités, et nous avons commencé à travailler sur quelques points. Par exemple, vous vous rappelez peut-être un courriel qui demandait la participation à l'examen du soutien fédéral aux sciences qui a été initié par l'Hon. Kirsty Duncan, Ministre des sciences. Nous espérons que certains d'entre vous auront saisi l'opportunité d'envoyer vos idées au gouvernement fédéral.

Alors que nous développons nos priorités, nous aimerions vous consultez, les membres de la SEC. Merci de nous dire :

- *Quelles questions liées aux politiques considérez-vous comme émergentes dans votre domaine d'étude, votre domaine d'emploi ou l'endroit où vous vivez?*
- *Comment le comité de la politique scientifique de la SEC peut-il mieux s'intégrer à vos inquiétudes et ceux des autres membres?*
- *Comment notre Société peut-elle être plus consultative et réactive aux membres et aux questions alors qu'elles sont soulevées?*

- *Quelles sont les personnes et les organisations avec lesquelles la SEC devraient travailler de façon rapprochée sur les questions de politique scientifique?*
- *Comment pouvez-vous faire partie du développement de la politique scientifique, particulièrement en lien avec la pratique et le service entomologique au Canada et à l'étranger?*

Écrivez-moi à huber@unbc.ca pour me transmettre vos opinions, questions, idées. Nous savons que plusieurs d'entre vous sont déjà impliqués dans ce type de travail, et nous espérons que nous pourrons agir en synergie avec vos efforts et que vous pourrez nous aider à stimuler les nôtres.

Dezene Huber
Président, comité de la politique scientifique de la SEC

List of Contents: CPS / Table des matières : SCP

Content of newsletters published by the Canadian Phytopathological Society
Contenu des bulletins publiés par la Société canadienne de phytopathologie

THE CANADIAN PHYTOPATHOLOGICAL SOCIETY

LA SOCIÉTÉ CANADIENNE DE PHYTOPATHOLOGIE

CPS.SCP News

Vol 60 (4) December 2016

http://phytopath.ca/wp-content/uploads/2017/01/CPS-SCP-News-60-4-December-2016.pdf

Table of Contents:

Meeting announcements / Réunions futures

Third FAO-IAEA International Conference on Area-wide Management of Insect Pests: Integrating the Sterile Insect and Related Nuclear and Other Techniques
Vienna, Austria, 22-26 May 2017
http://www.entsoc.org/event-calendar/third-fao%E2%80%93iaea-international-conference-area-wide-management-insect-pests-integrating

The 5th International Forum for Surveillance and Control of Mosquitoes and Mosquito-borne Diseases
Nanjing, China, 22-26 May 2017
www.mosquitoforum.net

IOBC-WPRS Working Group: Integrated Control in Protected Crops, Temperate Climate
Niagara Falls, Canada, 4-8 June 2017
http://iobccanada2017.ca/

The Third Hemipteran-Plant Interactions Symposium
Madrid, Spain, 4-8 June 2017
http://www.hpis2017.csic.es/

The International Congress of Odonatology (ICO 2017): Dragonfly vision and flight
Cambridge, United Kingdom, 16-20 July 2017
http://www.ico2017.org/

Society for Invertebrate Pathology, 50th Anniversary Meeting
San Diego, California, 13-17 August 2017
http://sipweb.org/meetings.html

26th International Conference of the World Association for the Advancement of Veterinary Parasitology, WAAVP 2017
Kuala Lumpur, Malaysia 4-8 September 2017
http://www.waavp2017kl.org/index.php

Entomological Society of Canada Joint Annual Meeting 2017
Winnipeg, 22-25 October 2017
The meeting will be held in conjunction with the Entomological Society of Manitoba
http://www.esc-sec.ca/annmeet.php

Entomological Society of America Annual Meeting 2017: Ignite. Inspire. Innovate.
Denver, Colorado, 5-8 November 2017
http://www.entsoc.org/events/annual-meeting

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.

Published by the
Entomological Society of Canada
386 Broadway, Suite 503
Winnipeg, Manitoba R3C 3R6
E-mail: info@esc-sec.ca
www.esc-sec.ca/

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.

Send correspondence to:
Cedric Gillott
Bulletin Editor
Department of Biology
University of Saskatchewan
112 Science Place, SK S7N 5E2
Telephone: (306) 966-4401
Fax: (306) 966-4461
E-mail: cedric.gillott@usask.ca

ISSN: 0071-0741

Submission deadline for the next issue: 30 April 2017

Bulletin de la Société d'entomologie du Canada

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.

Publié par la
Société d'entomologie du Canada
386 Broadway, Suite 503
Winnipeg, Manitoba R3C 3R6
E-mail: info@esc-sec.ca
www.esc-sec.ca/

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.

Envoyer vos soumissions à:
Cedric Gillott
Rédacteur du *Bulletin*
Department of Biology
University of Saskatchewan
112 Science Place, SK S7N 5E2
Telephone: (306) 966-4401
Fax: (306) 966-4461
courriel : cedric.gillott@usask.ca

ISSN: 0071-0741

Date de tombée pour le prochain numéro: 30 avril 2017

Officers of affiliated Societies, 2016-2017
Dirigeants des Sociétés associées, 2016-2017

Entomological Society of British Columbia

President	Brian van Hezewijk
1st Vice President:	Jenny Cory
2nd Vice President:	Lisa Poirier
Past President	Bob Lalonde
Treasurer	Ward Strong
Editor (Journal)	Dezene Huber
Editor (Boreus)	Gabriella Zilahi-Balogh
Webmaster	Brian Muselle
Secretary	Tracy Hueppelsheuser

B.C. Ministry of Agriculture
1767 Angus Campbell Road, A
Abbotsford, BC, V3G 2M3
Tel: (604) 556-3031
E-mail: Tracy.Hueppelsheuser@gov.bc.ca
http://entsocbc.ca

Entomological Society of Alberta

President	Shelley Hoover
Vice-President	Ralph Cartar
Past President	John Swann
Treasurer	Caroline Whitehouse
Editor (Proceedings)	Tonya Mousseau
Webmaster	Alec McClay
Secretary	Ken Fry

Olds College
4500 - 50 Street, Olds, AB T4H 1R6
Tel: (403) 556-8261
E-mail: esalberta@gmail.com
http://www.entsocalberta.ca

Entomological Society of Saskatchewan

President	Tyler Wist
Vice-President	Cory Sheffield
Past President	Dave Halstead
Treasurer	Dwayne Hegedus
Newsletter Editor	Nicole Pillipow
Secretary	Iain Phillips

Saskatchewan Watershed Authority
101-108 Research Drive, Saskatoon, SK, S7N 3R3
Tel: (306) 933-7474
Email: iain.phillips@swa.ca
http://www.entsocsask.ca

Entomological Society of Manitoba

President	John Gavloski
President-Elect	Mahmood Iranpour
Past President	Paul Fields
Treasurer	Kathy Cano
Newsletter Editors	Marjorie Smith and Jordan Bannerman
Editor (Proceedings)	Terry Galloway
Webmaster	Rob Currie
Secretary	Sarah Semmler

Living Prairie Museum
2795 Ness Ave
Winnipeg MB R3J 3S4
E-mail: SSemmler@winnipeg.ca
http://home.cc.umanitoba.ca/esm/

Entomological Society of Ontario

President	Gard Otis
President-Elect	Antonia Guidotti
Past President	Joel Gibson
Treasurer	Shiyou Li
Editor (Journal)	Chris MacQuarrie
Webmaster	Trevor Burt
Secretary	Michelle Locke

Vista Centre
1830 Bank St. P.O. Box 83025
Ottawa, ON K1V 1A3
E-mail: entsocont.membership@gmail.com
http://www.entsocont.ca

Société d'entomologie du Québec

Présidente	Geneviève Labrie
Vice-présidente	Valérie Fournier
Président sortante	Julien Saguez
Trésorier	François Fournier
Rédactrice (Antennae)	Louise Voynaud
Webmestre	Thierry Poiré
Secrétaire	Danielle Thibodeau

Centre de recherche et de développement en horticulture
430, boul. Gouin
Saint-Jean-sur-Richelieu (Québec) J3B 3E6
Tél : (579)224-3063
Email : secretariat@seq.qc.ca
thibodeaudanielle@hotmail.com

Acadian Entomological Society

President	Drew Carlton
Vice-President	Kirk Hillier
Past President	Chris Cutler
Journal Editor	Don Ostaff
Webmaster	Rick West
Secretary/Treasurer	Andrew Morrison

Atlantic Forestry Centre
P.O. Box 4000, 1350 Regent Street South
Fredericton, NB, E3B 5P7
Tel: (506) 260-6176
E-mail: treasurer@acadianes.ca
http://www.acadianes.ca

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

Your opinions, please!

Under the Society business pages you may (ought to!) have read Dezene Huber's 'Don't read this article'! This is a short account of the terms of mandate, membership, and hopes of the recently formed Science Policy Committee, a derivative of the previous, rather overstretched, Science Policy and Education Committee.

The new committee will be especially responsible for monitoring policies developed by governments, industry and NGOs that affect our science, and to advise the Society's membership on these changes and their potential impact.

In order to be most effective, the Committee requires your input. It needs to know what you consider to be the most important policy issues affecting you as entomologists, your science, and your employment; who should the Society be working with on entomological science policy; and how the Society, and you personally, can become more proactive in the development of this policy. Please think about how best the new committee's goals can be achieved and send your views to Dezene (or any member of the committee) for consideration.

Votre opinion SVP!

Dans la section sur les affaires de la Société, vous avez (devez!) lu l'article de Dezene Huber « Ne lisez pas cet article »! Il s'agit d'un court rapport sur la durée des mandats, les membres, et les espoirs du comité de la politique scientifique récemment formé, un dérivé de l'ancien comité, plutôt débordé, de la politique scientifique et de l'éducation.

Le nouveau comité sera spécifiquement responsable de suivre les politiques développées par les gouvernements, l'industrie et les ONG qui affectent notre science, et d'aviser les membres de la Société de ces changements et de leurs impacts potentiels.

Afin d'être plus efficace, le comité a besoin de votre apport. Il a besoin de savoir ce que vous considérez comme les aspects politiques les plus importants qui vous affectent, vous, comme entomologistes, qui affectent votre science et votre emploi; avec qui la Société devrait travailler sur la politique scientifique entomologique; et comment la Société, et vous personnellement, peut devenir plus proactive dans le développement de cette politique. Merci de penser aux meilleures façons dont les objectifs du nouveau comité peuvent être atteints et d'envoyer vos opinions à Dezene (ou n'importe quel membre du comité) pour considération.

Entomological Society of Canada, 2016-2017
Société d'entomologie du Canada, 2016-2017

Executive Council / Conseil exécutif

President / Président
Neil Holliday
Department of Entomology
University of Manitoba
Winnipeg, MB, R3T 2N2
Tel: (204) 474-8365 Fax: (204) 474-7628
E-mail: Neil_Holliday@UManitoba.CA

First Vice-President / Premier vice-président
Patrice Bouchard
Canadian National Collection of Insects, Arachnids and Nematodes
Agriculture and Agri-Food Canada
Ottawa, ON, K1A 0C6
Tel: (613) 759-7510, Fax: (613) 759-1701
E-mail: patrice.bouchard@agr.gc.ca

Second Vice-President / Second vice-présidente
Fiona F. Hunter
Department of Biological Sciences
Brock University
1812 Sir Isaac Brock Way
St. Catharines, ON L2S 3A1
Tel: (Office) (905) 688-5550 ext. 3394,
(Lab) (905) 688-5550 ext. 3408
E-mail: fhunter@brocku.ca

Past President / Président sortant
Terry Wheeler
Department of Natural Resource Sciences
McGill University
Ste-Anne-de-Bellevue, QC, H9X 3V9
Tel: (514) 398-7937
Fax: (514) 398-7990
E-mail: terry.wheeler@mcgill.ca

Directors-at-Large / Conseillers
Chris Cutler (2017)
Véronique Martel (2018)
Laura Timms (2019)

Regional Directors / Directeurs régionaux
Bill Riel (ESBC), Haley Catton (ESAB), Jeff Boone (ESS), Rob Currie (ESM), Sophie Cardinal (ESO), Étienne Normandin (SEQ), Suzanne Blatt (AES)

Student and Early Professional Representative / Représentant des étudiants et des jeunes professionnels
Miles Zhang, University of Central Florida
E-mail: yuanmeng.zhang@gmail.com

Officers / Dirigeants

Treasurer / Trésorier
Christopher P. Dufault
461 Tweedsmuir Ave.
Ottawa, Ontario, K1Z 5P1
Tel: (613) 261-1314
E-mail: christopher.p.dufault(at)gmail.com

Secretary / Secrétaire
Aynsley Thielman
Natural Resource and Environmental Studies Institute (NRESi)
University of Northern British Columbia
3333 University Way
Prince George, BC Canada V2N 4Z9
Fax: (250) 960-6533
E-mail: aynsley.thielman@unbc.ca

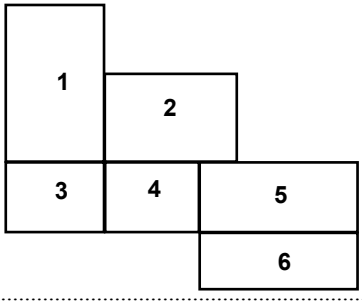
Bulletin Editor / Rédacteur du *Bulletin*
Cedric Gillott
Dept. of Biology, University of Saskatchewan
112 Science Place, Saskatoon, SK S7N 5E2
Tel: (306) 966-4401 Fax: (306) 966-4461
E-mail: cedric.gillott@usask.ca

Asst. *Bulletin* Editor / Rédactrice adj. du *Bulletin*
Donna Giberson
Dept. of Biology, U. Prince Edward Island
Charlottetown, PE, C1A 4P3
E-mail: giberson@upei.ca

Webmaster / Webmestre
Jordan Bannerman
University of Manitoba
email: jordan.bannerman@umanitoba.ca

The Canadian Entomologist Editor-in-Chief / Rédacteur en chef
Kevin Floate
Lethbridge Research and Development Centre
Agriculture and Agri-Food Canada
Lethbridge, AB T1J 4B1
Tel: (403) 317-2242
E-mail: kevin.floate@agr.gc.ca

Head Office / Siège social
Entomological Society of Canada
386 Broadway, Suite 503
Winnipeg, Manitoba, R3C 3R6 Canada
Tel: 1-888.821.8387; +1-204.282.9823
Fax: +1-204.947.9767
E-mail: info@esc-sec.ca www.esc-sec.ca



Front cover/Plate supérieur:

1 Mayflies: *Hexagenia* (Ephemeroptera: Ephemeridae) in tandem from Spanish [north shore of Georgian Bay, Ontario, Canada]
Mayflies: Hexagenia (Ephemeroptera: Ephemeridae) en tandem à Spanish [rive nord de la baie Georgienne, Ontario, Canada]
[Photo: Rosemarie De Clerck-Floate]

2 Specialist Subcommittee of the Committee on the Status of Endangered Wildlife in Canada doing an insect survey in a bog [Corner Brook, Newfoundland, Canada]
Les membres du sous-comité de spécialistes des arthropodes sur le comité sur la situation des espèces en péril du Canada faisant un inventaire d'insectes dans une tourbière [Corner Brook, Terre-Neuve, Canada]
[Photo: Greg Pohl]

3 Face to face with the death's-head hawkmoth, *Acherontia atropos* (Lepidoptera: Sphingidae) [Delémont, Switzerland]
Face à face avec le sphynx tête de mort, *Acherontia atropos* (Lepidoptera: Sphingidae) [Delémont, Suisse]
[Photo: Tim Haye]

4 A male *Chionea alexandriana* (Diptera: Limoniidae), a wingless fly, on snow in the sub-alpine forest [Mount Seymour, British Columbia, Canada]
Un mâle *Chionea alexandriana* (Diptera: Limoniidae), une mouche aptère, sur la neige dans la forêt subalpine [le mont Seymour, Colombie-Britannique, Canada]
[Photo: Chris Ratzlaf]

5 A milkweed bug, *Oncopeltus fasciatus* (Hemiptera: Lygaeidae), moulting on milkweed Centreville, Ontario, Canada]
Une punaise de l'asclépiade, *Oncopeltus fasciatus* (Hemiptera: Lygaeidae), muant sur ne asclépiade [Centreville, Ontario, Canada]
[Photo: Andrea Brauner]

6 Wolf spider (Araneae: Lycosidae) carrying her young on her abdomen collected from the field [Agassiz, British Columbia, Canada]
Une araignée lycosidée (Araneae: Lycosidae) portant ses petits sur son abdomen, attrapée dans un champ [Agassiz, Colombie-Britannique, Canada]
[Photo: Jesse MacDonald]

Back cover/Plate inférieur:

Male orchid bee, *Euglossa dilemma* (Hymenoptera: Apidae) [Everglades City, Florida, United States of America]
Un mâle de l'abeille *Euglossa dilemma* (Hymenoptera: Apidae) [Everglades City, Florida, États-Unis d'Amérique]
[Photo: Matthias Buck]

www.esc-sec.ca

Entomological Society of Canada
Société d'entomologie du Canada
386 Broadway
Suite 503
Winnipeg, Manitoba
R3C 3R6
E-mail: info@esc-sec.ca

Date of issue: March 2017 /
mars 2017

ISSN: 0071-0741