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Images

Sur le dos: Des oeufs de punaise Pentatomoidea trouvés sur le feuillage d'un pin tordu à Tappen, C.-B. Photo: W. Strong

Sous le titre: Nymphes de *Pachycoris klugii* sur *Jatropha cucras*, Tehuacan, Chiapas, Mexique. Photo: T. Haye

1 Une femelle *Agapostemon* sp. (Halictidae) butinant sur un épilobe en épi en juin sur le campus Okanagan de l'UBC, Kelowna. Photo: B. Lalonde

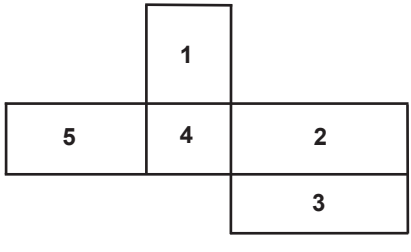
2 Fauchage de la végétation pour capturer des arthropodes terrestres dans le cadre de l'inventaire du Programme sur la Biodiversité Nordique depuis 2010. La photo été prise à Skeleton Creek Valley, juste sous le lac Hazen dans le nord de l'île Ellesmere. Les étudiants sont (de gauche à droite) Christine Roussel (UPEI), Sarah Loboda et Meagan Blair (toutes deux de McGill) Photo: D. Giberson

3 *Stratiomys badia*, une imitateur d'abeille, se repose dans un jardin au crépuscule à Chesterville, Ontario. Photo: C. Ernst

4 Une larve de *Papilio machaon dodi* (Lepidoptera: Papilionidae) sur *Artemisia dracunculus*, près de Drumheller, Alberta. Photo: J. Dupuis

5 Des pupes avancées de l'abeille *Apis mellifera*, disséquées pour trouver des acariens varroa (aucun n'a été trouvé). Prises d'une ruche dans la région de Gisborne sur la côte est de l'île du Nord en Nouvelle-Zélande, mars 2012. Photo: J. McLean

Couverture arrière: Une femelle gravide de l'hespérie du Dakota, *Hesperia dacotae* (Skinner) (Hesperiidae), espèce menacée, perchée sur *Achillea millefolium* (Asteraceae) dans une prairie à herbes hautes au nord-est de Deleau au Manitoba. Photo: C. Rigney



Up front / Avant-propos

Rebecca Hallett, President of ESC / Présidente de la SEC

A year of transition continues …

As I step into the role of President of the ESC/SEC, it is with the knowledge that we are at an important point in the history of our Society. We have just celebrated - in grand style - the 150th Anniversary of the Entomological Society of Canada, we have completed the process of transitioning to the new Canada Not-for-Profit Corporations Act (which also allowed us to officially adopt the bilingual name of our Society), and we have just adopted renewed Vision and Mission statements for our Society (see page 180), which will help to guide us as we move into the future.

We find ourselves in very positive times – our journals and journal subscriptions are healthy and growing, membership numbers have increased (particularly due to student memberships, which is uplifting!), and we have an engaged and vibrant community of entomologists within our Society who are actively communicating our science, and forging ties and creating opportunities beyond our borders for Canadian students of entomology. However, we also find ourselves facing challenges that will require further visioning and change over the coming year. These challenges have been prompted by both budgetary and technological issues that are leading us to re-evaluate the way that we do business and the core activities of our Society. I am optimistic about our future, however. I know that as the oldest scientific society in North America

Une année de transition qui continue…

Alors que je prends le rôle de présidente de la SEC/ESC, j'ai conscience que nous sommes à un point important dans l'histoire de notre Société. Nous venons de célébrer – avec style – le 150e anniversaire de la Société d'entomologie du Canada, nous avons terminé le processeur de transition vers la nouvelle loi canadienne sur les organisations à but non lucratif (qui nous permet également d'adopter officiellement le nom bilingue de notre Société), et nous venons d'adopter nos énoncés de vision et de mission pour notre Société (voir page 180), qui nous guidera dans notre progression vers le futur.

Nous vivons des temps très positifs – nos revues et nos abonnements se portent bien et croissent, le nombre de membres a augmenté (particulièrement grâce aux membres étudiants!), et nous avons au sein de notre Société une communauté engagée et vivante d'entomologistes qui communique activement notre science, forge des liens et créé des opportunités au-delà de nos frontières pour les étudiants canadiens en entomologie. Cependant, nous faisons également face à des défis qui demanderont plus de vision et de changements dans la prochaine année. Ces défis ont été amenés par des questions budgétaires et technologiques qui nous amènent à réévaluer la façon dont nous menons nos affaires et les activités au cœur de notre Société. Je suis cependant optimiste concernant notre futur. Je sais qu'en tant que plus vieille société scientifique en Amérique du Nord (un honneur partagé avec la SEO), nous avons fait face à de nombreux défis dans le passé, et nous avons toujours persévéré. Je sais que cette Société est constituée d'un groupe de gens incroyablement talentueux et dévoués qui ont réellement à cœur la Société et son futur. Et je crois que peu importe les changements que nous traversons, nous continuerons à croître et devenir une société plus riche, incorporant notre mission comme « l'organisation prééminente au

(an honour shared with the ESO), we have faced challenges before and have always persevered. I know that this Society is comprised of an incredibly talented and dedicated group of people who really care about the Society and its future. And I believe that whatever changes we undergo, we will continue to grow and become a richer society, embodying our mission statement as "the pre-eminent organization in Canada for promoting and facilitating entomological research and collaboration, and for disseminating entomological knowledge in Canada and the rest of the world."

I'd like to take the opportunity now to look back a little and reflect on our accomplishments and to offer thanks for the significant contributions that so many of you have made to our Society: It was thanks to the vision of Gary Umphrey, General Chair of the ESC-ESO 2013 JAM, that the sesquicentennial celebrations of the ESC and the ESO were celebrated jointly in Guelph this year. He and Cynthia Scott-Dupree, Vice-Chair and Treasurer, are to be thanked and congratulated for their leadership and dedication in developing and coordinating this milestone celebration – the largest and longest ESC meeting in history. As a member of the Local Organising Committee, I can testify to the hard work and dedication of all of the people who helped to organize and run the JAM. And, as Co-Chair of the Scientific Program Committee, I was so very impressed by and thankful for the wonderful array of symposia submitted by our members, that did so much to enrich scientific interactions and the conference as a whole.

My heartfelt thanks go to Rose DeClerck-Floate, Past President, for her leadership through our milestone sesquicentennial year. She did a tremendous job of guiding us with an even keel through this past year, and I am so pleased that I can rely on her wisdom and advice through the year ahead. Gary Gibson and Bill Riel gave generously of their time and expertise to take us through the transition to the Canada Not-for-Profit Corporations Act - thank goodness for their eyes for detail and knack for legalese! Thanks to Michel Cusson and Maya Evenden for leading their ad hoc Committees on 'Mission and Future' and on 'Future of Headquarters', respectively, Canada pour la promotion et la facilitation de la recherche et de la collaboration entomologiques, et pour la dissémination du savoir entomologique au Canada et dans le reste du monde."

J'aimerais prendre cette opportunité pour regarder en arrière et réfléchir sur nos accomplissements, ainsi que pour remercier les contributions significatives que plusieurs d'entre vous ont apporté à notre Société : c'est grâce à la vision de Gary Umphrey, président général de la réunion conjointe SEC-SEO 2013 que les célébrations sesquicentennaires de la SEC et de la SEO ont été célébrées conjointement à Guelph cette année. Je les remercie et les félicite, lui et Cynthia Scott-Dupree, vice-présidente et trésorière, pour leur leadership et dévouement à développer et coordonner cette célébration clé – la plus grande et plus longue réunion de la SEC de l'histoire. En tant que membre du comité organisateur local, je peux témoigner du travail ardu et du dévouement de tous les gens qui ont aidé à organiser et mener la réunion conjointe annuelle. Et, en tant que co-présidente du comité du programme scientifique, j'ai été très impressionnée et reconnaissante de la merveilleuse gamme de symposiums soumis par nos membres, qui en ont fait tellement pour enrichir les interactions scientifiques et la conférence en soi. Mes sincères remerciements à Rose DeClerck-Floate, présidente sortante, pour son leadership durant cette année sesquicentennaire clé. Elle a fait un travail incroyable pour nous guider durant cette dernière année, et je suis ravie de pouvoir me fier sur sa sagesse et ses conseils pour la prochaine année. Gary Gibson et Bill Riel ont généreusement donné de leur temps et de leur expertise afin de nous mener lors de la transition vers la loi canadienne sur les organisations à but non lucratif – heureusement qu'ils ont l'œil pour le détail et les astuces du jargon juridique! Merci à Michel Cusson et Maya Evenden pour avoir mené leurs comités ad hoc sur « la mission et le futur » et « le futur du siège de la société », respectivement, qui, ensemble, nous ont fourni une vision et des directives qui seront critiques pour la Société alors que nous gérons les défis à venir. Merci à Julia Mlynarek pour son excellent travail professionnel en tant que rédactrice adjointe du *Bulletin* durant les 3

which together have provided us with vision and guidance that will be critical to the Society as we cope with challenges ahead. Thank you to Julia Mlynarek for her excellent and professional work as Assistant *Bulletin* Editor for the past 3 years; we wish her all the best as she moves onward in her career. Thank you to Kevin Floate, who was instrumental in guiding the Society through the migration of *The Canadian Entomologist* to Cambridge University Press during his tenure as chair of the Publications Committee. Over the coming year, we will see some additional and significant changes in key positions, with the anticipated departures of Chris Buddle, our Editor-in-Chief, *The Canadian Entomologist*, and Scott Brooks, our Treasurer, both of whom have given so ably and so much to their respective roles.

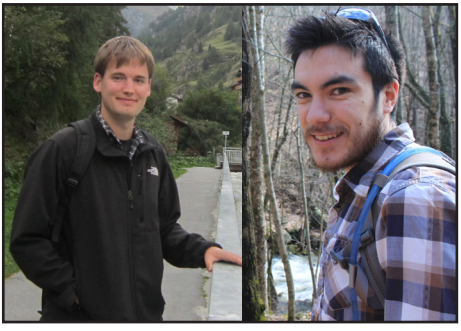
I always feel a little apprehensive singling out people for thanks and recognition, because I know that there are many others not mentioned here who have given in many different ways to the Society over the past year. We are a society that thrives and grows as a result of the dedication and generosity of our many volunteers – please know that all of your contributions are highly valued and important! I'd like to close by issuing an invitation to all of you, and especially to those who haven't been highly involved in recent years, to step forward and share your talents with the Society as we move forward and grow together.

dernières années : nous lui souhaitons le meilleur alors qu'elle va de l'avant avec sa carrière. Merci à Kevin Floate, qui a été au cœur de la migration de *The Canadian Entomologist* vers Cambridge University Press durant son mandat de président du comité des publications. Durant la prochaine année, nous verrons des changements additionnels et significatifs dans les postes clés, avec les départs anticipés de Chris Buddle, notre éditeur en chef de *The Canadian Entomologist* et de Scott Brooks, notre trésorier, qui tous deux ont beaucoup donné dans leurs rôles respectifs.

Je suis toujours un peu appréhensive à distinguer des gens pour des remerciements et de la reconnaissance, parce que je sais qu'il y en a beaucoup d'autres qui ne sont pas mentionnés ici et qui ont donné à la Société durant la dernière année. Nous sommes une société qui prospère et croît grâce au dévouement et à la générosité de nos nombreux bénévoles – merci de noter que chacune de vos contributions est très importante et appréciée! J'aimerais terminer en envoyant une invitation à chacun de vous, et spécialement à ceux qui n'ont pas été très impliqués dans les dernières années, à aller de l'avant et à partager vos talents avec la Société alors que nous avançons et grandissons ensemble.

The student wing / L'aile étudiante

Paul Abram and Boyd Mori



Another year, another great Joint Annual Meeting. Student scientific talent was really on display at this year's meeting in Guelph, with many fantastic talks and posters in the President's Prize sessions.

The Graduate Student Showcase was a big hit, thanks to the local organizing committee in Guelph who agreed to hold it on the first evening of the conference when there were no concurrent sessions. It was well attended, and well received by those who attended. There was incredible variety in the presentations, including jumping spider personality, bird-insect interactions, lepidopteran mating behavior, landscape ecology of butterflies, and IPM using chemical ecology.

The student mixer on Monday evening at the Grad Lounge at the University of Guelph was also a big success. There was a great atmosphere, not to mention the opportunity to sample some local Ontario beer. It's hard not to look forward to next year already!

Elsewhere, if you are looking for a potential graduate supervisor in Canada to continue your entomological studies, check out the updated directory of entomology (http://www.esc-sec.ca/direntomology.php). Right now the Beta version is posted, and we need your help to ensure the accuracy of the information. Whether you are a professor or a student, we would really appreciate if you could take a few minutes to look at the entries for your university, and send any corrections to directory.ent.can@gmail.com.

Une autre année, une autre belle réunion conjointe annuelle. Le talent scientifique étudiant était vraiment en démonstration à la réunion de cette année à Guelph, avec de nombreuses présentations orales et par affiche fantastiques dans les sessions du prix du président.

La vitrine aux étudiants gradués a été un grand succès, merci au comité organisateur local à Guelph d'avoir accepté de le tenir le premier soir de la conférence, alors qu'il n'y avait aucune session concurrente. Il y a eu une bonne audience et la vitrine a été bien reçue par ceux qui y ont assisté. Il y avait une incroyable diversité dans les présentations, incluant la personnalité des araignées sauteuses, les interactions oiseaux-insectes, le comportement d'accouplement des lépidoptères, l'écologie du paysage des papillons et la lutte intégrée utilisant l'écologie chimique.

Le cocktail étudiant du lundi soir au Grad Lounge de l'Université de Guelph a également été un grand succès. Il y avait une bonne atmosphère, sans oublier l'opportunité de goûter quelques bières locales de l'Ontario. Il est difficile de ne pas être déjà impatient pour l'an prochain!

Si vous cherchez un directeur potentiel pour vos études graduées au Canada pour poursuivre des études entomologiques, consultez le répertoire des formations entomologiques (http://www.esc-sec.ca/f-direntomology.php). En ce moment, la version Beta est en ligne et nous avons besoin de votre aide pour s'assurer de l'exactitude des informations. Que vous soyez professeur ou étudiant, nous apprécierions beaucoup si vous pouviez prendre quelques minutes pour regarder les entrées pour votre université, et nous envoyer toute correction à directory.ent.can@gmail.com.

Bon hiver!

Paul & Boyd

Co-présidents du comité des affaires étudiantes de la SEC

students@esc-sec.ca

Enjoy your winter!
Paul & Boyd
ESC Student Affairs Committee Co-Chairs
students@esc-sec.ca
https://www.facebook.com/groups/13552445022/

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 following the format below

Si vous, ou un étudiant que vous connaissez, a récemment soutenu sa 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 selon le format ci-dessous à students@esc-sec.ca.

Andreassen, Lars D. PhD, 2013. Investigation of *Aleochara bipustulata* (Coleoptera: Staphylinidae) adult diet and community interactions. Supervisor: Neil Holliday, University of Manitoba.

Bird, Heather. MSc, 2013. Phylogenomics of the *Choristoneura fumiferana* species complex (Lepidoptera: Tortricidae). Supervisor: Felix Sperling, University of Alberta.

Kwon, Jessica. MSc, 2013. Development of a pheromone-based attract and kill formulation with visual cues to target the diurnally active apple clearwing moth, *Synanthedon myopaeformis* (Borkhausen), (Lepidoptera: Sesiidae). Supervisors: Maya Evenden, University of Alberta, and Gary Judd, Agriculture and Agri-Food Canada.

Rigney, Christa L. MSc, 2013. Habitat characterization and biology of the threatened Dakota skipper (*Hesperia dacotae*) in Manitoba. Supervisor: Richard Westwood, University of Winnipeg.

Richardson, Tamara A. MSc NRES (Biology), 2013. Host colonization patterns, cues mediating host selection and calibration of field surveys with estimates of population abundance of *Leptoglossus occidentalis* in a seed orchard. Supervisor: Staffan Lindgren, University of Northern British Columbia.

Seehausen, M. Lukas. MSc, 2013. Influence of partial cutting on hemlock looper and spruce budworm parasitism. (Original title in French: L'influence de la coupe partielle sur le parasitisme de l'arpenteuse de la pruche et de la tordeuse des bourgeons de l'épinette). Supervisors: Éric Bauce, Université Laval, and Jacques Régnière, Canadian Forest Service.

Schwarzfeld, Marla. PhD, 2013. Life, the Universe and Ophion: Systematics and diversity of Ichneumonidae, with an emphasis on the taxonomically neglected genus *Ophion* Fabricius. Supervisor: Felix Sperling, University of Alberta.

Graduate Student Showcase / Vitrine aux étudiants gradués

Moderators / Modérateurs: Paul Abram and / et Andrew Frewin

Lindsay A. Crawford (Western University), with N. Keyghobadi

Flight morphology corresponds to both broad- and fine-scale landscape structure in a highly specialized glacial relict butterfly (*Lycaena epixanthe*)

For naturally fragmented species, where dispersal of individuals among populations is generally low due to their close habitat association, investment into movement may reflect ecological conditions within habitat patches rather than broad-scale landscape structure as has been observed for more widespread species. Here, we investigate the relative influence of local habitat patch characteristics and measurements of surrounding landscape structure on inter-population variation in morphological traits associated with flight in the naturally fragmented bog copper butterfly (*Lycaena epixanthe*). We assessed investment into flight using measures of relative thorax and abdomen mass, wing area and wing loading. Our results provide evidence for an effect of both local habitat conditions and landscape structure on flight-related morphological traits. Increasing amounts of forest in the surrounding landscape, indicative of increased habitat patch isolation, corresponded with less investment into flight in both sexes. For males, we also found that investment into flight was greatest in smaller patches in which host-plant density is higher and more homogeneously distributed. Males may be using different mate location strategies (i.e., perching vs. patrolling), which require different flight designs, in response to differences in population and host-plant density. Our study highlights that for a naturally fragmented species, morphological traits associated with movement may be responding to both local habitat patch characteristics and surrounding landscape structure. It also supports the hypothesis that local habitat conditions can contribute to morphological variation in species, and should thus be considered when predicting the response of population dynamics and genetics to landscape change.

La morphologie du vol correspond à la structure fine ainsi qu'à grande échelle du paysage pour un papillon spécialisé de la période glaciaire (*Lycaena epixanthe*)

Pour les espèces naturellement fragmentées, où la dispersion des individus entre populations est généralement faible à cause de leur association étroite avec l'habitat, l'investissement dans le mouvement peut refléter les conditions écologiques à l'intérieur des taches d'habitat plutôt que dans la structure du paysage à large échelle, tel qu'observé pour les espèces plus répandues. Nous investiguons ici l'influence relative des caractéristiques locale des taches d'habitat et des mesures de la structure du paysage environnant sur la variation inter-population des traits morphologiques associés avec le vol chez le cuivré des tourbières (*Lycaena epixanthe*), naturellement fragmenté. Nous avons évalué l'investissement dans le vol en utilisant des mesures de la masse relative du thorax et de l'abdomen, de la surface des ailes et de la charge alaire. Nos résultats supportent un effet des conditions locales de l'habitat et de la structure du paysage sur les traits morphologiques liés au vol. Une quantité de forêt plus grande dans le paysage environnant, indiquant une isolation plus grande des taches d'habitat, correspondait à un investissement plus faible dans le vol pour les deux sexes. Pour les mâles, nous avons également trouvé que l'investissement dans le vol était plus grand dans les plus petites taches dans lesquelles la densité de la plante hôte était plus grande et distribuée de façon plus homogène. Les mâles utilisent peut-être différentes stratégies de localisation des femelles (i.e., percheur vs. patrouilleur) demandant des patrons de vol différent, en réponse à des différences dans la population et dans la densité des plantes-hôtes. Notre étude met en évidence que pour une espèce naturellement fragmentée, les traits morphologiques

associés au mouvement pourraient répondre aux caractéristiques de la tache d'habitat local et à la structure du paysage environnant. Elle supporte également l'hypothèse que les conditions de l'habitat local peuvent contribuer à la variation morphologique de l'espèce, et devraient donc être considérées lors des prévisions de la réponse de la dynamique et de la génétique de la population aux changements de paysage.

Raphaël Royauté (McGill University), with C.M. Buddle and C. Vincent

Behavioural variations in a jumping spider from apple orchards

Recent research in behavioural ecology emphasizes consistency in behavioural strategies across time (animal personality) or contexts (behavioural syndromes). Focusing on consistent individual behavioural variation allows a better understanding of how human-driven environmental changes affect trait variation. In this presentation, I will review the different factors affecting individual behavioural variation in the context of agroecosystems, using the jumping spider *Eris militaris* as a model organism. Spiders are important components of agroecosystems, as they are major generalist predators and efficient biocontrol agents. *Eris militaris* spiders were captured in different populations from apple orchards and natural sites in southern Québec, and were subjected to different behavioural tests (activity, aggression, boldness, voracity). We tested whether behavioural syndromes varied between populations with different histories of insecticidal exposure, how consistent behavioural correlations were through ontogeny and how sublethal exposure to insecticides disrupted behavioural consistency and correlations. We found evidence for differing syndrome structure between populations from insecticide-free and insecticide-treated orchard along with ontogenic shifts in behavioural correlations between sub-adult and adult stages. In addition, exposure to a sublethal dose of phosmet strongly reduced behavioural consistency in activity but did not affect prey capture. Phosmet exposure did however alter the correlation between activity and prey capture. This research provides important information on how individuals cope with anthropogenic pressures for generalist predators in agroecosystems and bridges gaps between animal personality, agroecology and ecotoxicology.

Variations comportementales chez une araignée sauteuse en vergers de pommiers

Les avancées récentes en écologie comportementale soulignent l'importance de stratégies comportementales stables dans le temps (personnalité animale) et entre différents contextes (syndromes comportementaux). Mettre l'emphase sur ces variations comportementales à l'échelle individuelle permet de mieux comprendre l'impact des changements environnementaux d'origine anthropique sur la variation des traits phénotypiques. Au cours de cette présentation, je soulignerai les différents facteurs influençant les variations individuelles de comportement dans le cadre des agroécosystèmes en utilisant l'araignée sauteuse *Eris militaris* en tant que modèle. Les araignées sont une composante importante des agroécosystèmes puisqu'elles forment l'un des principaux groupes de prédateurs généralistes et sont des agents de lutte biologique efficaces. Nous avons échantillonné des individus de l'espèce *Eris militaris* en vergers de pommiers et dans des sites naturels du Sud du Québec et les avons soumis à une série de tests comportementaux (tests d'activité, d'agressivité, de témérité et de voracité). Nous avons testé la présence de différences de syndromes comportementaux entre populations ainsi que la stabilité de ces syndromes au cours du développement. Nous avons également testé si les effets d'une exposition sublétale à un insecticide étaient à même d'altérer la répétabilité des traits comportementaux et leurs corrélations. Nous avons démontré la présence de différences de structure de syndrome comportementaux entre populations de vergers traités et non-traités aux insecticides, ainsi que des changements de corrélations entre stades subadultes et adultes.

De plus, nous montrons qu'une exposition sublétale au phosmet réduit la répétabilité des traits comportementaux liés à l'activité mais n'affecte pas la capture des proies. L'exposition au phosmet peut cependant altérer significativement la corrélation entre activité et capture des proies. Cette recherche nous a permis d'étendre nos connaissances sur la façon dont les individus font face aux pressions d'origine anthropiques chez les prédateurs généralistes en agroécosystèmes et a permis de combiner les expertises relatives aux domaines de la personnalité animale, de l'agroécologie et de l'écotoxicologie.

Boyd A. Mori (University of Alberta), with M. Evenden

Pheromone-based monitoring and management of the red clover casebearer, *Coleophora deauratella*, in Alberta

The red clover casebearer (RCC), *Coleophora deauratella* (Lepidoptera: Coleophoridae) is an invasive pest of clover throughout Canada. Red clover (*Trifolium pratense* L.) is widely grown for seed production, forage and use in crop rotations for soil improvement. In clover seed production areas throughout Canada, RCC infestations can cause > 80% seed loss and there are no registered insecticides available to producers. My initial research helped identify the RCC female-produced sex pheromone as a 10:1 ratio of (*Z*)-7-dodecenyl acetate and (*Z*)-5-dodecenyl acetate. This identification allows for the use of synthetic pheromones to detect and manage this invasive pest. Here, I report on the development of a pheromone-based monitoring system which can be used to monitor male RCC flight phenology and population density. In addition, I tested pheromone-mediated mating disruption formulations that release large amounts of synthetic pheromone to determine if treatment interferes with mate finding and egg laying. Results from small plot field trials with three RCC pheromone formulations showed male orientation to pheromone was reduced 60-99% in treated compared to non-treated control plots. I also investigated the mechanisms by which pheromone treatment disrupts mating of RCC. The two component pheromone blend is highly attractive to male moths, but the major component ((*Z*)-7-dodecenyl acetate) alone is not. Small plot field trials, combined with laboratory electroantennograms compared the attractive and unattractive pheromone formulations to determine the importance of different mechanisms in mating disruption. These experiments will form the basis of a comprehensive IPM program which can detect, monitor and manage this pest.

Détection et gestion par phéromones du porte-case du trèfle, *Coleophora deauratella*, en Alberta

Le porte-case du trèfle (PCT) *Coleophora deauratella* (Lepidoptera: Coleophoridae) est un ravageur envahissant du trèfle dans tout le Canada. Le trèfle des prés (*Trifolium pretense* L.) est largement cultivé pour sa production de graines, le fourrage et l'utilisation dans les rotations de culture pour l'amélioration des sols. Dans les régions de production de graines de trèfle au Canada, les infestations du PCT peuvent causer >80% de perte de graines et il n'y a aucun insecticide enregistré disponible pour les producteurs. Mes recherches initiales ont permis d'identifié la phéromone sexuelle produite par les femelles PCT comme étant un ratio 10 :1 de (*Z*)-7-acétate de dodécényl et (*Z*)-5-acétate de dodécényl. Cette identification permet l'utilisation de phéromones synthétiques pour détecter et gérer ce ravageur envahissant. Je rapporte ici le développement d'un système de surveillance par phéromone qui pourrait être utilisé afin de surveiller la phénologie du vol des mâles PCT et la densité de population. De plus, j'ai testé des formulations de phéromones pour confusion sexuelle qui relâchent de grandes quantités de phéromone synthétique afin de déterminer si le traitement interfère avec la localisation du partenaire et la ponte. Les résultats d'essais sur de petites parcelles en champ avec trois

formulations de phéromone de PCT ont montré que l'orientation des mâles vers la phéromone était réduite de 60-99% dans les parcelles traitées comparées aux non-traitées. J'ai également investigué le mécanisme par lequel les traitements de phéromone amène la confusion sexuelle chez le PCT. Le mélange des deux composantes de la phéromone est hautement attractif pour les mâles papillons, mais la composante majeure ((*Z*)-7-acétate de dodécényl) seule ne l'est pas. Des essais en petites parcelles en champ, combinés à des électroantennogrammes au laboratoire ont été conduits afin de comparer les formulations attractives et non-attractives et ainsi déterminer l'importance de différents mécanismes dans la confusion sexuelle. Ces expériences formeront les bases d'un programme complet de lutte intégrée qui peut détecter, surveiller et contrôler ce ravageur.

Joanna Konopka (Western University), with J.N. McNeil

Previous mating status regulates post-mating refractory period in *Striacosta albicosta* (Lepidoptera: Noctuidae) females

In many insect species males transfer a spermatophore that not only contains sperm but also nutrients that may contribute to female reproductive success. Furthermore, in polyandrous species, males may also transfer substances to reduce sperm competition by affecting female sexual receptivity. We first determined the incidence of polyandry in the univoltine western bean cutworm (WBC), *Striacosta albicosta*, females. Then, under controlled laboratory conditions, we investigated the influence of both female and male previous mating history (virgin, once, twice mated) on (i) the duration of mating, (ii) the female refractory period (RP) following mating, and (iii) the subsequent calling behaviour (emission of the sex pheromone) of females once they regained receptivity. The mating status of WBC males only affected mating duration, with copulations lasting longer in pairs where the male had previously mated, which could be related to the time required to produce a second or third ejaculate. However, female mating status affected both the duration of refractory period and the time at which females initiated calling after the onset of the scotophase. Previously mated females had a shorter refractory period and resumed calling activity earlier in the scotophase than those mated for the first time. The behaviours of previously mated females could reduce competition with virgin females and would explain the high incidence of polyandry observed in the field. Our findings, especially with respect to the effect of previous male mating, differ significantly from those reported for many other moth species. Possible explanations for the differences, including voltinism, are discussed.

Le statut d'accouplement précédent régule la période réfractaire après l'accouplement pour les femelles *Striacosta albicosta* (Lepidoptera: Noctuidae)

Chez beaucoup d'espèces d'insectes, les mâles transfèrent un spermatophore qui ne contient pas que des spermatozoïdes, mais également des nutriments qui peuvent contribuer au succès reproducteur de la femelle. De plus, chez les espèces polyandres, les mâles peuvent aussi transférer des substances réduisant la compétition spermatique en affectant la réceptivité sexuelle des femelles. Nous avons d'abord déterminé l'incidence de la polyandrie chez le ver-gris occidental des haricots (VOH), *Striacosta albicosta*. Ensuite, dans des conditions contrôlées au laboratoire, nous avons investigué l'influence de l'histoire d'accouplement de la femelle et du mâle (vierge, accouplé(e) une ou deux fois) sur (i) la durée de l'accouplement, (ii) la période réfractaire de la femelle après l'accouplement, et (iii) le comportement d'appel subséquent (émission de la phéromone sexuelle) par les femelles après avoir regagné leur réceptivité. Le statut reproducteur des mâles VOH n'affectait que la durée d'accouplement, les copulations les plus longues étant dans des couples où le mâle s'était précédemment accouplé, ce qui pourrait être lié au temps

requis pour produire un deuxième ou un troisième éjaculat. Cependant, le statut reproducteur des femelles affectait autant la durée de la période réfractaire que le délai pour les femelles à initié l'appel après le début de la scotophase. Les femelles précédemment accouplées avaient une période réfractaire plus courte et initiaient l'appel plus tôt dans la scotophase que les femelles accouplées pour la première fois. Les comportements des femelles déjà accouplées pourraient réduire la compétition avec les femelles vierges et expliquer la forte incidence de polyandrie observée sur le terrain. Nos résultats, particulièrement concernant l'effet des accouplements antérieurs des mâles, différent significativement de ceux rapportés pour plusieurs autres espèces de papillons. Les explications possibles de ces différences, incluant le voltinisme, sont discutées.

Sean McCann (Simon Fraser University), with O. Moer, T. Jones, C. Scott, G. Khaskin, R. Gries, S. O'Donnell, and G. Gries

Death from the skies: predation on social wasps by red-throated caracaras

I studied the foraging biology of the red-throated caracara, an unusual and charismatic American falconid that specializes on the brood of social wasps as prey. Specifically, I tested the hypothesis that caracaras possess chemical repellents that protect them from their aggressive and defensive prey. During my studies, I used a combination of analytical chemistry, electrophysiology and behavioural observation. Chemical analyses revealed several potential repellents on the birds' face, feathers and feet, but video recordings of caracaras attacking nests of social wasps clearly showed that the birds are counterattacked, and sometimes temporarily driven away, by defending wasps. Foraging birds minimize stings by striking nests rapidly and repeatedly until the nest falls to the ground or the wasps evacuate the nest in an absconding swarm, which no longer defends the nest site. The birds' hit-and-run strategy evidently affords successful predation on many wasp species, as cameras at 2 caracara nests recorded 10 genera of social wasps that were delivered to chicks. Several of the most frequently delivered genera are not typically found by scientists, highlighting superior detection by caracaras of cryptic nests. The chemicals on the birds (iridodial, 2-heptanone and sulcatone) are abundant in defensive exocrine gland secretions of sympatric *Azteca* ants. We suggest that the birds acquire these compounds coincidentally when they alight on ant-inhabited trees. Our study reveals fascinating insights into bird-insect interactions and highlights the interconnectedness of animals in a tropical rainforest community.

La mort vient du ciel: prédation des guêpes sociales par le caracara à gorge rouge

J'ai étudié la biologie de l'approvisionnement du caracara à gorge rouge, un falconidé américain inhabituel et charismatique qui se spécialise sur la progéniture de guêpes sociales comme proies. Plus spécifiquement, j'ai testé l'hypothèse que les caracaras possèdent des répulsifs chimiques qui les protègent de leurs proies agressives et défensives. Durant mes études, j'ai utilisé une combinaison de chimie analytique, d'électrophysiologie et d'observations comportementales. Les analyses chimiques ont révélé la présence de plusieurs répulsifs potentiels sur le visage, les plumes et les pattes des oiseaux, mais les enregistrements vidéo des caracaras attaquant les nids des guêpes sociales montraient clairement que les oiseaux sont contre-attaqués, et parfois temporairement chassés par les guêpes qui se défendent. Les oiseaux qui s'approvisionnent minimisent les piqûres en attaquant les nids rapidement et à répétition jusqu'à ce que le nid tombe au sol ou que les guêpes évacuent le nid dans un essaim en fuite, qui ne défend plus le site du nid. La stratégie de « délit-de-fuite » des oiseaux apporte de toute évidence une prédation réussie sur de nombreuses espèces de guêpes, puisque les caméras sur 2 nids de caracara ont enregistré 10 genres de guêpes sociales qui étaient livrés aux oisillons. Plusieurs des genres les plus livrés ne

sont typiquement pas retrouvés par les scientifiques, soulignant la détection supérieure des nids cryptiques par les caracaras. Les composés chimiques sur les oiseaux (iridodial, 2-heptanone et sulcatone) sont abondants dans les sécrétions défensives des glandes exocrines des fourmis sympatriques *Azteca*. Nous suggérons que les oiseaux acquièrent des composés par coïncidence quand ils se posent sur des arbres habités par des fourmis. Notre étude révèle des informations fascinantes sur les interactions oiseau-insecte et souligne l'inter-connectivité des animaux dans une communauté de forêt tropicale humide.

Rick West

Graduate Student Showcase Speakers (L to R): Boyd Mori, Joanna Konopka, Lindsay Crawford, Raphaël Royauté, Sean McCann

2013 ESC/ESO President's Prize Winners and Runners-up

Oral Presentations

Biodiversity

Winner:

Etienne Normandin (Laval and McGill Universities), with V. Fournier and C. Buddle.

Biodiversity of wild bees in two urban settings: Montreal and Quebec City.

Runner-up:

Dorothy Maguire (McGill University), with E.M. Bennett and C.M. Buddle.

Insect herbivory in fragmented forest landscapes: linking land use with changes in biodiversity and ecosystem function.

Behaviour and Biological Control

Winner:

Catherine Scott (Simon Fraser University), with D. Kirk, S. McCann, and G. Gries.

Web reduction behaviour in black widows: a story of attraction, courtship, manipulation, and rivalry.

Runner-up:

Nadia Tsvetkov (York University), with A. Zayed.

Effect of social interaction on learning and memory in honey bees.

Physiology and Molecular Biology

Winner:

Brock Harpur (York University), with C.F. Kent, D. Molodtsova, J.M.D. Lebon, A.S. Alqarni, A.A. Owayss, and A. Zayed.

*Population genomics of the honey bee (*Apis mellifera*): adaptation on worker traits.*

Runner-up:

Bryan Brunet (University of Alberta), with F.A.H. Sperling.

Genomic analysis of hybridization in the spruce budworm species complex in southwestern Alberta.

Agriculture and Biological Control

Winner:

Ashley Mullins (Dalhousie University), with C. Cutler, and N. McLean.

Field edge planting to deter white-tailed deer and attract carabid beetles.

Runner-up:

Maryam Sultan (University of Guelph), with C. Scott-Dupree, R. Buitenhuis, and G. Murphy.

Use of the Sterile Insect Technique to control American serpentine leafminer, Liriomyza trifolii *(Burgess), in ornamental greenhouses.*

Ecology

Winner:

Grant L. Olson (Simon Fraser University), with J.H. Myers, and J.S. Cory.

Transgenerational effects on disease resistance in tent caterpillars.

Runners-up:

Sarah Semmler (University of Manitoba), with A.C. Worley.

Network structure and plant-insect dynamics in tall grass prairie.

Paul Abram (University of Montreal), with T.D. Gariepy, G. Boivin, and J. Brodeur.

An invasive stink bug as an evolutionary trap for an indigenous egg parasitoid.

Posters

Agriculture and Forestry

Winner:

Paul K. Abram (University of Montreal), with M.-L. Després-Einspenner, J. Brodeur, and G. Boivin.

Conditional egg colouration by a predatory stink bug.

Runner-up:

Justine Shiell (University of Guelph), with C. Scott-Dupree, and S. Lachance.

*Treatment of duck manure with naturally-occurring substances to reduce suitability for house fly (*Musca domestica*) landing and breeding.*

General Entomology

Winner:

Daniel Wiens (University of Saskatchewan), with A.R. Davis.

*Honey bees (*Apis mellifera*) pack thrips (Thysanoptera) into pollen pellets while foraging.*

Runners-up:

Mariya Cheryomina (York University), with S. Colla, and L. Packer.

*Assessing bumble bee (*Bombus *spp.; Apidae) habitat quality in southern Ontario*

Raphaël Royauté (McGill University), with M. Ballot, C.M. Buddle, and C. Vincent.

Does physiological state affect individual variation in boldness in a jumping spider?

Rick West

Presidents Prize winners and runners-up (L to R): Daniel Wiens, Brock Harpur, Raphaël Royauté, Etienne Normandin, Dorothy Maguire, Catherine Scott, Grant Olson, Ashley Mullins, Bryan Brunet, Paul Abram, and Maryam Sultan

ESC 2013 student award winners / Gagnants des prix étudiants SEC 2013

The winner of the **PhD Postgraduate Award** is **Ikkei Shikano**. Ikkei is at Simon Fraser University, studying the role of nutrients on the strength of immune responses in cabbage looper moths. By using artificial diets differing in macronutrient ratios, he has shown that increasing dietary protein increases disease resistance and immune responsiveness in looper larvae, and that they will self-select a balanced macronutrient ratio to maximize development. The interactions between food quality and immunity have implications to the efficacy of biological control of loopers.

Maryam Sultan received the **MSc Postgraduate Award**. Maryam is in the School of Environmental Sciences at the University of Guelph where she is studying the serpentine leafminer, Liriomyza trifolii, a major pest of greenhouse ornamental crops. She will evaluate the effectiveness of present conventional and biological control strategies, determine if the leaf miner is resistant to currently registered pesticides, and investigate if the use of sterile male release and biological control with Diglyphus isaea are effective and economically efficient control procedures.

Morgan Jackson from the University of Guelph won the **Keith Kevan Award**. Morgan is in the School of Environmental Sciences and has studied the evolution and diversification of apparent Hymenoptera mimicry in stilt-legged flies (Diptera: Micropezidae). Morgan considers biosystematics to be the world's most challenging jigsaw puzzle whose pieces are constantly appearing, evolving, changing, and getting lost with time. He is undertaking phylogenetic analyses and making generic revisions to properly classify species in this group.

This year's **John Borden Award** goes to **Tyler Wist** from the University of Alberta. Tyler is studying insect chemical ecology and its applications to Integrated Pest Management of the ash leaf coneroller moth, Caloptilia fraxinella (Ely) (Gracillariidae). More specifically he is investigating semiochemical mediated tritrophic interactions between ash spp., C. fraxinella, and Apanteles polychrosidis parasitoids. He is working to develop a lure for the moths.

Paul Abram from the University of Montreal received the **Ed Becker Conference Travel Award**. At the 2013 JAM, he presented a talk titled "An invasive stink bug as an evolutionary trap for an indigenous egg parasitoid" and a poster titled "Conditional egg colouration by a predatory stink bug".

Rick West

Graduate Student Award Winners (L to R): Ikkei Shikano (PhD Postgraduate Award), Paul Abram (Ed Becker Conference Travel Award), Morgan Jackson (Keith Kevan Award), Maryam Sultan (MSc Postgraduate Award). (Tyler Wist won the John Borden Award but was not present at the JAM.)

Student scholarships and awards

In 2014 a competition for the following Entomological Society of Canada scholarships and awards will be held: MSc and PhD Scholarships, the Research Travel Award, the John H. Borden Scholarship in IPM, the Biological Survey of Canada Award, and the Becker Conference Travel Award. Details of the application procedures are available on the Society website http://www.esc-sec.ca/studentawards.php. Students are encouraged to apply for these awards. The deadline for all but the Becker Award is 16 February 2014. For the Becker Award, the deadline will be the same as that for abstract submissions for the 2014 JAM in Saskatoon.

Prix et bourses étudiants

En 2014, une compétition pour les prix et bourses suivants de la Société d'entomologie du Canada se tiendra : la bourse pour études graduées, la bourse de voyage pour la recherche, la bourse John H. Borden en lutte intégrée, la bourse d'études supérieures de la Commission biologique du Canada, et la bourse Ed Becker pour la réunion annuelle. Les détails de la procédure d'application sont disponibles sur le site Internet de la Société http://www.esc-sec.ca/f-studentawards.php. Nous encourageons les étudiants à appliquer sur ces bourses. La date limite pour toutes les bourses, sauf la bourse Ed Becker, est le 16 février 2014. Pour la bourse Ed Becker, la date limite est la même que pour la soumission des résumés pour la réunion conjointe annuelle 2014 à Saskatoon.

F. Beaulieu

Asilidae

Writing an Abstract

Good abstracts are crucial to communicating research results. Abstracts are also often used in evaluating potential presentations at meetings or applications for awards. Recently, I reviewed abstracts for student awards in ESC and feel a reminder of what makes a good abstract could be helpful.

1. **Title** – Short, catchy and yet descriptive.

2. **Text -** Be specific. Vague statements about what you did or results are not helpful.

3. The first one or two sentences should describe the **goals**, **background** and **significance** of the study.

4. What was the **specific question** asked?

5. How was the **study designed and carried out**? Do not get too detailed but convey the general methods. If you did the study in several years or at several sites include this. Include the number of replicates so the reader can judge the extent of the study. Toot your own horn!

6. **Results** – State your major findings as specifically as possible. Results should relate to the initial objectives and the research question.

7. **Conclusions** – Give the interpretation of the results, overall conclusions, and significance of the study.

Judith Myers, Chair of ESC Student Awards Committee

Écrire un résumé

De bons résumés sont cruciaux pour communiquer des résultats de recherche. Les résumés sont souvent utilisés pour évaluer les présentations potentielles dans des réunions ou dans des applications pour des prix. J'ai récemment révisé des résumés pour les prix étudiants de la SEC, et j'ai pensé qu'un rappel sur ce qui fait un bon résumé pourrait être utile.

1. **Titre** – Court, accrocheur, mais descriptif

2. **Texte** – Soyez spécifiques. Des phrases vagues sur ce que vous avez fait ou sur les résultats n'aident pas.

3. Les premières 1 ou 2 phrases devraient décrire les **objectifs**, le **contexte** et **l'importance** de l'étude.

4. Quelle était la **question spécifique** posée?

5. Comment l'étude était-elle **planifiée et menée**? Ne donnez pas trop de détails, mais présentez la méthode générale. Si vous avez conduit l'étude sur plusieurs années, ou plusieurs sites, mentionnez-le. Indiquez le nombre de répétitions pour que le lecteur puisse juger de l'importance de l'étude. Vantez-vous!

6. **Résultats** – Rapportez vos principaux résultats en étant aussi spécifiques que possible. Les résultats devraient faire le lien avec les objectifs initiaux et la question de recherche.

7. **Conclusions** – Donnez l'interprétation des résultats, les conclusions générales et l'importance de l'étude.

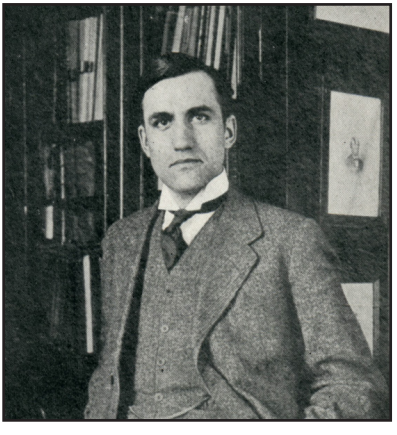
Judith Myers, présidente du comité des prix étudiants de la SEC

From the Distant Past

As a contribution towards the celebration of the sesquicentennial of the Entomological Society of Canada, members of the Heritage Committee will offer tributes to individuals who played significant roles in the development of entomology as a discipline in Canada. One tribute will appear in each of the four issues of the Bulletin *during 2013. In the March issue, one of the Society's co-founders, Charles Bethune, was presented; in June, the remarkable Quebec priest and naturalist Léon Provancher was documented; and in September, the achievements of William Saunders, the first Director of the Dominion Experimental Farms and a Society co-founder, were summarised.*

Part IV. Charles Gordon Hewitt (1885-1920): Second Dominion Entomologist and Consulting Zoologist

Cedric Gillott



C. Gordon Hewitt (from *The Canadian Entomologist* **52**: facing page 97 [1920], with permission)

While the name C. Gordon Hewitt should be familiar to all members of the Society, given that one of the Society's major awards is named in his honour, it is likely that most *Bulletin* readers will not be aware of the massive achievements of this individual whose life tragically ended just 6 days after his 35th birthday.

Hewitt was born on 23 February 1885 near Macclesfield, then a smallish market town in central England. After primary school, he attended the prestigious King Edward VI Grammar School in Macclesfield, at which his broad interest in natural history developed. He then studied Zoology at Manchester University (at that time known as the Victoria University of Manchester) where he received his BSc (first-class honours) (1902), MSc (1903), and DSc (1909). As the top undergraduate, he received the University Prize and was named University Scholar (Gibson and Swaine 1920; Riegert 1998).

Hewitt's potential was immediately recognised by his alma mater which appointed him Assistant Lecturer in Zoology in 1902, promoting him to Lecturer in Economic Zoology in 1904. (These ranks are approximately equivalent to Assistant and Associate Professor, respectively, in the North American system.)

In May 1909, a massive change occurred in Hewitt's life when he was selected by William Saunders (see Part III of this series) as Canada's second Dominion Entomologist, succeeding James Fletcher who had passed away a year earlier. During his 11 years in office, Hewitt transformed the Dominion Entomological Service from a small unit within the Experimental Farms Branch (where he had one assistant and a stenographer!) to a separate Entomological Branch within the Department of Agriculture. Under his leadership, the Entomological Branch included four Divisions: Field Crop and Garden Insects, Systematic Entomology, Forest Insects, and Foreign Pest Suppression (Gibson and Swaine 1920). As well, 12 field laboratories were set up across Canada. Hewitt also showed an uncanny ability to select the best people to lead research and development of pest control methods in these varied areas, including Norman Criddle, James M. Swaine, John D. Tothill, Reginald C. Treherne, Edgar H. Strickland, and William A. Ross (who, incidentally, was the first president of the current version of the Society

when it was formed in November 1950) (Riegert 1980).

Almost as soon as he arrived in the country, Hewitt saw that Canada lacked legislation regarding the introduction and spread of pests and diseases. So, together with the newly appointed Dominion Botanist, Hans T. Güssow, he began to draft the Destructive Insect and Pest Act, which was approved by Parliament in March 1910 (and given Royal Assent in May of that year). First and foremost, the Act provided more funds than had been previously available for entomological work, especially for the appointment of quarantine personnel; further, it gave these inspectors much greater power to examine, control entry of, quarantine, and if necessary destroy materials that could harbor potential pests in Canada. Then, the primary insects of interest were San Jose scale, brown-tailed moth, woolly apple aphid and West Indian peach scale, though many more would be added to the list as time passed.

But Hewitt was more than just a first-class administrator; he was also an accomplished scientist and prolific writer, publishing in his shortened career over 120 articles that covered an amazing range of topics, many non-entomological (Hutchings 1920). As would be expected given his position, a number of these were reports, bulletins and circulars of various kinds. Perhaps two thirds of his publications dealt with insects, especially medically or agriculturally important species, including his well-known text on the house fly (Hewitt 1910). However, early in his career, he also published on crustaceans, annelids, lichens, mosses, and fresh-water algae. Then, from 1914, his publication list began to include papers on birds and mammals, especially their protection and conservation. Related to the latter, in 1916 Hewitt's title was changed to Dominion Entomologist and Consulting Zoologist.

These later publications were a visible expression of his long-held broad interests in natural history and wildlife. In addition to writing a number of major articles on wildlife conservation in Canada, Hewitt played a major role in furthering the Canada-USA treaty on migratory birds, for which, in 1918, he was awarded a gold medal by the British Royal Society for the Protection of Birds (RSPB). His services as Secretary of the Advisory Board on Wildlife Protection, as President of the Ottawa Field Naturalists Club (1918), and as a corresponding member of the Zoological Society of London also reflect the breadth of his zoological interest.

Outside the realm of science, Hewitt was also prominent. For example, he was the first President of the Institute of Professional Civil Servants, President of the Ottawa Boys Home, a councillor in the Ottawa Humane Society, and a strong supporter of the Boy Scout movement (Gibson and Swaine 1920).

It will not surprise readers to learn that many honours were bestowed on Hewitt, both in Canada and abroad. In 1913 he was elected a Fellow of the Royal Society of Canada, and in the following year was appointed its Honorary Treasurer, a position he held until his death. Also in 1913 he was made a Fellow of the Entomological Society of America as well as being elected President of the Entomological Society of Ontario. The American Association of Economic Entomologists elected him President in 1915 and, as noted above, the RSPB presented him with a gold medal in 1918 (Gibson and Swaine 1920; Riegert 1998).

Shortly after returning to Ottawa from Montreal where he had presented a paper to the federal Commission on Conservation on "Fur bearing animals, their economic significance and future", Hewitt contracted influenza; this developed into pleural pneumonia from which he died on 29 February 1920. Just prior to his death, Hewitt had completed a memoir on wildlife conservation, prepared during his spare time at home during the previous 4 years. This was subsequently published as a book (Hewitt 1921).

In February 1974 the Society's Governing Board adopted a recommendation made by Philip S. Corbet and C. Ron Harris that the Society establish a new achievement award in honour of Hewitt, to recognize exceptional contributions to entomology made by active members of the

Society early in their career, specifically those under 40 years of age. The C. Gordon Hewitt Award was first presented in 1975 and has been awarded annually since, save for eight occasions when no suitable candidate was proposed (for details, see http://www.esc-sec.ca/hewitt.php).

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Opening doors to a global, inclusive conference, one tweet at a time

Morgan D. Jackson, Crystal Ernst and Christopher M. Buddle

In the "The Last Word" column, published in the September 2013 *Bulletin* of the ESC (Vol. 45, No. 3), the use of social media, and Twitter in particular, was discussed, and some questions were raised about the relevance of "tweeting" for the Entomological Society of Canada. To quote that opinion piece:

[in reference to the ESC twitter account] "*Of about 100 posts since 1 January, only a handful fall into the pointless babble category. However, a very large number of the remaining posts (even excluding those that are retweets) simply present information that is already available elsewhere. In short, I see very few tweets that can be considered 'useful .... to our Society'.*"

We are pleased to publish a defense of these new media, and will attempt to educate readers on what social media and Twitter have to offer the Entomological Society of Canada, and we will offer arguments that suggest Twitter has significant value, and is far from a useless endeavour.

There are a seemingly endless number of social networks and online media available currently, and rather than diving into their individual merits here, we recommend reading Bik and Goldstein's An Introduction to Social Media for Scientists (2013) for a general overview of advantages and strategies. Whatever network you decide to join, rest assured that you won't be lonely: 50% of all Canadians are now using social media (MacDonald & Colledge 2013), while an even higher percentage of University faculty have adopted some form of them for both personal (84%) and professional (55%) use (Seaman & Tinti-Kane 2013). Social media are no

Morgan Jackson (jackson@uoguelph.ca; on twitter @BioInFocus) is a graduate student in the School of Environmental Sciences, University of Guelph. Crystal Ernst (crystal.ernst@mail.mcgill.ca; on twitter @GeekInQuestion) and Chris Buddle (chris.buddle@mcgill.ca or on twitter @CMBuddle) are graduate student and faculty member, respectively, in the Department of Natural Resource Sciences, McGill University

longer a niche reserved for 'Beliebers' and over-sharers: rather, they now represent a significant outlet for communicating with peers and the public.

Without actually exploring and experimenting with it personally, Twitter's benefits can be somewhat intangible, and may seem like "pointless babble". For an academic audience, however, and in light of the recent Joint Annual Meeting of the Entomological Societies of Canada and Ontario still fresh in our minds, perhaps the best analogy for Twitter would be to think of it as a (free) global conference on all aspects of humanity, that is occurring 24 hours a day, 7 days a week, 52 weeks a year. It is possible to have a long, successful, and fulfilling career without ever attending a scientific conference, yet there are many advantages associated with conferences, including making new connections, learning about ground-breaking new research, and gaining inspiration for future projects and collaborations. The same is true for Twitter (Darling et al. 2013): it is completely possible to make it through your entire career without giving it a try, but there is an awful lot to be gained by investing even a small amount of time to engage with the important conversations occurring online.

Do you remember the first time you attended a scientific conference? Were you overwhelmed by the number of people, talks and events, intimidated by vocabularies unfamiliar to you, or feeling isolated and alone despite being surrounded by people who you suspected had similar interests, all while simultaneously being excited that you were there and had a voice? The very same emotions and frustrations can occur the first time you sign in to Twitter. The 'fear of being overwhelmed' is often at the heart of many criticisms of social media tools, but like any good tool, it must be used correctly.

We believe that the 'fear of being overwhelmed' is largely a 'fear of the unknown' and an unwillingness to keep an open mind and see the value in alternative forms of communication to our larger scientific community. The vast majority of the information being shared and conversations taking place are of no interest to any one person, but with a little bit of work you can find the conversations and communities that are right for you. There are numerous guides to Twitter that can help you navigate these initial ventures into the "Twitterverse", but one we find particularly useful comes from Dr Elena Bennett's lab at McGill University (downloadable from here: http://bennettlab.weebly.com/resources-and-advice.html). Like any communication tool, it will take some time and practice to learn how to use Twitter correctly, but for some people, its value is immense.

We wish to point out two particularly relevant blog posts that were written as responses to the "Last Word" *Bulletin* piece. These were written by young entomologists who recently started post-graduate degrees. First, Derek Hennen talks about how Twitter has allowed him to grow as an entomologist in tangible and meaningful ways. He found his current position as an MSc student because of Twitter. He gets specimens through his connections on Twitter, and he is able to stay current in the discipline because of Twitter. His full post can be found here: http://normalbiology.blogspot.ca/2013/10/tweeting-or-just-twittering.html

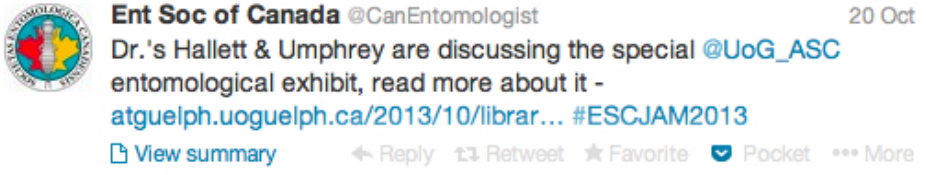
Paul Manning, a Rhodes Scholar at Oxford, also wrote about the professional networks he has developed because of connections and collaborations facilitated through Twitter. He talks about how Twitter is also useful for sharing the beauty and wonder of entomology with other people. At the end of the post, Paul mentions that he would not have applied for a Rhodes Scholarship if he hadn't seen it mentioned in a tweet. Read Paul's post at:

http://pauly-olly-oxford.blogspot.co.uk/2013/10/pointless-babble-importance-of-twitter.html

The opinion piece in the *Bulletin* was correct about one thing: Twitter contains a lot of information, some of which is indeed available elsewhere. Returning to our analogy of a scientific conference, where presentations and posters are used to introduce work available elsewhere (i.e., peer-reviewed journals) to inspire interactions, debate and discussion among participants. Most

Twitter users share information, articles (both of the technical and popular nature), or other media that they find interesting, while adding their own commentary and inviting others to engage.

Here are a few sample tweets to illustrate some of our arguments:



In that tweet, the followers of the ESC twitter handle (of which there are almost 500) learn that there is a special, relevant exhibit at the University of Guelph; attendees and other followers can follow that link and be exposed to some truly stunning content related to Entomology.

Here Chris Buddle linked to two blog posts (written by two graduate students, including Crystal Ernst) that resulted from the ESC conference. These two posts were highlighted on the blog administered by our colleagues in the Entomological Society of America. This was 'retweeted' (meaning, passed along to followers of other individuals) by an entomologist in Australia and by the Ohio State Insect Collection Twitter account; these represent people who are interested in what is happening in our Society, but who are not members of the ESC. This is how outreach occurs: without Twitter, these people would not be aware of our activities.

In this final example, Sarah Semmler (a MSc student at the University of Manitoba) discusses how Twitter can help her improve future presentations. That's very helpful!

In the *Bulletin* article, one of the primary criticisms of the ESC's (and by proxy, its mem-

bers) use of Twitter was the opinion that some tweets hold no immediately obvious scientific or professional benefit (these might be called "personal tweets" for lack of a better term; we reject the notion that these should be classified as "pointless babble"). Such tweets might include funny anecdotes about situations in one's lab, sardonic observations about difficult travel to a conference, or anxiety-laden outbursts about preparing a talk or paper.

Do these "personal tweets" have immediate functional benefit for the readers? Perhaps not. However, we will turn again to our scientific conference metaphor. An important secondary goal of any societal conference is to bring people – friends and colleagues with shared interests – together to talk, commiserate, swap stories, tell jokes, dine, drink, laugh, and simply enjoy each other's company; to build and maintain a community, in other words. We do not scorn these goings-on at conferences; no, these are things we enjoy, anticipate and value highly. "Personal tweets" help us accomplish the same goal: they help us establish a community of friends and peers, find our place within it, and develop a sense of belonging in what would otherwise be a sterile, lonely environment void of the critical human dimension. Science is not only about producing data: it is also about the people doing the work.

We must be inclusive and supportive of a broad suite of communication and community-building tools, and while not all tools are of use to all people, we should not judge quickly or too harshly. The future of entomology rests with enthusiastic, talented young students such as Derek, Paul, and Sarah. These students are using all the relevant communication tools at their disposal to learn about entomology, to share their love of and knowledge about entomology, and to make important, lasting connections with an ever-expanding community. Given that the Entomological Society of Canada needs new members to remain sustainable as we face an uncertain future, it is in our best interest to support and encourage the use of all available tools to communicate about our amazing discipline.

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Douglas Gordon Embree

(1924–2013)

Douglas Gordon Embree was born in Wolfville, Nova Scotia, in April 1924. Doug's father, Gordon, was a pharmacist and his mother, Helen, gave music lessons in piano and voice. In 1927, the family moved to Truro. When Doug was only 8, his father passed away. In addition to giving music lessons, Doug's mother was organist and choir director at their church in Truro, where Doug sang in the choir. Doug graduated from high school in 1942, joined the Royal Canadian Air Force and was called to duty early in 1943. After initial training in Guelph and Kingston, Ontario, Doug was stationed in Nassau, Bahamas, with Coastal Command. One of the duties that he carried out there was guarding the periphery of the residence of the Duke and Duchess of Windsor. From Nassau, Doug was sent to Northern Ireland and then to Scotland, where he served with the Commonwealth Squadron as a wireless air gunner. Doug was a proud member of the Royal Canadian Legion, Branch #4.

After the war, Doug enrolled in the forestry program at the University of New Brunswick (UNB) in Fredericton. In order to take some additional courses, he attended Mount Allison University in 1947–1948, where he met and married Audrey Smith. Together, they returned to UNB, and Doug graduated with his BScF in 1950, followed by a MScF in 1951 from the New York College of Forestry at Syracuse, New York. In that same year, Doug joined the Canadian Forestry Service as a technical officer in Debert, Nova Scotia. By this time, an invasive pest from Europe, the winter moth (*Operophtera brumata*), had become a significant problem in fruit orchards and hardwood forests in Nova Scotia and Prince Edward Island. Building on long-term studies carried out in Whytham, United Kingdom, Doug researched biological agents for the control of this pest for his PhD studies with Dr Frank Morris. A number of parasites were considered, but the tachinid fly, *Cyzenis albicans*, and the ichneumonid, *Agrypon flaveolatum*, both collected in France and Germany, proved to be the most effective. A number of releases of parasites collected from Europe were made between 1954 and 1963. After 1963, parasites collected locally were used. Winter moth populations throughout Nova Scotia and Prince Edward Island collapsed within 5 years of the first detection of *C. albicans* in host populations, and by 1966, winter moth populations across the Maritimes had collapsed. While Doug's field work was carried out in the Maritimes, his academic studies were completed at Ohio State University (OSU) in Columbus, and this often meant long absences from Audrey and their daughter Joanne. OSU awarded Doug his PhD in 1961.

With the closure of the Debert lab in 1964, Doug reluctantly moved, with his young family, to the Maritime Forest Research Centre (MFRC) in Fredericton. At around this time, he began working with the Christmas tree industry in Nova Scotia and, in preparation, spent a sabbatical with Dr Max McCormat, a Christmas tree specialist at the University of Vermont. Doug worked on the control of pests of Christmas trees using chemicals and, more importantly, biological control agents, including the virus (OrleNPV) of the white-marked tussock moth (*Orgyia leucostigma*) and *Olesicampe benefactor*, an ichneumonid parasite of the larch sawfly (*Pristiphora erichsonii*).

Doug was an innovator. He tried using explosive canister "pop-ups" and radio-controlled aircraft to apply chemical pesticides over Christmas tree plantations (reminiscent of his years in the air force). He initiated the "Balsam Fir Christmas Tree Updates" at UNB, which were meetings of Christmas tree growers where leading experts were brought in to discuss the most recent advances.

In the late 1970s, Doug took on administrative duties as the Director for Technical Services

at MFRC. He would sometimes refer to management meetings as the "Gong Show", but for those within his unit, he instituted meetings where he encouraged a free exchange of ideas and opinions. These were known as the "T.T.T." meetings, "Tuesdays at Two at the Tavern". Eventually, these caught the attention of someone in Ottawa who criticized Doug for not keeping adequate records of the minutes of these meetings.

During this time, Doug did not give up on research. In the early 1970s, the winter moth appeared in apple orchards and Garry oak stands in British Columbia. In 1979–1980, *C. albicans* and *A. flaveolatum* were released in British Columbia from parasitized larvae collected from an orchard at the Kentville Agricultural Station. To collect the parasitized larvae, Doug enlisted the help of staff from the station, Nova Scotia Lands and Forests, his and their families, and a Girl Guide troop from Falmouth. These releases had the desired effect in British Columbia and, in gratitude, Doug was given the keys and made an honorary citizen of the City of Victoria.

In 1987, excavations for the new Hugh John Flemming Forestry Complex, at the top of Regent Street in Fredericton, were begun. Doug was again reluctant to move to another location and he would tell people that, at night, he would fill in the holes the excavators had dug during the day. When the inevitability of the move became evident to Doug, he joined in and was instrumental in organizing the open house that would introduce the Fredericton community to the new home of the MFRC.

In 1989, Doug Embree and Doug Eidt officially retired but both returned to work one-third time. This opened up the two junior research scientist positions that Jon Sweeney and I filled that same year. Jon and I consider ourselves to be very fortunate to have benefitted from the experience and friendship of the "two Dougs" in the intervening years.

Doug Embree was an avid outdoorsman and athlete. He loved to ski and, when young, he sometimes barely made it off the ski trails in time to sing in his mother's choir at church on Sundays. He was instrumental in setting up and cutting trails at the alpine ski hill at Wentworth, Nova Scotia, and trail 15 on that hill is the named the "Embree Run" in recognition of his contribution. In Fredericton, Doug was a ski instructor and, while his daughter Joanne was on the downhill race team, he was involved with that activity at Crabbe Mountain ski hill in Lower Hainesville, New Brunswick. In 1994, Doug had the first of his three hip replacements and, as he was told by his physicians not to ski for the rest of that year, he snowshoed around Crabbe Mountain planning and later helping to clear cross-country ski trails.

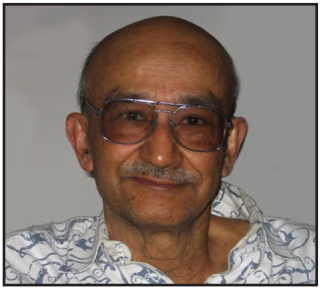
Doug, his close friends Jan Bonga, Bud Irving, Murray Neilson and others made frequent trips to hike and cross-country ski in the Gaspé region of Quebec and on Mount Katahdin in Maine. On his 65th birthday, Doug and Brian Kilpatrick hiked to the top of Tuckerman Ravine, Mount Washington, Vermont, and skied down the steep headwall, something Doug had always wanted to do.

Shortly after retiring, in an effort to "lose a little weight", Doug took up jogging. Not someone to do things in half measure, Doug ran in and completed the New York Marathon in 1992, 1993, and 1994. After completing his second marathon, he told a long-time friend of his achievement, to which his friend replied, "Well Doug, it is obvious that your legs have outlasted your brain!"

Doug had a great sense of humour and fun; he could take and dish out good-natured ribbing. He was a seemingly endless source of songs and stories. To a great many people, Doug was a good and loyal friend and he will be missed, especially by his wife Audrey and their daughter, Dr Joanne Embree.

Thank you to Audrey and Joanne Embree, Jan Bonga, Gerry Estabrooks, Ed Kettela, and Brian Kilpatrick for sharing their memories of Doug with me.

Christopher Lucarotti
Canadian Forest Service – Atlantic Forestry Centre
Fredericton



Ranendra Nath Sinha

(1930-2013)

Ranen Sinha was born in the village of Purbadhala, India, now Bangladesh, on 25 January 1930. He spent his early years in the country before moving to Calcutta in 1946 for a 2-year pre-medical course at the R.G. Kar Medical College followed by a Master's degree in Zoology and Comparative Anatomy at the University of Calcutta. He completed his PhD in 1956 on the taxonomy of bees, revising the genus *Osmia* at the Department of Entomology, University of Kansas, under Charles Michener. He did find time during his PhD to study the digestive tract of a stored-product insect, the red flour beetle, from a group he would later spend the rest of his professional life studying. Ranen joined the Zoology Department of McGill University in Montreal as a Post-doctoral Fellow of the National Research Council of Canada for 1 year, continuing his work on histology and physiology of the insect gut using several stored-product insects.

He accepted a position as Research Officer at the Agriculture Canada Research Station in Winnipeg in 1957 as an ecologist working on stored-products. His work involved determining the causes and strategies for management of hot spots associated with infestations of stored cereal grains by insects, mites and microflora in the Prairie provinces. His research was often done in collaboration with students, post-doctoral fellows and other researchers. Ranen was appointed as an Honorary Professor at the Department of Entomology, University of Manitoba, in 1961, where he also developed a long-term collaboration with Bill Muir from the Department of Biosystems Engineering. He spent 1 year, 1963, in Japan working with Professor Uchida of Kyoto University. He developed an ecosystem concept for the protection of stored grain and oilseeds by identifying, detailing, and controlling biotic and abiotic factors that cause deterioration. This internationally acclaimed work has now been implemented in many countries. His expertise in statistical methods using principal component, discriminate function, canonical correlation and likelihood factors analyses has been used to solve practical problems.

He sought excellence in all he did, and received many awards and recognition. He received the Entomological Society of Canada Gold Medal in 1985 for outstanding achievement in Canadian entomology, the first Manitoban to receive this honour. In 1991, he was awarded the Sigma Xi Senior Scientist award by the Manitoba Chapter of Sigma Xi. He published over 215 papers in scientific journals around the world, many chapters on grain storage, and 2 co-authored books. He presented at scientific conferences around the world, and consulted with other countries seeking to protect their grain reserves.

Ranen expected the same high standards from his technicians and students, but at the same time encouraged and supported their betterment through further education and career development. He also emphasized that family came first and was top priority, taking special interest in those he worked with and their families; he was extremely hospitable in this regard. Ranen retired from Agriculture and Agri-Food Canada in 1993.

Ranen was a lifelong practiser of yoga, founding the Yoga Society of Manitoba and in retirement he expanded his teaching of yoga. He died peacefully on 14 February 2013, surrounded by family, leaving his wife Luella, son Jay (Chantal, grandson Jyoti) and daughter Mala.

Noel White, Colin Demianyk, and Paul Fields
Winnipeg

Glenn Blakely Wiggins

(1927-2013)

Glenn Wiggins — Curator Emeritus of Entomology at the Royal Ontario Museum, and Professor Emeritus in the Department of Ecology and Evolutionary Biology at the University of Toronto — died in his sleep on 7 July 2013.

Glenn began his career at the ROM in 1952 and was cross appointed with the University of Toronto Zoology Department beginning in 1968. His research, which continued unabated since his retirement from the ROM in 1992, dealt with aquatic insects, especially the biosystematics of caddisflies (order Trichoptera) on which he published 4 books and more than 100 articles in scientific journals and books. During his curatorial tenure, he conducted an extensive program of field studies through much of North America, as well as overseas, building for the ROM one of the major research collections of Trichoptera in the world. He was also actively engaged in the educational outreach programs of the Museum through organization of numerous public lectures and gallery displays. Permanent exhibits of live insects and recordings of insect songs were introduced into the Museum in a new Gallery of Arthropods, which he initiated in the 1970s. He was instrumental in the establishment of two new curatorial departments in the Museum – Botany in 1969 and Invertebrate Zoology in 1979. In 1968 he organized a successful application to the National Research Council of Canada for a Negotiated Development Grant to establish a new laboratory of analytical and molecular systematics in the Museum. Over the years he supervised four MSc students, eight PhD students and four post-doctoral fellows.

In 1988-1991 he served on the NSERC Grant Selection Committee for Evolution and Ecology. He presented numerous invitational lectures on aquatic entomology at various professional conferences and universities, and was a visiting professor conducting field courses in aquatic entomology at biological stations of several universities.

Glenn was an elected member of the Governing Board of the Entomological Society of Canada from 1979 to 1983, and served as President of that Society in 1981-82. He was a founding member of the Society's Biological Survey of Canada (Terrestrial Arthropods), serving on the Scientific Committee of the Survey from 1976 to 1991. As President of the ESC, he became a member of the Biological Council of Canada in 1981 and was elected Vice-President, remaining on the BCC until 1985. He was appointed a Fellow of the ESC in 1982 for major contributions to Entomology. He received the 1992 Gold Medal of the ESC for outstanding achievement. In 2006 he was elected an Honorary Member of the Entomological Society of Ontario.

In terms of his scientific legacy, Glenn will be best remembered for his studies of larval caddisflies, which were beautifully summarized in his books *Larvae of the North American caddisfly genera (Trichoptera)* and *Caddisflies: the underwater architects*. Glenn's last publication — *Biological notes on an old farm: exploring common things in the kingdoms of life* — encourages us to stop and look at the smaller organisms such as plants, fungi, insects and bacteria, which play important roles in sustaining life on Earth. This book received the Silver Medal for science in the Independent Publisher Book Awards, 2010.

Glenn established an endowment fund to support entomological research at the ROM — especially that focusing on Trichoptera including fieldwork, curation and laboratory study of the collections, and all aspects of both scientific and interpretive publications. Donations in his memory may be sent to: ROM Foundation, "Wiggins Entomology Trust Fund", 100 Queen's Park, Toronto, Ontario, M5S 2C6. Phone 416-586-8012, www.rom.on.ca/support-us

Glenn Wiggins was truly a giant in his field as evinced by the eight caddisfly species named in his honour by colleagues throughout the world. He will be sorely missed.

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Wiggins, G.B. 2004. Caddisflies: the underwater architects. University of Toronto Press, Toronto.
Wiggins, G.B. 2009. Biological notes on an old farm: exploring common things in the kingdoms of life. Royal Ontario Museum, Toronto.

Douglas C. Currie
Toronto

Meeting announcements / Réunions futures

Seventh International Symposium on Molecular Insect Science
Amsterdam, The Netherlands, 13-16 July 2014
http://www.molecularinsectscience.com/
XVII Congress for the International Union for the Study of Social Insects
Cairns, Australia, 13-18 July 2014
http://www.iussi2014.com/
ECE X (Tenth European Congress of Entomology)
York, UK, 3-8 August 2014
www.ece2014.com
7th International Conference on the Biology of Butterflies
Turku, Finland, 11-14 August 2014
http://nymphalidae.utu.fi/icbb2014/
XXV International Congress of Entomology (Entomology without Borders)
Orlando, Florida, 25-30 September 2016
http://ice2016orlando.org/

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.

Highlights from the Governing Board Meetings in Guelph

Alec McClay, Secretary

President's Report

Activities and issues dealt with over the year included the review of the Society's mission and vision, the work of the Ad Hoc Committee that prepared for the Society's upcoming transition to incorporation under the Canada Not-for-profit Corporations Act, and the unexpected shortfall in revenue from Cambridge University Press, which required a major review of the Society's revenue and expenses to prepare for the 2014 budget. Some revisions need to be made to the way in which the Society administers its Scholarship fund, specifically the need to appoint a Board of Trustees annually. The President discussed possibilities for obtaining outside financial or legal expertise to assist the Society, and pointed out the need for Society officers and directors who are federal employees to comply with the Federal Government's conflict of interest guidelines while conducting Society business.

Transition to Not-for-profit Corporations Act

An Ad Hoc Committee has developed the draft Articles of Continuance and new By-Laws which will need to be submitted to Industry Canada for the Society to continue as a Corporation under the Canada Not-for-profit Corporations Act.

Ad Hoc Committee on Mission and Future

This Committee, chaired by Michel Cusson, developed the following new Vision and Mission Statements, which were adopted by the Board:

Vision Statement

The Entomological Society of Canada / La Société d'entomologie du Canada (ESC/SEC) will be recognized as the pre-eminent organization in Canada for promoting and facilitating entomological research and collaboration, and for disseminating entomological knowledge in Canada and the rest of the world for the benefit of society.

Mission Statement

The ESC/SEC pursues several goals:

Enhances graduate student education through grants and scholarships, and greater participation and recognition in annual conferences and societal affairs;

Oversees the publication of peer-reviewed scientific journals reporting original entomological research, and other publications of benefit to its members and Canadians;

Develops and promotes the use of electronic media for the dissemination of entomological knowledge and communication among ESC/SEC members and others around the world;

Fosters networking and collaboration among Canadian entomologists through the organization of an annual scientific conference;

Promotes career development of its members;

Raises awareness and promotes education about insects and entomological issues for the general public;

Develops common names for Canadian insects in both official languages;

Serves as a hub for communication about entomological issues among amateur and professional entomologists and the general public;

Liaises with regional affiliated entomological societies across Canada.

Entomological Society of America

Alvin Simmons, Organizing Committee Co-Chair for the International Congress of Entomol-

ogy (ICE) in Orlando, Florida, 2016, gave a presentation on plans for the Congress, thanked the Society for their support for the bid, and discussed timing options for associated Society meetings and activities. David Gammel, Executive Director, Entomological Society of America, presented possible options for joint meetings with the Society in Vancouver in 2018 and 2022.

Financial Situation

The Society has entered a difficult period financially due to a drastic decrease in expected revenue from Cambridge University Press, which has put the Society in the position of having to continue operations with approximately $30 – $40,000 per year less than anticipated. For 2013, CUP has agreed to pay the guaranteed revenue portion of the royalties as per the forecast presented in the original contract; however, going forward into 2014 we can expect revenue from CUP to hover around $30,000 per year for the next few years. Given this new fiscal reality, the Society must devise a strategy to significantly reduce its current level of expenditure and consider options to possibly increase revenue. The Finance Committee has conducted a review and analysis of Society finances based on a draft of the budget for 2014. The Treasurer, Chair of Financial Committee and President are in the process of exploring the availability of third party expert advice regarding the mid- and long-term sustainability of the Society.

Headquarters Building

The Ad Hoc Committee on Headquarters provided updated estimates of the potential return from sale of the HQ building and of renting suitable office space in Ottawa. President Rebecca Hallett will appoint an Ad Hoc Committee on Headquarters Operations to make final recommendations.

Scientific Editor

The Canadian Entomologist is in a healthy position, receiving a consistent number of manuscripts, and there are enough papers in the production queue to take us to at least Volume 146 Issue 2 (Spring, 2014). *TCE*'s rejection rate over the past year stands at 57% and the impact factor for 2012 was 0.901. This is an increase from 0.848 in 2011. Workflow with Subject Editors and Cambridge University Press is virtually seamless, but there remain two significant delays in processing manuscripts: French translations of abstracts and technical editing. Chris Buddle will be stepping down as Editor-in-Chief by the autumn of 2014. K. Floate reported that the Society will receive a 50% share of the charge for hybrid open access articles published in *TCE*, after a deduction of a 20% agent fee by CUP. Thus, an author publication charge of $2,500 for open access would return $1,000 to the Society.

Achievement Awards

The guidelines for the C. Gordon Hewitt Award have been revised to provide that the Award is restricted to persons who have successfully defended their doctoral thesis in the 12 years ending on December 31 of the year in which the Award is awarded.

Insect Common Names

The Common Names Committee reported on a pilot study with the National Status of Species Working Group at Environment Canada, which developed common names for all 797 bee species in Canada. Reviewers questioned the utility of developing common names for all species within a particular taxon. The Board recommended that the Society should continue to adopt common names by our existing process and that it does not endorse the blanket creation of common names for entire taxonomic groups.

Website

The website has had more visits and page views than ever before (almost 4 million page views in one year), partly because of the hosting of the Agriculture and Agri-Food Canada Entomological Monographs and the Biological Control Programmes in Canada series. Online balloting for Society elections is now implemented on the website. Dicky Yu will replace Rick West as webmaster after the 2013 AGM. The Society will upgrade the bandwidth of our web hosting account in order to continue providing the AAFC monographs.

Blog

A total of 40 articles were posted between November 1, 2012 and October 1, 2013 and the blog had 10,153 visits during that time. The blog administrators encourage all Canadian entomologists to submit Plain Language Summaries of the papers they publish. Blog Administrator Crystal Ernst will step down as of the 2013 JAM, and will be replaced by Sean McCann.

Publications Committee

The Canadian Entomologist has adopted a hybrid open access model which allows authors to publish in *TCE* at no charge, or to make their articles open access if they wish to pay an author publication charge. Implementation is expected early in 2014. Supplies of the *Diseases and Pests of Vegetable Crops in Canada* book are now exhausted. The Canadian Phytopathological Society will make the book freely available as PDFs (French and English) from their website as of spring 2014. The Committee has recommended that this requirement for French abstracts in *TCE* be dropped. This recommendation will be discussed by the *TCE* Editorial Board. Kevin Floate is stepping down as Chair of the Committee after the 2013 JAM.

Annual Meeting Committee

Murray Isman has agreed to function as the designated Society representative to the ICE Organizing Committee and may be considered as the General Chair of the 2016 ESC Annual meeting. There were a number of issues with the registration process for the 2013 JAM, , including disconnects between PayPal, the membership database and the registration system. The Web Content Committee will examine options for handling online registration in collaboration with the Ad Hoc Committee on Headquarters Operations.

Membership

The total membership for 2013 is 509 and is in line with the past trend of membership of approximately 500. A proposal for an early career/transitional membership category is under development and was referred back to the Membership Committee by the Board for clarification and simplification.

Bulletin

Production of the printed version of the *Bulletin* will cease at the end of 2013. Julia Mlynarek's term as Assistant Editor will come to an end with the December 2013 issue, and Donna Giberson has volunteered to fill the position.

Science Policy and Education

Two letters were sent to the Minister of Agriculture Gerry Ritz requesting that travel restrictions for government scientists be relaxed so they can attend national meetings. One was part of a joint effort organized by Plant Canada and with 13 signatories, and the other was sent specifically on behalf of the Society. Both letters received identical responses. No federal employees participated in the drafting and sending of these letters.

Student Affairs

The Graduate Student Symposium was replaced by a Graduate Student Showcase at the 2013 JAM, scheduled with no concurrent sessions. The Committee worked with the Membership Committee on a proposal for an early career membership category and developed a vision for student led activities at ICE 2016.

Marketing/Fundraising

The Committee developed a plan for a series of workshops focused on the training of "Highly-Qualified Personnel (DHQP)" to be held at the JAM that would attract support from sponsors. This event is being trialled at the 2013 Guelph JAM, with workshops on "Grant Writing: Success with Preparation", "Bringing Social Media into Your Lab", and "Developing a Teaching Dossier for Entomology".

Biological Survey

The BSC continues to thrive and membership, support, and activities have increased over the last year. The Biological Survey Foundation (BSF) has been dissolved and arrangements are underway to transfer BSF funds to the BSC. The BSC has received funds from the Government of Newfoundland and Labrador to support the Arthropods of Newfoundland and Labrador Project and from Environment Canada to develop updated species estimates for plants, animals, and fungi in Canada, in support of the Biota of Canada Project.

Minutes of the 63rd Annual General Meeting

Delta Guelph Hotel and Conference Centre, Guelph, Ontario

22 October 2013

President R. De Clerck-Floate called the meeting to order at 5:10 pm with 69 members present.

1. **Notice of Meeting.** Notices of the meeting were published in the March and June 2013 issues of the *Bulletin* (Vol. 45) and on the ESC website.

2. **Additions to the Agenda and Approval of the Agenda.** N. Holliday moved and C. Vincent seconded that the agenda be accepted. **Carried.**

3. **Minutes of the 62nd Annual General Meeting.** Minutes of the 62nd Annual General Meeting were posted on the web site and published in the December 2012 issue of the *Bulletin* (Vol. 44). J. McNeil moved and P. Mackay seconded that the minutes be accepted. **Carried.**

4. **Deceased Members of the Entomological Community.** A minute of silence was observed in memory of the following members of the entomological community who passed away during the past year: Richard (Dick) Vockeroth, Donald W. Webb, Fumio Matsumura, Gordon Pritchard, Richard C.B. Hartland-Rowe, Ranendra (Ron) Sinha, Douglas G. Embree, Glenn B. Wiggins, George Green, and Bill Preston.

5. **Business Arising from the Minutes.** There was no business arising from the minutes.

6. **Report from the Governing Board.** President R. De Clerck-Floate presented a report on behalf of the Governing Board and gave an update on progress during the past year and plans for the coming year. Particular areas of activity were the preparation for the Society's transition to the Canada Not-for-profit Corporations Act and the financial challenges resulting from lower-than-expected revenues

from Cambridge University Press, as well as joint activities with the Entomological Society of America.

7. **Auditor's Report.** S. Brooks presented the Auditor's Report for 2012. The report was posted on the web site and summarized in the September 2013 issue of the *Bulletin*. S. Brooks moved and P. Mason seconded that the Auditor's report be accepted. **Carried.**

8. **Elections Committee Report.** Secretary A. McClay read the Elections Committee report. Terry Wheeler was elected as Second Vice-President. Kirk Hillier was elected Director-at-Large.

9. **Installation of Officers.** Terry Wheeler, Second Vice-President, was escorted to the table by Michel Cusson. R. De Clerck-Floate, outgoing President, then congratulated Rebecca Hallett as incoming President of the Entomological Society of Canada. The new President assumed office and thanked the members for the honour of being elected President.

10. **Presentation of Service Awards.** President Rebecca Hallett thanked R. De Clerck-Floate for her service to the Society and presented her with a Service Award. The President also presented a Service Award to R. West for his service as Webmaster.

11. **Appointment of Auditor.** S. Brooks moved and R. Lamb seconded that Bouris, Wilson LLP be appointed as Auditor for 2013. **Carried**. **Action: S. Brooks**.

12. **New Business.**

12.1. **Canada Not-for-profit Corporations Act transition.** G. Gibson moved and K. Floate seconded the following SPECIAL RESOLUTION:

Continuing the Entomological Society of Canada ("the Corporation") under the provisions of the Canada Not-for-profit Corporations Act and authorizing the directors to apply for a Certificate of Continuance.

WHEREAS the Corporation was incorporated under Part II of the Canada Corporations Act by Letters Patent dated the 2nd day of January, 1956; and

WHEREAS it is considered to be in the best interests of the Corporation that it be continued under the Canada Not-for-profit Corporations Act (NFP Act) pursuant to section 297 of the NFP Act;

BE IT RESOLVED AS A SPECIAL RESOLUTION THAT:

1. The directors of the Corporation are authorized and directed to make an application under Section 297 of the NFP Act to the Director appointed under the NFP Act for a Certificate of Continuance of the Corporation;

2. The Articles of Continuance (transition) of the Corporation, which have been submitted to this meeting and are annexed to these minutes as Schedule A, are approved;

3. The general operating by-law of the Corporation is repealed effective on the date that the Corporation continues under the NFP Act and the new general operating by-law which has been submitted to this meeting and is annexed to these minutes as Schedule B is approved and will be effective on the same date.

4. Any one of the officers and directors of the Corporation is authorized to take all such actions and execute and deliver all such documentation, including the annexed Articles of Continuance (transition), the notice of registered office and of directors in the forms fixed by the Director, which are necessary or desirable for the implementation of this resolution.

Votes in favour 69, votes against 0. **Carried**. **Action:** A. McClay to file the application with Industry Canada.

12.2. **Motion: Amendment of Standing Rule II (Dues).** S. Brooks moved and R. Lamb seconded that Standing Rule II be amended as follows:

Sections 1, 2, and 3 are deleted and replaced by:

1. Annual dues for Regular Membership shall be one hundred dollars ($100.00) in Canada and one hundred and ten dollars ($110.00 Cdn), or equivalent in US dollars, for members outside

of Canada, plus applicable taxes. Regular Membership includes online access to *The Canadian Entomologist*.

Annual dues for Student Membership shall be twenty-five dollars ($25.00) in Canada and thirty dollars ($30.00), or equivalent in US dollars, for student members outside of Canada, plus applicable taxes. Student Membership does not include online access to *The Canadian Entomologist*.

Membership dues for Emeritus Members are waived. Emeritus Membership does not include online access to *The Canadian Entomologist*.

For Student and Emeritus Members, the Board may prescribe charges, in addition to membership dues, for online access to *The Canadian Entomologist*. The Board may prescribe an additional charge to all Members for a print subscription in addition to online access.

Section 4 is renumbered as Section 5.

Carried. **Action:** W. Riel, S. Brooks, D. Yu.

13. **Resolutions on behalf of the Entomological Society of Canada.**

13.1. **Thanks to the Organizing Committee.**

The following resolution was read by N. Holliday and accepted with a round of applause:

Whereas the Entomological Society of Canada has met jointly with the Entomological Society of Ontario at the Delta Guelph Hotel and Conference Centre, Guelph, Ontario; and

Whereas there has been a full and interesting meeting of lectures, symposia, papers, and posters; and

Whereas the meeting has been planned with care and concern for those attending; and

Whereas there has been ample opportunity for social interaction and visits to Guelph and surrounding areas;

Be it resolved that the Entomological Society of Canada express its sincere thanks to the Organizing Committee for their hard work and skill in arranging a worthwhile and entertaining program; and

Be it further resolved that the Society thank the Organizing Committee and meeting contributors for their generous assistance; and

Be it further resolved that the Society express its thanks to the Management and Staff of the Delta Guelph Hotel and Conference Centre for their courteous assistance during the Meeting. **Action: A. McClay**

14. **Notice of 64th Annual General Meeting.**

The 64th Annual General Meeting will be held on 30 September 2014, with the Entomological Society of Saskatchewan, at the Radisson Hotel in Saskatoon, Saskatchewan. Further notices for the meeting will be published in the March and June 2014 issues of the *Bulletin* (Vol. 46) and on the ESC website.

15. **Adjournment.** The Annual General Meeting adjourned at 6:10 pm following a motion by B. Mori.

Executive Meeting - Call for Agenda Items

The next Interim Meeting of the ESC Executive will take place by conference call on 28 January 2014. If members have any items they wish to be discussed by the Executive, please send them to the Secretary, Alec McClay, (secretary@esc-sec.ca), by 14 January 2014.

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

La prochaine réunion intérim du conseil exécutif de la SEC se tiendra par appel conférence le 28 janvier 2014. Si des membres aimeraient ajouter des points à l'ordre du jour pour discussion par le conseil exécutif, merci de les envoyer au secrétaire, Alec McClay (secretary@esc-sec.ca), au plus tard le 14 janvier 2014.

Call for Nominees: ESC Achievement Awards

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

Gold Medal and C. Gordon Hewitt Award

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

Nominations can only be made by members of the ESC, and signed by the nominator and by at least one seconder (also to be a member of the ESC).

Nominators should include the following information for both awards: 1. The name and address of the nominee(s); 2. A statement of relevant achievements (3-5 pages) which may include, but is not limited to, the following: outline of research areas, particularly major contributions; number of articles in refereed journals, books, book chapters, patents; editorial activities; teaching history, numbers of graduate students, teaching awards; value of grants; involvement in ESC; active involvement and/or memberships in other Societies; entomological extension/community involve-

Appel à candidature : Prix d'excellence de la SEC

Connaissez-vous un entomologiste respecté qui mérite une reconnaissance pour ses contributions remarquables dans son domaine au Canada? Cette personne est-elle un leader dans son domaine par son succès en publications, brevets, travail éditorial et/ou subventions, enseignement et mentorat d'étudiants, ou même par du bénévolat actif dans la SEC et d'autres sociétés/organisations? Si oui, considérez de la nominer pour un de nos prix d'excellence de la Société. N'hésitez pas à contacter le président du comité des prix d'excellence, Staffan Lindgren (Staffan.Lindgren@unbc.ca), si vous avez des questions concernant l'éligibilité ou le processus de nomination.

Médaille d'or et prix C. Gordon Hewitt

Ces deux prix récompensent les contributions remarquables en entomologie au Canada par un individu, mais les nominés pour le prix C. Gordon Hewitt doivent avoir défendu leur thèse de doctorat avec succès dans les 12 ans se terminant le 31 décembre de l'année durant laquelle le prix est remis. Les congés parentaux, de compassion ou de maladie ne sont pas comptés dans cette période de 12 ans; cependant, ces périodes doivent être identifiés dans la lettre de la personne qui soumet la candidature.

Les nominations ne peuvent être faites que par des membres de la SEC, et doivent être signées par la personne qui soumet la nomination et par au moins un personne qui appui la nomination (qui doit aussi être membre de la SEC).

Les personnes qui soumettent la nomination doivent inclure les informations suivantes pour les deux prix : 1. Le nom et l'adresse du nominé ; 2. Un énoncé sur les accomplissements pertinents (3-5 pages) qui peut inclure, mais ne se limite pas à : domaine de recherche, contributions majeures particulières, nombre d'articles dans des revues avec évaluation, livres, chapitres de livres, brevets, activités éditoriales, histoire d'enseignement, nombre d'étudiants gradués, prix d'enseignement, va-

ment; organizing of symposia, meetings; 3. A current curriculum vitae; and 4. The name of the nominator and at least one seconder.

The documentation should stress the particular achievement or achievements to be considered and not merely the general competences of the nominee. Other seconders may merely state their support, without documentation, in a letter of endorsement of the nomination. The Committee shall not prepare the documentation nor conduct research connected with it.

Please send nominations either by e-mail to the Chair of the Achievement Awards Committee, Staffan Lindgren (Staffan.Lindgren@unbc.ca), or to the ESC office in an envelope marked "Confidential" postmarked no later than **25 February 2014.**

Honorary Members of the Entomological Society of Canada

An Honorary Member is deemed to have made an outstanding contribution to the advancement of entomology, and may be an Active Member or former Active Member of the Society at the time of nomination. Collectively, Honorary Members are not to comprise more than 10 members or 1% of the active membership of the Society. Nominations should be supported by at least five Active or Special Members of the Society, and are to be sent either by e-mail to the Chair of the Achievement Awards Committee, Staffan Lindgren (Staffan.Lindgren@unbc.ca), or to the ESC office in an envelope marked "Confidential" postmarked no later than **25 February 2014.**

Fellows of the Entomological Society of Canada

Fellows are deemed to have made a major contribution to entomology, and are to be Active Members of the Society at the time of nomination. Their contribution may be in any area (e.g., research, teaching, application or administration), and may be judged on the basis of contribution to and stimulation of the work of others, as well as by direct personal effort. Collectively, Fellows may not comprise more than 10% of the active membership of

leur des subventions, implication dans la SEC, implication active et/ou adhésion à d'autres sociétés, implication dans la communauté entomologique, organisation de symposiums et réunions ; 3. Un curriculum vitae à jour ; et 4. Le nom de la personne qui soumet la nomination et au moins une personne qui l'appuie.

La documentation devrait mettre en évidence le ou les accomplissements particuliers à considérer et pas seulement les compétences générales du nominé. D'autres personnes peuvent aussi manifester leur appui, sans documentation, dans une lettre de soutien de la nomination. Le comité ne préparera aucune documentation et ne fera aucune recherche en lien avec la nomination.

Merci d'envoyer vos nominations par courriel au président des prix d'excellence, Staffan Lindgren (Staffan.Lindgren@unbc.ca), ou au bureau de la SEC dans une enveloppe marquée « Confidentiel » au plus tard le **25 février 2014**, le cachet de la poste faisant foi.

Membres honoraires de la Société d'entomologie du Canada

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

Collectivement, les membres honoraires ne peuvent pas totaliser plus de 10 membres ou 1% des membres actifs de la Société. Les nominations doivent être supportées par au moins cinq membres actifs ou spéciaux de la Société, et doivent être envoyées par courriel au président des prix d'excellence, Staffan Lindgren (Staffan.Lindgren@unbc.ca), ou au bureau de la SEC dans une enveloppe marquée « Confidentiel » au plus tard le **25 février 2014**, le cachet de la poste faisant foi.

Fiduciaires de la Société d'entomologie du Canada

Les fiduciaires sont considérés comme ayant apporté une contribution majeure à l'entomologie et doivent être des membres actifs de la Société au moment de la nomination. Leur contribution peut se situer dans

the Society. Nominations should be supported by at least four Active or Special Members of the Society, and are to be sent either by e-mail to the Chair of the Achievement Awards Committee, Staffan Lindgren (Staffan.Lindgren@unbc.ca), or to the ESC office in an envelope marked "Confidential" postmarked no later than **25 February 2014.**

Wanted: Applicants for the Bert & John Carr Award

The Bert and John Carr Award was created in 2010 (see ESC *Bulletin*, June 2010 [p. 102] or September 2010 [p. 170]) to support research activities by individuals who study insect faunistics, or the natural history and taxonomy of Canada's insect fauna. Preference is given to applications by amateurs, but those by students and others will be considered. Applications should consist of: 1.The name and address of the applicant; 2. A statement of the research activity to be undertaken, including a cost estimate of up to $500; and 3. A current curriculum vitae.

Applications are to be sent either by e-mail to the Chair of the Achievement Awards Committee, Staffan Lindgren (Staffan.Lindgren@unbc.ca), or to the ESC office in an envelope marked "Confidential" postmarked no later than **25 February 2014.**

n'importe quel domaine (e.g. recherche, enseignement, application ou administration), et ils seront jugés selon leur contribution et la stimulation au travail des autres, ainsi que par leurs efforts personnels.

Collectivement, les fiduciaires ne peuvent pas totaliser plus de 10% des membres actifs de la Société. Les nominations doivent être supportées par au moins quatre membres actifs ou spéciaux de la Société et doivent être envoyées par courriel au président des prix d'excellence, Staffan Lindgren (Staffan.Lindgren@unbc.ca), ou au bureau de la SEC dans une enveloppe marquée « Confidentiel » au plus tard le **25 février 2014**, le cachet de la poste faisant foi.

Recherchés : Candidats pour le prix Bert & John Carr

Le prix Bert et John Carr a été créé en 2010 (voir le Bulletin de la SEC, juin 2010 p.102, ou septembre 2010 p. 170) afin de soutenir des activités de recherche par des individus qui étudient la faunistique des insectes, ou l'histoire naturelle et la taxonomie de la faune entomologique du Canada. La préférence sera donnée aux candidatures provenant d'amateurs, mais les candidatures d'étudiants ou d'autres individus seront considérées. Les candidatures devront inclure : 1. Le nom et l'adresse du candidat ; 2. Un énoncé sur les activités de recherche devant être entreprises par le candidat, dont une estimation des coûts jusqu'à concurrence de 500$; et 3. Un curriculum vitae à jour.

Les candidatures doivent être envoyées soit par courriel au président du comité des prix d'excellence, Staffan Lindgren (Staffan.Lindgren@unbc.ca), soit au bureau de la SEC dans une enveloppe marquée « Confidentiel » au plus tard le **25 février 2014**, le cachet de la poste faisant foi.

Honours, Awards and Good Times at JAM 2013

R. West

Steve Marshall receives the Gold Medal from Rebecca Hallett.

R. West

Rebecca Hallett presents Chris Cutler with the C.G. Hewitt Award.

R. West

Alan Macnaughton, recipient of the Norman Criddle Award.

R. West

Past President Rose De Clerck-Floate receives her Service Award from Rebecca Hallett.

P. Bouchard

Former Webmaster Rick West receiving his Service Award from Rebecca Hallett.

R. West

The Secretary and 2013 Executive: (from left) Alec McClay (Secretary), Rose De Clerck-Floate (President), Rebecca Hallett (1st Vice-President), Staffan Lindgren (2nd Vice-President), Michel Cusson (Past President).

R. West

Local organisers and some special guests: (from left) Gary Umphrey (General Chair), Morgan Jackson (Local Arrangements Chair), Steve Marshall (Gold Medalist), Cynthia Scott-Dupree (General Vice-Chair and Treasurer), Brian Brown (Plenary Speaker), Owain Edwards (Plenary Speaker), Jeff Skevington (President, Ent. Soc. Ontario), Rose De Clerck-Floate (President, Ent. Soc. Canada), Rebecca Hallett (Scientific Program Co-Chair), Joel Gibson (Scientific Program Co-Chair), Angela Gradish (Registration), Laura Timms (Plenary Speaker), Alastair Summerlee (President, University of Guelph).

R. West

Plenary speakers and photography workshop/after-dinner speaker: (from left) Brian Brown, Laura Timms, Alex Wild, Owain Edwards

R. De Clerck-Floate

An historic moment – signing of the Articles of Transition documents, with Rebecca Hallett and Gary Gibson.

Seeking a Treasurer

The Entomological Society of Canada is looking to fill the position of Treasurer, beginning in Fall 2014. Please note that the Treasurer is considered an officer of the Society and is expected to attend the annual meeting of the Governing Board. The duties include, but are not limited to, custody of the Society's funds, reporting on the finances of the Society when required, submitting a budget to the first Board Meeting, submitting an audited financial statement at the end of each fiscal year to the membership by posting it in the member's area of the Society's website, overseeing the day to day business operations of the ESC, and *ex officio* membership on the ESC Headquarters and Finance Committees. Previous experience with financial reporting and/or accounting would be an advantage, as is a general knowledge of the affairs of the Society. Please express your interest in the position to the President, Rebecca Hallett, by **31 May 2014** (rhallett@uoguelph.ca). The final selection will be made by an ad hoc committee convened by the President.

New *Bulletin* Assistant Editor

We are pleased to announce that Donna Giberson (University of Prince Edward Island) has been appointed Assistant Editor of the *Bulletin*, beginning with the March 2014 issue. Donna, who volunteered for the position, comes with experience of Adobe InDesign software, gained while Editor of the *Newsletter of the Biological Survey of Canada*.

Digitisation of Diseases and Pests of Vegetable Crops in Canada (DPVCC)

The Canadian Phytopathological Society (CPS) has decided to scan the English version of the DPVCC and make both the English and French versions available for "free download" on the CPS website, by spring 2014.

No printed versions of the books will be available. Nor will the books be available for sale on CD.

Updated versions of the book, by chapter or crop group, are underway, with the participation of individual Canadian entomologists, and will be available for sale, on the CPS website, in future years. We hope to have the first new installments available in 2014-15.

Please refer all future queries to the CPS website: http://phytopath.ca/publications.shtml

The above book is but an example of a number of documents available online at the ESC website via http://www.esc-sec.ca/pubover.php. These include:

- **Canadian Journal of Arthropod Identification** – A web-based journal contributing to the taxonomy and identification of Canadian arthropods
- **Memoirs of the Entomological Society of Canada** – major monographs supplemental to The Canadian Entomologist and published from 1955-1997
- **Agriculture and Agri-Food Entomological Monographs** – monographs, authored by employees of Agriculture and Agri-Food Canada
- **Biological Control Programmes in Canada series** – Volumes 1-3 of the series documenting the history of biocontrol research in Canada since 1910.

Graduate Student Opportunity in Entomology in the Department of Biological Sciences, University of Alberta

Principal Investigators: Drs Maya Evenden http://www.biology.ualberta.ca/faculty/maya_evenden/ and **Felix Sperling** http://www.biology.ualberta.ca/faculty/felix_sperling/

Project title: **Molecular Correlates for Dispersal of the Mountain Pine Beetle** Highly qualified potential graduate students are invited to join the Department of Biological Sciences at the University of Alberta (http://www.biology.ualberta.ca/) in the labs of Drs Maya Evenden and Felix Sperling.

Project: This project is part of a large multi-institutional, multi-investigator study: "*The NSERC TRIA Network: Turning risk into action for the Mountain Pine Beetle (MPB) epidemic*" (http://www.thetriaproject.ca/). with the main goal to fill key knowledge gaps of the MPB-pine-fungal associate system that limits our ability to monitor, assess, and predict MPB risk to Canada's forests. Within this overall objective, the graduate student will **establish molecular correlates for dispersal in the MPB**.

Objective. *Complete a genome-wide-association study of dispersal traits to identify genetic regions that contribute to observed dispersal phenotypes.*

MPB dispersal is one of the key unknowns limiting our ability to predict risk of spread. A better understanding of MPB dispersal will determine if populations at the leading edge of the MPB invasion are more prone to dispersal. This study will provide invaluable data for spread risk modeling and assessment.

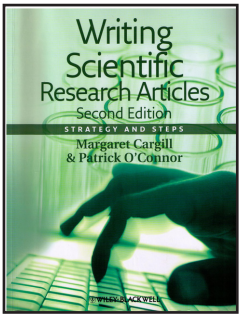
The student will use computer-linked flight mills to generate dispersal phenotypes of beetles that will subsequently be used for genome wide association studies (GWAS) to discover genetic variation that underlies these phenotypes. Genetic variation associated with dispersal phenotypes will then be spatially referenced using range-wide genotypic data to provide a landscape level assessment of dispersal capacity along MPB expansion axes.

Applicants must have an Honours degree or higher (e.g. MSc) relevant to biology, training and experience. We seek students with experience in molecular techniques (esp. PCR, DNA sequencing, SNP typing), bioinformatics (next-gen sequencing, genome assembly, etc.), phylogenetics, population genetics and/or quantitative genetics. Field experience and a background in entomology would be an asset. Applicants should have a high GPA (3.5+ or minimum A-), be highly competent in quantitative analyses, and possess excellent written and oral communication skills in English.

The position provides full funding for MSc (2.3 years) or PhD (5 years) to qualified applicants who meet the criteria for a Graduate Teaching Assistantship (see http://www.biology.ualberta.ca/programs/graduate/).

Application process: Applicants must first send a cover letter outlining their relevant background and research interests, their CV, and the names of 2-3 potential references to mevenden@ualberta.ca and felix.sperling@ualberta.ca. Interviews and formal invitation to apply to the graduate program in Biological Sciences may then follow for those who meet the criteria. For Graduate Program Information see: http://www.biology.ualberta.ca/programs/graduate/

Writing Scientific Research Articles, second edition. Cargill, M., & O'Conner, P. 2013. Wiley-Blackwell, Chichester, U.K. 223 pp. ISBN 978-1-1185-7070-8. Available in paperback, cloth cover and e-book. $32.95 (paperback); $16.99 (e-book, available in Canada from Amazon.ca and kobobooks.com).



Shortly after I submitted the first draft of my MSc, thesis my advisor called me into his office and asked: "Do you ever intend to do a PhD?" At the time I was one of three or four MSc students who were all approaching the end of their programs, most of whom had no plans to go on to doctoral work. I replied that I hadn't yet decided, but that I was leaning that way. "OK then" he said "Your editorial experience is going to be different from that of the other students in the lab".

Why did he ask me that question? Well, as it turns out my advisor tailored his advising style to his students' aspirations. Masters students were given fairly specific instructions about how they were to revise their manuscripts. Doctoral students, and those like me who aspired to eventually do a PhD, were given a little bit more leeway. We would receive fewer comments and less direct instruction than the MSc students. The comments we would receive might explain why something was wrong, or poorly done. The understanding was we would take these comments, learn from our mistakes, and improve on our own.

Every time I pick up a book on writing I think of this episode in my graduate training. In my experience, books on 'how to write in science' seem to fall into two categories: either "Do it this way" or "Here is why this is done". *Writing Scientific Research Articles* falls squarely into this first category. I found it to be a useful introduction to the writing of a scientific paper best suited to the novice author, one with little to no experience writing scientific manuscripts. There is some material here for the experienced author, but the focus is clearly directed at two groups: those who have never written a paper; and those who do not write in English natively.

I will briefly dispense with the particulars of the text. The book is divided into five sections. The first explains how the book itself is organized; the second section covers how to write the 'standard' parts of a scientific paper; the third explains the publication process and the fourth advises on how to become a better writer. The fifth section (roughly a fifth of the book!) presents reprints of three published papers. These are used as study guides and materials from them are used as examples in the previous four sections. In fact, the entire book is organized as a study guide, with many short chapters punctuated by frequent exercises that are meant to be completed by the reader.

I liked many aspects of this book. The text is well written and easy to read, as you would hope with a book on writing. The tone is formal, and I had no trouble imagining the authors presenting the material in a series of lectures. However, since the point of the book is to educate rather than entertain, it can be quite dry. Also, some sections assume that the reader is familiar with technical grammatical terminology (e.g., articles, noun phrases). This could be confusing for a reader who hasn't learned how to parse a sentence, or non-native English speakers unfamiliar with how English sentences are put together (more on this later). Readers of this book might want to have a reference close at hand to explain terms that are not familiar to them. There is also some odd formatting that can be distracting to the reader; for instance, all the internet resources listed in the text appear with long hyperlinks. I suspect this makes sense in the e-book format, but it looks strange in the paper version.

The largest part of the book focuses on how to write the standard parts of a scientific paper.

In this section Cargill and O'Conner do a great job of guiding readers through the stages of preparing a manuscript. They demonstrate how a paper should be built, starting with the results and working outward. This chapter is brief and focuses on crafting a story from data that emphasizes the main points that the author wishes to make. The ideas presented in this chapter are further expanded in the subsequent sections as the authors guide the reader through the assembly of a scientific manuscript.

Following the chapter on writing the results, the authors discuss the construction of figures and tables, followed by a chapter on how to write a methods section. I would have liked to have seen more detail in both of these chapters. To my mind, the figures and methods are critical parts of every manuscript, but the attention given in this book does not correlate with their importance in scientific papers. I understand that the authors were trying to cover a large amount of material in a relatively short book, and it is not reasonable to expect an in-depth treatment of every topic. However, I found it odd that the authors did not direct the reader towards other sources of information for further reading. For instance, there has been much written on the construction of effective scientific figures (e.g., Tufte 2001), but no other books or additional sources were referenced in the chapter. I would have liked to see a short section at the end of each chapter that would have directed the reader to additional resources that could have elaborated on the information presented within the chapter.

Most of the 'how to write a manuscript section' is devoted to the chapters on writing an introduction and a discussion. There is good advice throughout these chapters that even experienced authors can benefit from; if only to serve to remind them of things they may have forgotten. For instance, Cargill and O'Conner have an excellent section showing authors how to present information in a logical order. I also found their advice on structuring a discussion to emphasize the 'key points' to be particularly compelling. Cargill and O'Conner demonstrate how an author can vary the emphasis and strength of their claims by changing just a few words in a sentence. I've seen this done in papers, but it was educating to have it explained why it works so well. Experienced authors may find on reading this chapter that they recognize a few of their own tools in their scientific writing toolbox and novice authors will find many tools that they will want to add to theirs.

The 'how to' section also includes a long chapter on the writing of review articles. I found this to be an odd addendum to this part of the book because I did not understand why so much space is given over to a special case of academic writing. It's not that the advice they give is bad. It's not. In fact it's quite good. Rather, I suspect that most readers of the book are more likely to use it to help write the opening chapter of their thesis, not to write a review article. Senior authors, who are more likely to be writing review articles, are not the target audience of this book.

The next major section of the book goes over the nuts and bolts of preparing, submitting and revising a manuscript. This section is a good primer on what an author should expect when they submit their first paper. I did find it a bit odd though that the chapter on formatting the document comes after the chapters on submitting and revising the manuscript. That said, there is no reason that the chapters need to be read in order. A first time author, having read this section, will be prepared for what to expect during the peer-review process, including how to respond to a reviewed manuscript, and how to deal with difficult reviews (and reviewers). However, after their first experience with peer review, upon reflection they may find that the experience of peer review as it is described in this book is somewhat idealized. Novice authors will get much from this chapter, but they might want to take parts of it with a grain of salt.

The final section of the book is devoted to helping authors become better writers. Here the advice given is pretty standard – join a journal club, start a writing group, review papers – and good practice for all writers.

This final section also contains the only part of this book that troubled me. Cargill and O'Conner explain at the start of the book that their course, upon which this book is based, was developed for authors for whom English is not the language of communication in everyday life. They refer to these as 'EAL authors' (EAL for English as an Additional Language). Cargill and O'Conner devote Chapter 17 to advising EAL authors on how to improve their English writing skills. One method they propose centres on a way for EAL authors to write more grammatically correct and fluent English prose. In their method they suggest EAL authors assemble a collection of phrases and passages from the published literature that can be used to help construct new phrases and passages for use in their papers. Their method involves extracting the noun phrases from the source passages to construct a framework of connecting words. The EAL author can then use these frameworks to build new prose for their own manuscripts by inserting relevant noun phrases that describe their own work.

My fear is that weak writers and inexperienced authors - be they EAL or not - might read this chapter as condoning a mild form of plagiarism (assuming of course there is such a thing as 'mild plagiarism'). Cargill and O'Conner are careful to point this out and warn their readers that this is not a licence to copy other authors' works. Now, I suspect experienced authors do this all the time. I know I have favourite turns-of-phrase and ways that I construct certain passages that are common to all my papers. That said, I strongly caution against using this advice as the technique hinges on how well the EAL author is able to recognize and extract the noun-phrases in order to construct their frameworks. This method requires that the novice author must be able to parse English well enough to deconstruct the source material, but be poor enough at writing English that they need these frameworks in the first place. I just don't see how this is workable.

That this chapter contains such bad advice is unfortunate, as there is much to offer in the way of good advice. Indeed, a lot here would be useful to authors of any linguistic profile. The rest though should be approached very carefully, as it puts too much power in the hands of a novice author.

So who should read this book? Undergraduates completing an honours thesis and new graduate students will learn a lot. Anyone who has written a few papers will learn a few new tricks (if they stick to the chapters on writing the different parts of an article). Professors might find this book useful as a text for a short course on writing for the scientific literature. The authors of the book suggest that it could be used by a group of students in a course of self-directed study. Many of the included exercises include a discussion component that asks a group of peers to reflect on what they've been reading or are writing. This is great advice and would be an excellent way for a group of novices without access to a dedicated course to learn how to become better writers. Studying this book as a group would also be one great way to form a support-system for informal review when you're writing 'for real'.

I qualify my recommendation of this book with the observation that *Writing Scientific Research Articles* skims the surface of many topics. It works better as a study guide than as a reference text. I think all authors should have a library of books on writing and writing in science that they reference when needed. Three suggestions that complement *Writing Scientific Research Articles* would be the classic *Elements of Style* (Strunk and White 1999), the equally good *How to Write and Publish a Scientific Paper* (Day and Gastel 2011) and *The Visual Display of Quantitative Information* (Tufte 2001).

I recall my experience writing my very first paper as being somewhat painful and, given how bad a writer I was then, it must have been even more painful for my supervisors. If I'd had this book then, I suspect the process of writing my first papers would have gone a bit more smoothly. Fortunately, during both my post-graduate degrees I was lucky to have supervisors that wanted to help me become a better writer. If you're not so lucky, you'd be well advised to pick up a

copy of this book and take its lessons to heart.

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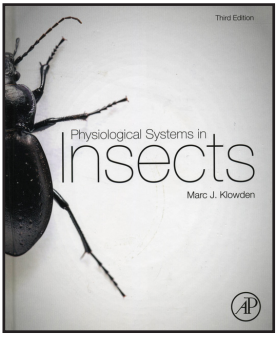

Physiological Systems in Insects (3rd ed.). Klowden, Marc J. 2013. Elsevier. xiii + 682 pp. Hardcover. ISBN 978- 0-12-415819-1. US$67.46. Also available as an eBook (ISBN 978-0-12-415970-9, at same price).

This book has grown considerably since its inception in 2002, when it was just over 400 pages in length, due to the addition of new material to all chapters and major revisions to those dealing with rapidly evolving areas such as endocrinology, development, behavior and neurobiology. The author, now an emeritus professor at the University of Idaho, has succeeded in bringing the often complex ways in which insects function to a level that can be understood by senior undergraduates in life sciences with some knowledge in genetics and molecular biology, organic chemistry, and general animal physiology. Indeed, the book's original purpose was to provide a supplement to the lectures in an insect physiology course offered jointly by the University of Idaho and Washington State University, but the present edition will also be valuable to graduate students and other researchers in entomology whose knowledge of the inner workings of their research model needs a bit of a 'polish'.

The book comprises a preface, 12 chapters, a glossary, and an index. In an interesting preface, Klowden is at pains to draw comparisons between insects and vertebrates and hence to argue persuasively that our six-legged friends can often serve as models for human physiology and in medical research, citing several examples of insect studies that have given insights into human sleep, neurodegenerative diseases, obesity and metabolic diseases, and intestinal disease.

Each chapter includes a carefully written introduction that sets the stage for the 'nitty gritty' to come, an abundance of figures (50 in Chapter 1, for example), an extensive and up-to-date bibliography (nearing 30 pages in Chapter 1) arranged under major topics, and a final section 'Terms for Understanding (the chapter's subject)' where key words and phrases are defined. The text includes, by design, no references 'to maintain the flow of reading'. Personally, I have never felt that the inclusion of text references disrupted reading of good science, and their absence makes it difficult to determine (easily) who discovered or proposed what. As well, the 'Terms for Understanding …' are all repeated in the Glossary, rendering one or the other redundant. The figures are generally good, though on occasion are 'overly complex' for their purpose, with

too many unnecessary (and often unexplained) labels.

Chapter 1, Signaling Systems (previously Endocrine Systems), has a significant amount of new material, including a section on paracrine signaling. Both this and the following treatment of insect hormones incorporate much of the recent molecular biology work on sites and modes of action of hormones.

Integumentary Systems (Chapter 2) begins with a discussion of post-embryonic growth and development, including the various strategies found in insects as they move towards adulthood (ametaboly, hemimetaboly and holometaboly). It then provides a straightforward account of the structure, chemical composition, formation and functions of an insect's outer body layer. There are some minor quibbles such as the assertion (p. 89) that the terms 'integument' and 'exoskeleton' are often used interchangeably. While this may be so, it is inaccurate: integument is the entire structure, including both cellular and acellular components, while exoskeleton should be restricted to the acellular structures that provide the insect's 'suit of armor' and supportive skeleton. As well, the term 'old cuticle' is used rather loosely. Thus, on page 113, it is stated that 'casting off of the old cuticle … ecdysis', yet about 10 lines below we read 'digesting the old cuticle' and below that 'As the old cuticle is digested'. As the author surely knows, it is only the inner endocuticle that is digestible, and only the chemically inert exocuticle that is shed at ecdysis.

Chapter 3 (Developmental Systems) is perhaps misnamed, given that it deals only with embryonic development, and arguably misplaced as it requires a description of the structure of the insect egg, a component of the female's reproductive biology covered in the following chapter.

Chapter 4 (Reproductive Systems) provides a standard account of insect reproduction (including structures of male and female systems, endocrine control, ovulation, fertilization, oviposition, and spermatogenesis), boosted by the addition of new work on molecular signaling and genetic control of such processes as oogenesis, vitellogenesis, and spermatogenesis. Surprisingly, the chapter has some unexpected errors, for example, 'collaterial glands' (should be either 'collateral' or 'colleterial' with specific reference to cockroaches and mantids), the use of 'spermathecae' and 'spermatozoa' as a singular form, and reference to *Sphodromantis* (misspelled on p.215) as a cockroach.

Behavioral Systems (Chapter 5) has sections on the genetic basis and hormonal regulation of behavior, learning and memory, circadian rhythms, polyphenisms, polyethisms, behaviors associated with metamorphosis (including eclosion, though this largely repeats what has been said earlier [p. 114]), and behavioral modifications induced by parasites. However, in this edition, there is no discussion of sleep in insects as was found in the second edition (though several references to this topic remain in the Bibliography). It was also surprising to learn (p. 265) that ants have a proboscis, which they can extend when suitably conditioned.

Metabolic Systems (Chapter 6) is a straightforward account of the structure and functions of the insect gut, the sites and chemical pathways for dealing with carbohydrates, proteins and lipids, and diapause as a metabolic process. Unfortunately, there are errors that may confuse an inexperienced reader: for example, while the text refers (correctly) to 'basal lamina' (p. 312), Figure 6.10 (p.313) labels the structure as 'basement membrane'; ceca (plural of cecum) is consistently misspelled; 'branchial' (related to gills) is misspelled as 'brachial' (relating to arms) (p.317, also p. 464 and Fig. 9.23); the enzyme trypsin is defined as an endopeptidase whose action results in peptide chains (p. 319) – it does not generate free amino acids which are the result of exopeptidase action; although trehalase may be a common carbohydrase in insects (p. 320), its role is within the fat body, not as a digestive enzyme in the midgut lumen, where trehalose, an extremely rare sugar in Nature, is virtually never found (see p. 378); and while the term tricarboxylic (misspelled) acid cycle (p.330 and Fig. 6.26) is introduced, the author subsequently reverts to using citric acid cycle or Krebs' cycle as in the second edition without noting their synonymity.

Chapter 7 (Circulatory Systems), which provides a sound coverage of the structure and functions of the circulatory system, heartbeat regulation, hemolymph composition, hemocytes, the various forms of insect immunity, cold hardiness and thermoregulation, is perhaps the least changed chapter in this new edition. A minor criticism would be the failure to note that coagulocyte (only in Fig. 7.16) is essentially synonymous with cystocyte (only in text) and neither term appears in the list of Terms for Understanding. And an explanation of how polyhydric alcohols and sugars work as cryoprotectants (p.393) would be useful.

Under Excretory Systems (Chapter 8), Klowden deals with the major excretory products of insects, the structure and operation of excretory organs, the endocrine regulation of excretion and osmoregulation, and storage excretion. The account is generally sound, though a new figure (8.1) would be greatly improved with an explanation of the units measured. In Fig. 8.6 (and text p. 429), it should be noted that ammonia is the excretory product for (aquatic) dragonfly nymphs, not (adult) dragonflies.

Respiratory Systems (Chapter 9), another chapter that seems little changed from the previous edition, describes the tracheal system, including modifications for increasing gas exchange, discontinuous gas exchange, and gas exchange in aquatic insects.

Chapter 10 (Locomotor Systems) covers basic muscle structure and activation, the evolution, structure and mechanics of wing movement, flight muscle metabolism, and walking and other forms of terrestrial locomotion. The text is clearly written, though it would have been good to see more discussion of why/how those aerial acrobats, dragonflies, retain independently beating wings, a system that has been discarded by most insects in favor mechanically coupled or a single functional pair of wings (p.504).

Chapter 11 (Nervous Systems) begins with a new section on the nervous system as a key to arthropod evolution, followed by descriptions of its basic components, nervous transmission, structure of the central and visceral nervous systems, and sensory structures and their physiology, including a large section on vision. The text includes interesting new studies (mainly in *Drosophila*) of the genes regulating transduction in chemoreceptors and the compound eye.

The final chapter has what for me is the rather misleading title of 'Communication Systems', because it deals only with communication between organisms, not communication within organisms which was covered in preceding chapters. That said, the chapter is a good summary of how and why insects produce, visual, chemical, sound and tactile signals that can be received by conspecifics, other insect species and even other animals. There is, perhaps inevitably, some repetition of material already covered (e.g., sound production by wing movement in mosquitoes and *Drosophila* [p.560] and by expulsion of air from the tracheal system in the cockroach *Gromphadorhina* [p. 458]), but this is a minor quibble. There is a strong section on chemical communication mediated by pheromones and allelochemicals. However, I'm sure the author did not intend to state (p. 627) that 'PBAN (pheromone biosynthesis activating neuropeptide) mRNA … is released into circulation from the corpus cardiacum'.

A disappointing feature of the third edition is the very unsatisfactory standard of proof-reading. Innumerable errors in grammar, spelling, and style (in the bibliographic lists) occur, some carried forward from the first edition. While individually these may seem a minor irritant, when they are frequently repeated they become an annoyance. Occasionally, they may have quite unintended consequences; for example, taxonomists will be interested to learn of several new species – *Manduca shade* (p.72), *Aedes allatotropin* (p.78) and *Lethocerus troponin* (p. 517).

The above criticisms notwithstanding, Klowden has written a very good book, incorporating new findings with long-established principles in the field of insect physiology.

Cedric Gillott
University of Saskatchewan

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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.

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Hoy, M. Insect Molecular Genetics. An Introduction to Principles and Applications. 3rd Edition. 2013. 840 pp. Academic Press. (hardcover, ebook). ISBN: 9780124158740

Chyb, S. and N. Gompel. Atlas of Drosophila Morphology, 1st Edition. Wild-type and Classical Mutants. 2013. 248 pp. Academic Press. (hardcover, ebook). ISBN: 9780123846884

Wajnberg E. and S. Colazza (Eds.). Chemical Ecology of Insect Parasitoids. 2012. 328 pp. Wiley-Blackwell, Hoboken, NJ.(hardcover). ISBN: 978-1-118-40952.

Paiero, S.M, Jackson, M., Jewiss-Gaines, A., Kimoto, T., Gill, B.D. and S.A. Marshall. 2012. Field Guide to Jewel Beetles (Coleoptera: Buprestidae) of Northeastern North America. Canadian Food Inspection Agency. 164 maps. 411p

Devorshak, C. (Ed.) Plant Pest Risk Analysis. Concepts and Applications. 2012. 312 pp. CABI Publishers. (http://bookshop.cabi.org/?page=2633&pid=2493&site=191) [Note – the book will be provided to the reviewer as an eBook in PDF format.]

Pfau, H.K. Functional Morphology and Evolution of the Male Secondary Copulatory Apparatus of the Anisoptera (Insecta: Odonata). 2011. 103 p., 65 figures, 31 x 23 cm (Zoologica, Volume 156) ISBN 978-3-510-55043-2 paperback. (http://www.schweizerbart.de/publications/detail/isbn/9783510550432)

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

Bulletin of the Entomological Society of Canada

Editor: Cedric Gillott
Assistant Editor: Julia Mlynarek

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

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Julia Mlynarek, Assitant Editor / Rédactrice adjointe

Time Flies

I cannot believe that it has been almost 3 years since I started as Assistant Editor of the *Bulletin*. It has been an adventure, a great adventure at that. I have to admit I was quite intimidated when I started; taking on a task that Fred Beaulieu did so well. He was a tremendous help while I was learning the ins and outs of this position. I did have big shoes to fill and I hope I have done so! Cedric has been very patient with me. We did not know each other before we started working together. We met, for the first time, 2 years into this collaboration, when he and his family were wonderful hosts as I passed through Saskatoon for field work. He has been very encouraging as I have been weaving between this position and my thesis work - preparing for my qualifying exam, doing field work and writing my chapters. It has been a great learning experience especially about editorial work and about the internal workings of the Society.

As I ponder more about this, being the Assistant Editor and working on my thesis will be forever linked. I was just starting my PhD when I took this position on, now I'm wrapping up both my PhD and my Assistant Editor work. I am very grateful to have had the opportunity to do this. I also encourage all students if you're considering getting hands on experience, it is extremely important to become involved in Societies such as the ESC. These kinds of positions allow a student to be more involved. The next steps of my life and career are ahead of me now, but I'm unsure of what they'll hold. I have to say I felt the same way when I was starting my PhD and the

Le temps file

Je ne peux pas croire qu'il y a déjà presque 3 ans que j'ai débuté comme rédactrice adjointe pour le *Bulletin*. Ce fut une aventure, une belle aventure. Je dois admettre que j'étais plutôt intimidée quand j'ai débuté : reprendre des tâches que Fred Beaulieu avait si bien menées. Il a été d'une aide incroyable alors que j'apprenais les tenants et les aboutissants de ce poste. La barre était haute et j'espère y être parvenue! Cedric a été très patient avec moi. Nous ne nous connaissions pas avant de commencer à travailler ensemble. Nous nous sommes rencontrés pour la première fois 2 ans après le début de la collaboration lorsque que lui et sa famille ont été des hôtes fantastiques alors que je passais par Saskatoon pour du travail de terrain. Il a été très encourageant alors que j'alternais entre ce poste et mon travail de thèse – me préparant pour mes examens de synthèse, faisant du travail de terrain et rédigeant mes chapitres. Ce fut une expérience d'apprentissage fantastique, particulièrement concernant le travail d'édition et le travail interne à la Société.

Lorsque que j'y réfléchis, être la rédactrice adjointe et travailler sur ma thèse seront toujours liés. Je débutais mon doctorat quand j'ai pris ce poste, et maintenant je termine autant ma thèse que mon travail de rédactrice adjointe. Je suis très reconnaissante d'avoir eu l'opportunité de le faire. J'encourage aussi tous les étudiants; si vous considérez prendre de l'expérience, il est très important de s'impliquer au sein de sociétés telles que la SEC. Ce genre de poste permet à un étudiant d'être plus impliqué. Les prochaines étapes de ma vie et de ma carrière sont devant moi maintenant, mais je ne suis pas sûre de ce qu'elles contiendront. Je dois dire que je ressentais la même chose quand j'ai débuté mon doctorat et le poste de rédactrice adjointe. Ce fut 3 magnifiques années, et je suis optimiste que les prochaines étapes seront aussi bien.

Je pense que le *Bulletin* est un document irremplaçable pour la Société. En tant que membres, nous apprenons ce qui se passe dans la Société via les articles réguliers du *Bulletin*.

Assistant Editorship. They were a wonderful 3 years, so I'm optimistic that the next steps will be just as good.

I think the *Bulletin* is an invaluable document for the Society. As members, we learn what is happening in the Society through the *Bulletin's* regular features. But I think the special features are what make the *Bulletin* extra special. Each special feature article is always a great surprise. One especially interesting article for me was actually one of the first special features I edited "The Criddle Vane homestead" (*Bulletin* 43[1]), followed by some sad news about the homestead in *Bulletin* 44[2]. I found myself collecting in the area of the Criddle Vane Homestead sometime after reading the article, so I eagerly went to visit this historically important place in Canadian entomology. Through special features, we also read about other big news such as learning that our flagship journal was changing publishers (*Bulletin* 44[1]). Additionally, in the past year, Cedric and Jean-Pierre Bourassa have been writing tributes to the people that have had an influential role for entomology in Canada (*Bulletin* 45[1]; 45[2]; 45[3] and on page 169 of this issue) in celebration of the Society's sesquicentenary. I find it fascinating to read about the history of our Society. Hopefully, the Heritage Committee will not stop at four but continue bringing the history to life for the future generations of entomologists.

I must also point out that my leaving the post of Assistant Editor of the *Bulletin* is not the only change. This is the last issue that will be printed. The *Bulletin* is going to an online-only version (PDF format as always) starting the next issue. There are a couple of benefits to this for you, the reader; you will have the opportunity to print whatever article you deem worthy and you'll be able to choose the font size!

But the *Bulletin* will continue to be in good and experienced hands with Donna Giberson taking over as Assistant Editor and Cedric continuing as Editor. I wish them both luck and look forward to further issues of the *Bulletin*.

Thanks contributors and readers. I hope to see you all at the meetings!

Mais je pense que les articles spéciaux sont ce qui rend le *Bulletin* très spécial. Chaque article spécial est toujours une belle surprise. Un article particulièrement intéressant pour moi a été un des premiers articles spéciaux que j'ai édité, « The Criddle Vane homestead » (*Bulletin* 43[1]), suivi de quelques tristes nouvelles sur cette propriété dans le *Bulletin* 44[2]. Je me suis retrouvée à échantillonner dans la région de la propriété Criddle Vane peu de temps après avoir lu l'article, alors j'avais hâte de visiter cet endroit historiquement important pour l'entomologie canadienne. Par les articles spéciaux, nous lisons également d'autres grandes nouvelles telles que le passage de notre revue phare vers une nouvelle maison d'édition (*Bulletin* 44 [1]). De plus, dans la dernière année, Cedric et Jean-Pierre Bourassa ont écrit des hommages aux gens qui ont eu un rôle important pour l'entomologie au Canada (*Bulletin* 45[1]; 45[2]; 45[3] et en page 169 de ce numéro) pour célébrer les 150 ans de la Société. J'ai trouvé fascinant de lire sur l'histoire de notre Société. J'espère que le comité du patrimoine ne s'arrêtera pas à quatre, mais continuera de donner vie à l'histoire pour les générations futures d'entomologistes.

Je dois aussi mentionner que mon départ du poste de rédactrice adjointe du *Bulletin* n'est pas le seul changement. Il s'agit du dernier numéro qui sera imprimé. Le *Bulletin* va vers une version entièrement en ligne (en format PDF, comme toujours) à partir du prochain numéro. Il y a plusieurs bénéfices pour vous, le lecteur : vous aurez l'opportunité d'imprimer les articles que vous jugez dignes de l'être et vous pourrez choisir la taille de police!

Mais le *Bulletin* sera entre bonnes mains expérimentées avec Donna Giberson qui prend le poste de rédactrice adjointe, et Cedric qui continue comme rédacteur. Je leur souhaite à tous deux bonne chance et j'ai hâte de voir les prochains numéros du *Bulletin*.

Merci aux contributeurs et aux lecteurs. J'espère vous voir lors des réunions!

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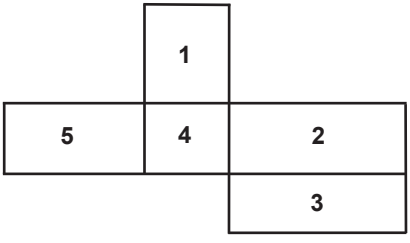

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Images

On the spine: Stinkbug eggs found on the foliage of lodgepole pine, Tappen, BC. Photo: W. Strong

Beneath the title: Nymphs of *Pachycoris klugii* on *Jatropha cucras* tree, Tehuacan, Chiapas, Mexico. Photo: T. Haye

1 A female *Agapostemon* sp. (Halictidae), foraging on fireweed in June on the UBC Okanagan (Kelowna) campus. Photo: B. Lalonde

2 Sweeping vegetation for terrestrial arthropods as part of the Northern Biodiversity Program survey during 2010. The location is the Skeleton Creek Valley, located just above Lake Hazen on the northern Ellesmere Island. Students are (from left) Christine Roussel (UPEI), and Sarah Loboda and Meagan Blair (both from McGill). Photo: D. Giberson

3 *Stratiomys badia*, an impressive bee mimic, rests in a garden at dusk, in Chesterville, Ontario. Photo: C. Ernst

4 Larva of *Papilio machaon dodi* (Lepidoptera: Papilionidae), on *Artemisia dracunculus*, near Drumheller, Alberta. Photo: J. Dupuis

5 Late stage pupae of the honey bee, *Apis mellifera*, dissected as part of a search for breeding varroa mite (none found). Taken from a hive in the Gisborne area on the East Coast of the North Island of New Zealand, March 2012. Photo: J. McLean

Back cover: A gravid female of the threatened Dakota skipper, *Hesperia dacotae* (Skinner)(Hesperiidae) perched on Yarrow, *Achillea millefolium* (Asteraceae) in a tallgrass prairie northeast of Deleau, Manitoba. Photo: C. Rigney

Français à l'intérieur de la couverture avant.