



Bulletin

Entomological Society of Canada
Société d'entomologie du Canada

Volume 45
Number / numéro 3



September / septembre 2013



Published quarterly by the
Entomological Society of Canada

Publication trimestrielle par la
Société d'entomologie du Canada



Up front / Avant-propos101
 Joint Annual Meeting 2013 / Réunion conjointe annuelle 2013.....104
 ESC 2013 award winners / Gagnants des prix SEC 2013.....106
 People in the news / Gens qui font les manchettes.....116
 The student wing / L'aile étudiante118
 Special features / Articles spéciaux:
 Five decades of entomology come to an end: Winnipeg Research Station – Cereal
 Research Centre, 1957-2013.....120
 From the Distant Past - Part III: William Saunders.....127
 Open access, predatory publishers, *The Canadian Entomologist* and you.....131
 Meeting announcements / Réunions futures.....138
 Society business / Affaires de la Société.....139
 Announcements / Annonces144
 Book review / Critique de livre146
 Books available for review / Livres disponible pour critique.....148
 Officers of affiliated Societies / Dirigeants des Sociétés associées149
 The last word / Le dernier mot151
 Governing board / Conseil d'administrationinside back cover

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 curcas*, 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

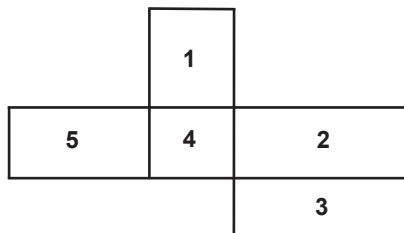
2 Fauchage de la végétation pour capturer des arthropodes terrestres dans le cadre de l'inventaire du Programme sur la Biodiversité Nordique depuis 2010. La photo été prise à Skeleton Creek Valley, juste sous le lac Hazen dans le nord de l'île Ellesmere. Les étudiants sont (de gauche à droite) Christine 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





Sustaining our focus in a constantly-moving digital world

As I have gotten deeper into this year, there is something that I was peripherally aware of before that has been brought into sharper focus. This ‘something’ is how busy we are all becoming in our lives and, at work especially, how overwhelmed with electronic communications and requests we’ve become. I suppose I have become more acutely aware of it, not only because of my own attempt at staying ahead of the constant flow of information and things to do, but it faces me squarely whenever I ask one of our dedicated Society members for help on a task or to commit to a vacated position. I certainly have become more respectful of other people’s time and efforts, and grateful for the gifts of volunteerism, often bestowed from already busy work and personal lives.

The increased amount and rate of activity in our lives seems to be driven in large part by the digital age. Although exciting and with the promise of expanded connections and message outreach, the internet also can be distracting and add unwelcomed complexity to our tasks,

Maintenir notre attention dans un monde numérique constamment en mouvement

Alors cette année s’avançait, il y a une chose dont j’étais périphériquement consciente auparavant et qui est devenu plus clair. Cette « chose », c’est à quel point nous menons tous des vies occupées et, au travail particulièrement, à quel point nous sommes submergés par les communications et les requêtes électroniques. Je suppose que j’en suis devenu plus consciente, non seulement à cause de mes propres essais à rester à jour avec le constant flux d’information et de choses à faire, mais également à chaque fois que je demande à un de nos dévoués membres de la Société de l’aide sur une tâche ou pour combler un poste vacant. Je suis certainement devenue plus respectueuse du temps et des efforts des autres personnes, et reconnaissante pour leur bénévolat, souvent accordé sur un travail et des vies personnelles déjà chargées.

La hausse de la quantité et du taux d’activité dans nos vies semble être causée en grande partie par l’ère numérique. Bien qu’excitant et apportant beaucoup de connexions et de messages, Internet peut également être distrayant et ajouter une complexité pas toujours bienvenue à nos tâches, réduisant ainsi notre attention et notre temps sur ce qui doit être fait. Dans une récente entrevue à la CBC, Nicholas Carr (critique et auteur américain sur les effets d’Internet) expliquait qu’Internet amène une distraction, qui rend difficile de maintenir notre attention et un dialogue constructif sur des questions importantes. Pour ce qui est de la complexité ajoutée, un exemple concerne le nouveau monde des publications scientifiques en ligne, où la compétition en ligne globalement générée pour la soumission de nos articles scientifique et les services est féroce et continue, et peut également amener de la confusion pour le scientifique moyen (voir p. 131 de ce numéro pour un excellent article bien

thus reducing our focus on and time for what needs to be done. In a recent CBC interview, Nicholas Carr (American critic and author on the internet's effects) explained that the internet is all about distraction, which makes it difficult to sustain our attention and meaningful dialogue on important issues. With respect to added complexity, one example is in dealing with the new world of online science publication, where globally-generated online competition for our scientific paper submissions and services is fierce and relentless, and also can be confusing to the average scientist (see p. 131 of this issue for an excellent, well-researched article by members of our Publications Committee on 'open access' and 'predatory publishing').

There is no doubt that the ESC needed to enter the digital age to survive and conduct its business of promoting and communicating entomology in the present day. Our commitment to modernization is well evident, having made recent, big strides in the endeavour through the online migration of publication, submissions and reviews of our scientific journal, soon-to-be totally digital publication of the *Bulletin*, online voting and meeting registration, and the addition of new media tools (Twitter and blog). Although there are still some improvements and tweaks to be made in getting the online operations running smoothly, I want to stress how useful these tools are, and will continue to be, to our Society, and urge members not already initiated to get familiar with their applications and potential. Also related to our digital presence and operations, I'm pleased to announce and welcome a new Webmaster beginning at the Guelph JAM, namely Dicky Yu, an Entomologist and Bioinformatics Analyst with Agriculture and Agri-Food Canada, Ottawa. (And as Rick West leaves his current post as Webmaster, may we all offer him a huge thanks for his major contributions in the maintenance and improved design of our website).

Despite the many benefits of us entering the digital age, however, there is still a word of caution to be uttered on its potential side effects on us and the ESC, and to somehow identify and deal with these efficiently. Foremost, we need to be cognizant of the energy and time drain of the

documenté de notre comité des publications sur le libre accès et les éditeurs prédateurs).

Il n'y a aucun doute que la SEC doit entrer dans l'ère numérique pour survivre et mener ses affaires pour promouvoir et communiquer l'entomologie de nos jours. Notre engagement envers la modernisation est évident, ayant fait récemment de grands pas dans nos efforts vers la migration en ligne de la publication, des soumissions et de la révision de notre revue scientifique, la publication bientôt complètement numérique du *Bulletin*, le vote en ligne, les inscriptions pour la réunion en ligne, ainsi que l'addition de nouveaux outils médiatiques (Twitter et blogue). Bien qu'il y ait encore des améliorations et des ajustements à faire afin de rendre ces opérations en ligne fonctionnelles, je veux mettre l'accent sur l'utilité que ces outils ont, et continueront d'avoir pour notre Société, et j'implore les membres qui ne sont pas encore initiés à se familiariser avec leurs applications et potentiels. Également en lien avec notre présence et nos opérations numériques, je suis ravie d'annoncer et de souhaiter la bienvenue à notre nouveau webmestre dès la réunion annuelle à Guelph, Dicky Yu, un entomologiste et analyste bio-informaticien à Agriculture et agroalimentaire Canada à Ottawa. (Et alors que Rick West quitte son poste actuel en tant que webmestre, remercions-le tous pour ses contributions majeures dans la maintenance et la présentation améliorée de notre site Internet).

Malgré les nombreux avantages à entrer dans l'ère numérique, il y a encore quelques précautions à prendre sur ses effets secondaires potentiels pour nous et pour la SEC, et afin de les identifier et de les gérer efficacement. Avant tout, nous devons être conscients de l'énergie et du temps qu'Internet draine de notre concentration sur nos tâches, questions et objectifs et sociétaux importants. Même de petites tâches en apparence, telles que s'inscrire en ligne pour la réunion qui approche ou voter pour élire le prochain second vice-président et conseiller (effectué en ligne pour la première fois cette année) peut aisément nous échapper avec le déluge d'affaires auquel nous faisons face tous les jours dans nos boîtes de réception. Malgré

internet on our focus on important societal tasks, goals and issues. Even seemingly small duties like registering online for our upcoming JAM or voting to elect the next 2nd Vice-President and Director-at-Large (for the first time, performed online this year) can easily slip our minds with the deluge of 'stuff' that faces us each day in our e-mail boxes. Yet, these small tasks are extremely important for each of us to execute for the collective success of the ESC, and we must somehow make them a priority. If you have any novel ideas on how we can increase our members' attention, or memory, for completing these online tasks, please do share them. Perhaps the solution can be as simple as developing a computer sub-program to regularly prompt us on tasks?

But from my current, broader perspective, perhaps some other solutions to controlling the few down-sides of the digital world while still benefiting from its usefulness are to be found in: 1) periodically unplugging from or filtering out irrelevant, distracting internet chatter; 2) making a real effort to attend our JAMs or other meetings with physically-present colleagues where face-to-face interactions help us to refocus on what is important to do and pursue; and 3) slowing down and taking time to get out in the field to physically interact with insects and our natural surroundings. On topic #3, despite my e-mail pile vying for attention a couple of Fridays ago, I accepted an opportunity extended by entomologist colleague, Shelley Hoover, to get up close and personal with some honey bee colonies that she is studying at the Lethbridge Research Centre. It was a first time experience for me, and so exciting! I was a bit nervous at first, but the bees were very well behaved that day, and I soon relaxed into the thrill of handling and watching them.

In closing, hope to see many of you in-person in Guelph, 20-23 October, for our big 150th celebration/ESC-ESO JAM, and would like to hear of any new and exciting entomological moments you may have experienced this summer. And please make time right now for registering, submitting your titles and booking your accommodations online if you haven't already done so at <http://www.uoguelph.ca/debu/esc-eso2013/esc-eso.html>.

cela, ces petites tâches sont extrêmement importantes à faire pour chacun de nous pour le succès collectif de la SEC, et nous devons en faire une priorité. Si vous avez de nouvelles idées sur la façon dont nous pouvons augmenter l'attention ou la mémoire de nos membres afin de compléter ces tâches en ligne, merci de les partager avec nous. Peut-être que la solution peut être aussi simple que de développer un sous-programme informatique qui nous rappellerait régulièrement les tâches à faire?

Mais de ma perspective actuelle et plus large, peut-être que d'autres solutions pour contrôler les quelques désagréments du monde numérique tout en bénéficiant de ses utilités seront de : 1) périodiquement débrancher ou filtrer les bavardages non pertinents ou distrayants sur Internet; 2) faire un véritable effort afin d'assister à nos réunions conjointes annuelles ou autres réunions avec des collègues physiquement présents où les interactions face-à-face nous aide à nous concentrer sur ce qui doit être fait et poursuivi; et 3) ralentir et prendre le temps de sortir sur le terrain afin d'interagir physiquement avec les insectes et notre environnement naturel. Sur le sujet #3, malgré ma pile de courriels rivalisant pour de l'attention, j'ai accepté une opportunité offerte par une collègue entomologiste, Shelly Hoover, à me rapprocher des colonies d'abeilles qu'elle étudie au Centre de recherche de Lethbridge il y a deux semaines. C'était une première expérience pour moi, et c'était tellement excitant! J'étais d'abord un peu nerveuse, mais les abeilles se sont très bien comportées cette journée-là, et je me suis rapidement relaxée tout en restant excitée de les manipuler et de les observer.

En finissant, j'espère voir beaucoup d'entre vous en personne à Guelph, du 20 au 23 octobre, pour notre 150^e célébration/réunion SEC-SEO, et j'aimerais entendre toute expérience entomologique nouvelle et excitante que vous aurez expérimentée cet été. Et s'il vous plaît, prenez le temps dès maintenant de vous inscrire, de soumettre vos titres et de réserver votre hébergement en ligne si nous ne l'avez pas déjà fait sur <http://www.uoguelph.ca/debu/esc-eso2013/esc-eso.html>.

Joint Annual Meeting / Réunion annuelle conjointe

JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA AND THE ENTOMOLOGICAL SOCIETY OF ONTARIO

The University of Guelph and the Delta Guelph Hotel & Conference Centre,
Guelph, Ontario Sunday 20 October – Wednesday 23 October 2013



PREDATING THE NATION: A SESQUICENTENNIAL CELEBRATION OF ENTOMOLOGY IN CANADA

We invite you to the 2013 Joint Annual Meeting of the Entomological Society of Canada and the Entomological Society of Ontario, a special celebration of the 150 years of joint history of the two societies. In recognition of this Sesquicentennial Anniversary, we are extending the conference to 4 full days and including a wide range of symposia, workshops and associated events.

The Sunday program and some special events will be held on the University of Guelph Campus. The remainder of the conference will be held at the Delta Guelph Hotel & Conference Centre, 50 Stone Road West Guelph, Ontario N1G 0A9 Canada (rooms can be booked directly at <https://www.deltahotels.com/Groups/Delta-Guelph-Groups/U-of-G-Entomological-Society-of-Canada>). Room rates are from \$134/night plus taxes, and include parking. Call 519-780-3700 or 1-800-268-1133 for reservations. (Group Code: GLCON2013).

Program Highlights

Plenary Symposium and Heritage Lecture: The plenary symposium is designed to celebrate the history of the ESC and ESO, include a range of entomological topics, and highlight the success of Canadian entomological education, research, and service to society.

Dr Laura Timms, Lyman Entomological Museum, McGill University.

Dr Brian Brown, Natural History Museum of Los Angeles County.

Dr Owain Edwards, CSIRO, Australia.

Dr Alex Wild, well-known insect photographer and myrmecologist, will be the Banquet Speaker

Graduate Student Showcase, following the Plenary Symposium

Sustainable Agriculture and Integrated Pest Management

Beneficial Arthropod Health and Agroecosystems

New Technologies for Investigating Old Ecological Problems

Application of Insect Genomics in Canada: Problems of the Past, Solutions of the Future.

The Canadian Pollination Initiative: 5 Years of Integrative Research Addressing Pollination Decline in Canada.

How Insects Work: Highlighting Research into Insect Physiology and Biochemistry.

The Science of Emerald Ash Borer: Where Are We After 10 Years of Research?

Challenges of Insect Management in Stored Products.

Orchids and Insects.

Biological Survey of Canada Symposium.

Canadian Forum for Biological Control Symposium.

Student paper and poster competitions

Regular paper and poster sessions

Lunch-time workshops – including “Developing a Teaching Dossier for Entomology”, “Get a Job! How to Apply for Positions in Academia & Government”, and “Recognition of Regulated Plant Pests”

Curation Blitz

Associated events on Saturday and Thursday with separate registration.

NEW THIS YEAR: Lunches (Mon-Wed) are included in registration; full day scientific program on Wednesday.

Note that a workshop on “Writing Competitive Grants” will be held on Sunday morning prior to the Opening Ceremonies.

Check the JAM 2013 webpage (<http://www.uoguelph.ca/debu/esc-eso2013/esc-eso.html>) for updated information on symposia and other events, registration and the call for papers.



RÉUNION CONJOINTE ANNUELLE DE LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA ET DE LA SOCIÉTÉ D'ENTOMOLOGIE DE L'ONTARIO

Université de Guelph et hôtel et centre des congrès Delta de Guelph, Guelph,
Ontario

Dimanche 20 octobre – mercredi 23 octobre 2013

ANTÉRIEURE À LA NATION : UNE CÉLÉBRATION CENT CINQUANTAIRE DE L'ENTOMOLOGIE AU CANADA

Nous vous invitons à la réunion conjointe annuelle 2013 de la Société d'entomologie du Canada et de la Société d'entomologie de l'Ontario, une célébration spéciale des 150 ans de l'histoire commune des deux sociétés. En reconnaissance de cet anniversaire cent cinquantaire, nous prolongeons la conférence sur quatre jours complets et incluons une vaste gamme de symposiums, ateliers et événements associés.

Le programme du dimanche et certains événements spéciaux se tiendront sur le campus de l'Université de Guelph. Le reste de la conférence se tiendra à l'hôtel et centre des congrès Delta de Guelph, au 50 Stone Road West, Guelph, Ontario, N1G 0A9 Canada (les chambres peuvent être réservées directement sur <https://www.deltahotels.com/fr/Groups/Delta-Guelph-Groups/U-of-G-Entomological-Society-of-Canada>). Le tarif pour les chambres débute à 134\$ plus taxes par nuit, et inclut le stationnement. Appelez au 519-780-3700 ou 1-800-268-1133 pour les réservations. (Code de groupe: GLCON2013).

Points saillants du programme

Plénière et allocution du patrimoine: la plénière célébrera l'histoire de la SEC et de la SEO, couvrant une gamme de sujets entomologiques et mettant en vedette le succès de l'éducation, de la recherche et des services à la société par l'entomologie canadienne.

Dr Laura Timms, Musée entomologique Lyman, Université McGill.

Dr Brian Brown, Museum d'histoire naturelle du comté de Los Angeles.

Dr Owain Edwards, CSIRO, Australie.

Vitrine pour les étudiants gradués, après la session plénière.

Agriculture durable et lutte intégrée.

Santé des arthropodes bénéfiques et écosystèmes agricoles.

De nouvelles technologies pour explorer de vieux problèmes écologiques.

Application de la génomique des insectes au Canada : problèmes du passé et solutions du futur.

L'initiative de pollinisation canadienne : 5 ans de recherches intégrative sur le déclin de la pollinisation au Canada

Comment fonctionnent les insectes : souligner la recherche en physiologie et biochimie des insectes.

La science de l'agrire du frêne: où en sommes-nous après 10 ans de recherche?

Les défis de la lutte contre les insectes des produits entreposés.

Les orchidées et les insectes.

Symposium de la Commission biologique du Canada.

Symposium du Forum canadien pour la lutte biologique.

Compétition étudiante: présentations et affiches.

Présentations et affiches régulières.

Ateliers du midi – incluant “Développer un dossier d'enseignement pour l'entomologie”, “Trouvez un emploi! Comment appliquer pour des postes académiques et gouvernementaux », et « Reconnaissance des ravageurs de plantes réglemémentés ».

Blitz d'identification.

Événements associés le samedi et le jeudi avec inscriptions séparées.

NOUVEAU CETTE ANNÉE : Les diners (de lundi à mercredi) sont inclus dans l'inscription; programme scientifique toute la journée du mercredi.

Veuillez prendre note que l'atelier « Écrire une demande de subvention compétitive » se tiendra le dimanche matin avant les cérémonies d'ouverture.

Consultez le site Internet de la réunion conjointe annuelle 2013 (<http://www.uoguelph.ca/debu/esc-eso2013/sec-seo.html>) pour des informations à jour sur les symposiums et autres événements, les inscriptions et les appels à soumission.



Gold Medal Award

Stephen A. Marshall

Dr Stephen A. Marshall is the 2013 recipient of the Entomological Society of Canada's Gold Medal. This award, now in its 51st year, recognizes outstanding achievement in Canadian entomology, including "superior research accomplishment", "meritorious contribution to entomological scholarship" and "dedicated and fruitful service in the field of entomological education in Canada", all of which have been exceedingly well exemplified by Dr Marshall.

Considered by his peers to be "one of the very finest entomologist-naturalists in the country", Steve Marshall is also one of the world's foremost Dipterists, and he and his collaborators are responsible for describing over one-fifth of the world's species of sphaerocerids. Overall, Steve Marshall has erected 19 new genera and 601 new species of insects.

It is difficult to pinpoint with precision when Steve Marshall's love affair with insects began, as he can't recall a time when he didn't collect insects. Already at the age of 5 or 6, he housed a collection of beetles in a chest of drawers with foam in the bottom, and he "just kept at it". As a youth, his interest and skills in insect identification were nurtured by interactions with Scotty Allen and David Pengelly, of the University of Guelph. Steve Marshall completed his BSc (Agr) at that institution in

Médaille d'or

Stephen A. Marshall

Dr Stephen A. Marshall est le récipiendaire 2013 de la médaille d'or de la Société d'entomologie du Canada. Ce prix, qui en est à sa 51^e année, reconnaît des accomplissements remarquables en entomologie canadienne, incluant « l'exécution de recherches de qualité supérieure », la « contribution méritoire à l'avancement des connaissances en entomologie », et l'« engagement dévoué et fructueux en matière d'éducation à l'entomologie », dans lesquels s'est bien illustré Dr Marshall.

Considéré par ses pairs comme étant « un des plus grands entomologistes-naturalistes au pays », Steve Marshall est aussi un des principaux diptéristes du monde, et lui et ses collaborateurs sont responsables de la description de plus d'un cinquième des espèces de sphaeroceridés du monde. Au total, Steve Marshall a décrit 19 nouveaux genres et 601 nouvelles espèces d'insectes.

Il est difficile d'identifier avec précision quand l'histoire d'amour de Steve Marshall pour les insectes a débuté, puisqu'il ne peut se remémorer un temps où il ne collectionnait pas les insectes. Dès l'âge de 5 ou 6 ans, il hébergeait une collection de coléoptères dans un meuble à tiroirs avec de la mousse dans le fond, et il a tout simplement continué. Dans sa jeunesse, son intérêt et ses habiletés dans l'identification des insectes a été nourris par ses interactions avec Scotty Allen et David Pengelly de l'Université de Guelph. Steve Marshall a complété un baccalauréat (Agr) à cette université en 1977, suivi d'une maîtrise à Carleton (1979) sous la supervision de Henry Howden. Il est ensuite retourné à Guelph pour son doctorat (1982) avec David Pengelly. Dr Marshall a joint l'Université de Guelph la même année de la défense de son doctorat, et a assuré la direction de la collection d'insectes de l'Université de Guelph.

Sous son leadership, le labo de systématique

1977, followed by an MSc at Carleton (1979) under the direction of Henry Howden. He returned to Guelph for his PhD (1982) with David Pengelly. Dr Marshall joined the faculty of the University of Guelph in the same year that he defended his PhD, and assumed directorship of the University of Guelph Insect Collection.

Under his leadership, the University of Guelph Insect Systematics Lab has become an internationally renowned centre for systematic/taxonomic research on Diptera, and the University of Guelph Insect Collection has grown to be among the top four largest insect collections in Canada. The collection has major holdings of Canadian (especially Ontario) insects and worldwide Diptera, making it an invaluable resource for both Canadian and international researchers. He and his lab played a major role as contributors (11 chapters) to the *Manual of Central American Diptera*, a milestone project of taxonomic research on Neotropical Diptera. Dr Marshall is continuing his international endeavors as a contributor to the *Manual of Afrotropical Diptera* (in preparation). He has completed 149 peer reviewed publications (78 as senior author), 21 book chapters and books (15 as senior author) and 39 non-peer reviewed publications.

Steve Marshall is an inspired and inspirational teacher, who has introduced hundreds of undergraduates to the fascinating world of insects, leading many to pursue entomological careers of their own. In his teaching, he has carried on Pengelly's philosophy of encouraging entomology students to develop a broad, comprehensive knowledge of many different taxa, not just of their particular research groups. Dr Marshall has supervised 9 PhD and 21 MSc students and several postdoctoral fellows, dealing mostly with taxonomy and systematics, but also with insect biogeography, ecology and faunistics. As a result of this, there is now a generation of students with extensive knowledge of the Insecta spread across Canada, the United States and elsewhere, employing their knowledge in a spectrum of careers.

Steve Marshall has had a significant impact

des insectes de l'Université de Guelph est devenu un centre renommé internationalement pour la recherche en systématique/taxonomie des Diptères, et la collection d'insectes de l'Université de Guelph a grossi jusqu'à être parmi les 4 plus grandes collections d'insectes au Canada. La collection possède un grand nombre d'insectes canadiens (particulièrement d'Ontario) et de Diptères du monde, en faisant une ressource inestimable pour les chercheurs canadiens et internationaux. Lui et son labo jouent un rôle majeur comme contributeurs (11 chapitres) au *Manual of Central American Diptera*, un projet phare de recherche taxonomique sur les Diptères néo-tropicaux. Dr Marshall poursuit ses efforts internationaux en tant que contributeur au *Manual of Afrotropical Diptera* (en préparation). Il a complété 149 publications évaluées par les pairs (78 en tant qu'auteur sénior), 21 chapitres de livres et livres (15 en tant qu'auteur sénior) et 39 publications non évaluées par les pairs.

Steve Marshall est un enseignant inspiré et inspirant, qui a introduit des centaines d'étudiants de premier cycle au monde fascinant des insectes, en menant plusieurs à poursuivre des carrières entomologiques. Dans son enseignement, il a suivi la philosophie de Pengelly d'encourager les étudiants en entomologie à développer une connaissance globale et vaste de différents taxons, pas seulement leur groupe particulier de recherche. Dr Marshall a supervisé 9 étudiants au doctorat et 21 à la maîtrise, ainsi que plusieurs post-doctorats, principalement en taxonomie et systématiques, mais également en biogéographie, écologie et faunistique des insectes. Il y a donc maintenant une génération d'**étudiants avec une connaissance extensive des insectes** au travers du Canada, des États-Unis, et ailleurs, employant leurs connaissances dans diverses carrières.

Steve Marshall a eu un impact important sur la publication entomologique au Canada en tant que fondateur et éditeur-en-chef du *Canadian Journal of Arthropod Identification*, la première revue taxonomique entièrement numérique au monde. Son format électronique et libre d'accès donne l'opportunité de publier

on entomological publishing in Canada as founder and editor-in-chief of the Canadian Journal of Arthropod Identification, the first fully digital taxonomic journal in the world. Its electronic, and open access, format provides opportunities for the publication of richly illustrated taxonomic treatments of arthropods, which are accessible to all.

Steve Marshall's encyclopedic knowledge of insects and skill as an insect photographer are legendary. Among both interested lay people and scientists, Steve Marshall is renowned for three highly acclaimed books, in which he published thousands of his magnificent photographs of insects. "*Insects – Their Natural History and Diversity*" (2006) provides identification guides to eastern North American insects (718 pp., with over 4000 photographs and 27 picture keys), and been widely adopted as an entomology textbook. In "*Flies: The Natural History and Diversity of Diptera*" (2012), Steve gives a riveting in-depth overview of the diversity of life histories and habitats of Diptera (616 pp., with over 2000 photographs and ten picture keys). In "*500 Insects: A Visual Reference*" (2008), 500 of the most fascinating insects worldwide are portrayed and presented to a general audience (528 pp., with 500 photographs).

A former President of both the Entomological Societies of Canada and Ontario, Steve Marshall has also served for many years on the Scientific Committee of the Biological Survey of Canada, as a member of the arthropod sub-committee of COSEWIC (Committee on the Status of Endangered Wildlife in Canada) as well as COSSARO (Committee on the Status of Species at Risk in Ontario). Steve Marshall also actively communicates entomology to a broad audience through involvement in citizen science projects, such as the Canadian Nature Federation's ladybug survey, and the generous sharing of his photographs with other authors, and in support of online efforts, such as the Tree of Life Web Project.

des traitements taxonomiques richement illustrés d'arthropodes, accessibles à tous.

Les connaissances encyclopédiques des insectes de Steve Marshall, ainsi que ses talents comme photographe d'insecte sont légendaires. Parmi les amateurs intéressés autant que les scientifiques, Steve Marshall est connu pour trois livres acclamés, dans lesquels il a publié des milliers de ses magnifiques photographies d'insectes. "*Insects – Their Natural History and Diversity*" (2006) fournit des guides d'identification pour les insectes de l'est de l'Amérique du Nord (718pp. avec plus de 4000 photographies et 27 clés illustrées), et a été largement adopté comme manuel d'entomologie. Dans "*Flies: The Natural History and Diversity of Diptera*" (2012), il donne un aperçu en profondeur de la diversité des histoires de vie et habitats des Diptères (616 pp., avec plus de 2000 photographies et dix clés illustrées). Dans "*500 Insects: A Visual Reference*" (2008), 500 des insectes les plus fascinants au monde sont représentés et présentés à un public général (528 pp., avec 500 photographies).

Ancien président des sociétés d'entomologie du Canada et de l'Ontario, Steve Marshall a également servi de nombreuses années sur le comité scientifique de la Commission biologique du Canada, comme membre du sous-comité des arthropodes de la COSEPAC (Comité sur la situation des espèces en péril au Canada) et de la COSSARO (Comité sur la situation des espèces en péril en Ontario). Steve Marshall communique également de façon active l'entomologie à une audience variée via son implication dans des projets de science citoyenne, tel que le questionnaire sur les coccinelles de la *Fédération canadienne de la nature*, et le partage généreux de ses photographies avec d'autres auteurs, et en soutenant des efforts en ligne tel que projet sur Internet *Tree of Life*.



C. Gordon Hewitt Award

Chris Cutler

The C. Gordon Hewitt Award is presented by the Entomological Society of Canada for outstanding achievement in Canadian entomology by a researcher under the age of 40 years. The 2013 recipient of this award is Dr Chris Cutler.

Dr Cutler is currently an Associate Professor in the Department of Environmental Sciences, Dalhousie University (formerly Nova Scotia Agricultural College). In the short time since 2007, when he was appointed a faculty member, Chris Cutler has made superior research contributions, demonstrated excellent skills as a mentor of younger scientists, and shown a high level of productivity and success. Chris Cutler's research program has made important contributions to our basic understanding of insect toxicology and the impact of hormesis in insect populations, as well as to the blueberry industry through his research on integrated pest management and agroecology. Dr Cutler's research program has a remarkable balance between regional concerns (with the integration of many projects examining blueberry crop protection), and basic science, drawing on larger theoretical questions such as hormesis.

Originally from King's Point, Newfoundland, Dr Cutler obtained his BSc in Biology at

Prix C. Gordon Hewitt

Chris Cutler

Le prix C. Gordon Hewitt est remis par la Société d'entomologie du Canada pour des accomplissements remarquables en entomologie canadienne par un chercheur de moins de 40 ans. Le récipiendaire 2013 de ce prix est Dr Chris Cutler.

Dr Cutler est présentement professeur agrégé au département des sciences environnementales de l'Université Dalhousie (anciennement le Collège agricole de Nouvelle-Écosse). Dans la courte période depuis 2007, quand il a obtenu son poste de professeur, Chris Cutler a apporté des contributions supérieures en recherche, démontrant ses excellentes habiletés en tant que mentor de jeunes scientifiques, et a montré un haut niveau de productivité et de succès. Le programme de recherche de Chris Cutler a apporté d'importantes contributions à notre compréhension de base de la toxicologie des insectes et de l'impact de l'hormèse dans les populations d'insectes, ainsi qu'à l'industrie du bleuët via ses recherches sur la lutte intégrée et l'agro-écologie. Le programme de recherche de Dr Cutler possède un équilibre remarquable entre les questions régionales (avec l'intégration de plusieurs projets examinant la protection des bleuëts) et la science fondamentale, s'intéressant à des questions plus théoriques comme l'hormèse.

Originellement de King's Point à Terre-Neuve, Dr Cutler a obtenu son baccalauréat en biologie à l'Université Memorial (1997). Il a ensuite traversé le pays pour compléter un MPM (2002) à l'Université Simon Fraser en gestion des ravageurs et en nématologie sous la direction de John Webster, suivi d'un doctorat en entomologie et toxicologie à l'université de Guelph (2006) sous le mentorat de Cinthia Scott-Dupree. Ceci a fourni à Dr Cutler une large gamme d'expérience dans la communauté entomologique au Canada, et des collaborations dans tous le Canada. Il a occupé deux postes en recherche (en tant qu'associé

Memorial University (1997). He subsequently 'crossed country' to complete a MPM degree (2002) from Simon Fraser University in pest management and nematology under the supervision of John Webster, followed by a PhD in entomology and toxicology at the University of Guelph (2006) under the mentorship of Cynthia Scott-Dupree. This has provided Dr Cutler with a broad range of experience in the entomological community in Canada, and collaborations across Canada. He held two research positions (as a Research Associate at the University of Guelph and an NSERC Post-doctoral Fellow at the University of British Columbia), before being appointed as an Assistant Professor and Industry Research Chair in Wild Blueberry Entomology in the Department of Environmental Sciences, Dalhousie University in 2007.

Chris Cutler has produced meritorious contributions to entomological scholarship in Canada. Dr Cutler has been recognized nationally for his research in sustainable agriculture (recipient of the 2010 Agricultural Institute of Canada Sustainable Futures Award), and his research is strongly geared towards ecological methods that suppress pest species while conserving beneficial insects. Dr Cutler has a strong track record of publication (e.g., 11 papers in 2012, with a total of 30 published, accepted or submitted), obtaining research funds (> \$1.2 million since 2008), and delivering practical insect pest management knowledge and solutions to growers and stakeholders who support his research. As an industrial research chair, his role includes significant interaction and advisory roles (public relations, advisory committees and direct extension) with commodity groups and extension specialists.

Chris Cutler has been engaged in dedicated and fruitful service in the field of entomological education in Canada. This includes extension training for industry, public affairs and identification services, and teaching courses in general entomology, economic entomology and pest management at both the graduate and undergraduate level. He has a very active research program with six current graduate

de recherche à l'Université de Guelph et de post-doctorant avec une bourse du CRSN à l'Université de Colombie-Britannique), avant d'obtenir le poste de professeur assistant et la chaire de recherche industrielle en entomologie des bleuets sauvages au département des sciences environnementales de l'Université Dalhousie en 2007.

Chris Cutler a apporté des contributions méritoires à l'éducation entomologique au Canada. Dr Cutler a été reconnu nationalement pour ses recherches en agriculture durable (récipiendaire 2010 du prix de l'avenir durable¹ de l'Institut agricole du Canada) et ses recherches sont fortement orientées vers des méthodes écologiques qui suppriment les espèces de ravageurs tout en conservant les insectes bénéfiques. Dr Cutler a un fort dossier de publications (p. ex. 11 articles en 2012, avec un total de 30 articles publiés, acceptés ou soumis), de fonds de recherche (<1,2\$ millions depuis 2008), et de livraisons de connaissances de la gestion des ravageurs et de solutions pour les producteurs et intervenants qui soutiennent sa recherche. Dans le cadre de la chaire de recherche industrielle, son rôle inclut des interactions importantes et des rôles consultatifs (relations publiques, comités consultatifs et conseils agricoles) avec des groupes de producteurs et des spécialistes agricoles.

Chris Cutler a été engagé dans un service dévoué et productif dans le domaine de l'éducation entomologique au Canada. Cela inclut la formation pour l'industrie, les affaires publiques et les services d'identification, et l'enseignement de cours en entomologie générale, entomologie économique et gestion des ravageurs au premier cycle et pour les étudiants gradués. Il a un programme de recherche très actif avec actuellement six étudiants gradués, un chercheur post-doctoral et de nombreux collaborateurs au niveau national. Il est connu comme étant un excellent mentor et a déjà dirigé 22 étudiants gradués et au premier cycle.

1 Sustainable Futures Award

students, a post-doctoral researcher, and many collaborators nationally. He is known as an excellent mentor and has already supervised 22 graduate and undergraduate research students.

Dr Cutler has also been engaged in long and meritorious service as an active member of the Entomological Society of Canada, providing service on both the Publications and Elections Committees. He served as Co-chair of the Joint Annual Meeting of the Entomological Society of Canada and the Acadian Entomological Society Annual Meeting in Halifax (November 2011), and presently serves as Vice President of the Acadian Entomological Society.

Dr Cutler a également été engagé dans un long service méritoire en tant que membre actif de la Société d'entomologie du Canada, servant sur le comité des publications et des élections. Il a été co-président du comité organisateur de la réunion conjointe annuelle de la Société d'entomologie du Canada et de la Société d'entomologie acadienne à Halifax (novembre 2011), et est actuellement vice-président de la Société d'entomologie acadienne.



A. Jéroux

Swallowtail caterpillar



Criddle Award

Dr Alan Macnaughton

The 2013 recipient of the Norman Criddle Award is Dr Alan Macnaughton. This award recognizes the contribution of an outstanding non-professional entomologist to the furtherance of entomology in Canada.

Alan Macnaughton was nominated by the Entomological Society of Ontario for this award due to his long term (over 40 years!) involvement with the Toronto Entomologists Association (TEA) and outstanding contributions to community-based citizen science. Alan is one of the initiators and drivers of the regional entomological community.

Alan has served as Vice-President of the TEA since 2006, as Treasurer (2005-2006), and since 2004 has administered the TEA website.

Alan is Manager of the TEA Butterfly Atlas and the *Ontario Butterfly Atlas Online* (http://www.ontarioinsects.org/atlas_online.htm), and writes most of the code for this project. The Atlas contains over 195,000 observations dating back to 1969. Alan has been recognized for his significant contributions to the development of the online British Columbia Butterfly Atlas and the Maritimes Butterfly Atlas, by regional citizen-science groups in these areas.

Alan is also a member of the Canadian Ad-

Prix Criddle

Dr Alan Macnaughton

Le récipiendaire 2013 du prix Normal Criddle est Dr Alan Macnaughton. Ce prix reconnaît la contribution exceptionnelle d'un entomologiste non-professionnel à l'avancement de l'entomologie au Canada.

Alan Macnaughton a été nommé par la Société d'entomologie de l'Ontario pour ce prix pour son implication à long terme (plus de 40 ans!) avec l'Association des entomologistes de Toronto (TEA) et ses contributions remarquables aux sciences citoyennes. Alan est un des initiateurs et meneurs de la communauté entomologique régionale.

Alan a occupé les postes de vice-président (depuis 2006) et de trésorier (2005-2006) de la TEA, et il administre depuis 2004 le site Internet de la TEA.

Alan est manager de l'Atlas de papillons de la TEA et de l'Atlas en ligne des papillons de l'Ontario (http://www.ontarioinsects.org/atlas_online.htm), et il écrit la majorité des codes pour ce projet. L'Atlas contient plus de 19,5000 observations depuis 1969. Alan a été reconnu pour ses contributions importantes au développement de l'Atlas en ligne des papillons de Colombie-Britannique et de l'Atlas des papillons des maritimes par des groupes de science citoyenne de ces régions.

Alan est également membre du conseil consultatif administratif canadien pour *eButterfly*, une base de données nationale des papillons.

En terme de rayonnement plus large, il s'est impliqué dans la foire des insectes de l'Ontario et comme orateur dans des événements tels que le *Source of Knowledge Forum* (2011) («Dark Skies, Dark Minds», Tobermory 2011). Les papillons de nuit sont sa spécialité, et il a présenté durant de nombreuses années au Festival «Huron Fringe Birding», dans le parc provincial MacGregor. Ses familles préférées sont les Saturnidés et les Sphingidés.

ministrative Advisory Board for *eButterfly*, a national butterfly records database.

In terms of broader outreach, he has been involved in the Ontario Insect Fair and as a speaker at events such as the Source of Knowledge Forum (2011) (“Dark Skies, Dark Minds”, Tobermory 2011). Moths are a specialty, and he has presented for numerous years at the Huron Fringe Birding Festival, MacGregor Provincial Park. His favourite families are the silk and hawk moths, Saturniidae and Sphingidae.

Alan has organized special TEA publications, including “*The Pipevine Swallowtail: Life Cycle and Ecology*” (2012), “*The Butterflies of Waterloo Region*” (2012), and “*The Bumble Bees of Algonquin Provincial Park: A Field Guide*” (2010).

Alan holds a BA from Wilfrid Laurier and a PhD from UBC. He is employed by the University of Waterloo, where he is an associate professor in the School of Accounting and Finance. He was the recipient of the Queen Elizabeth II Diamond Jubilee Medal, 2012, having been nominated by the Canadian Tax Foundation “for his role as Editor of the Canadian Tax Journal and as a distinguished author of many articles and papers on Canadian tax policy”.

Alan a organisé des publications spéciales de la TEA, incluant “*The Pipevine Swallowtail: Life Cycle and Ecology*” (2012), “*The Butterflies of Waterloo Region*” (2012), et “*The Bumble Bees of Algonquin Provincial Park: A Field Guide*” (2010).

Alan détient un BA de Wilfrid Laurier et un doctorat de UBC. Il est employé par l’Université de Waterloo, où il est professeur agrégé au département de comptabilité et finances. Il a reçu la médaille du jubilé de diamant de la reine Elizabeth II en 2012, ayant été nommé par la Fondation canadienne de fiscalité « pour son rôle comme éditeur de la *Revue fiscale canadienne* et auteur distingué de plusieurs articles sur la politique des taxes canadiennes » (traduction libre).





Bert and John Carr Award

Dr Leonid Borysenko

The 2013 recipient of the Entomological Society of Canada Bert and John Carr Award is Dr Leonid Borysenko. The Bert and John Carr Award is a cash award to given to support research activities on the faunistics, natural history or taxonomy of Canada's insect fauna.

Dr Borysenko will use this award to support the creation of a "Checklist of the Ants of Canada (Hymenoptera: Formicidae)". Although ants are one of the most well-studied groups of insects, Canada is still among those few countries in the world which do not have checklist of their ant fauna. A comprehensive checklist exists only for the ants of British Columbia, while preliminary checklists exist for the ants of Manitoba and Yukon.

Dr Borysenko has had a great passion for insects (especially ants!) since childhood. After graduating from Kiev National University, Ukraine, in 1999, where he received his MSc in Zoology, he worked for 2 years at the Institute of Zoology, National Academy of Sciences of the Ukraine. During that time, he gained experience in taxonomic research, as well as laboratory and field experience, with various insects. He then moved to the Institute of Molecular Biology, National Academy of Sciences of

Prix Bert et John Carr

Dr Leonid Borysenko

Le récipiendaire 2013 du prix Bert et John Carr de la Société d'entomologie du Canada est Dr Leonid Borysenko. Le prix Bert et John Carr est un prix monétaire remis afin de soutenir les activités de recherche sur la faunistique, l'histoire naturelle ou la taxonomie de la faune entomologique du Canada.

Dr Borysenko utilisera ce prix afin de soutenir la création d'une liste des espèces de fourmis (Hymenoptera: Formicidae) du Canada. Bien que les fourmis soient un des groupes d'insectes les plus étudiés, le Canada est encore parmi les quelques pays dans le monde à ne pas posséder de liste de ses fourmis. Une liste complète n'existe que pour la Colombie-Britannique, alors que des listes préliminaires existent pour les fourmis du Manitoba et du Yukon.

Dr Borysenko est passionné par les insectes (particulièrement les fourmis!) depuis son enfance. Après avoir gradué de l'Université Nationale de Kiev en Ukraine en 1999, où il a reçu sa maîtrise en zoologie, il a travaillé 2 ans à l'Institut de zoologie à l'Académie nationale des sciences d'Ukraine. Pendant cette période, il a acquis de l'expérience en recherche taxonomique, ainsi qu'en laboratoire et sur le terrain, avec de nombreux insectes. Il a ensuite travaillé à l'Institut de biologie moléculaire de l'Académie nationale des sciences d'Ukraine sur des projets de génomique et il a obtenu son doctorat en 2004 en biologie moléculaire. Depuis son immigration au Canada en 2010, Dr Borysenko s'est dévoué comme entomologiste amateur bénévole d'abord à la collection entomologique Spencer du musée Beaty de la biodiversité, à l'Université de Colombie-Britannique, et depuis décembre 2011 à la Collection nationale canadienne à Ottawa. Il a apporté des contributions importantes à la conservation, triant et identifiant les collections de fourmis dans les deux institutions. Son travail comme conservateur bénévole à la CNC jusqu'à maintenant a impliqué l'identification

the Ukraine, to work on genomics projects and obtained his PhD in Molecular Biology in 2004. Since his immigration to Canada in 2010, Dr Borysenko has worked dedicatedly as a volunteer, amateur entomologist, first at the Spencer Entomological Collection, Beaty Biodiversity Museum, at the University of British Columbia, and since December 2011 at the Canadian National Collection, Ottawa. He has made significant contributions to the curation, sorting and identification of the ant collections at both institutions. His work to date as a volunteer curator at the CNC has involved the identification (at least to genus) of ~20 000 specimens from both alcohol and pinned collections, the updating of names and sorting of specimens according to the latest classifications. This prior work has laid the foundation for the proposed project, and the Carr Award will allow Dr Borysenko to continue in his “great passion” and lend his taxonomic expertise to the creation of a checklist of Canadian ants.

(au moins au genre) de ~ 20,000 spécimens dans l’alcool et épinglés, la mise à jour des noms et le tri des spécimens selon la dernière classification. Ce travail a posé les bases pour le projet proposé, et le prix Carr permettra à Dr Borysenko de continuer sa grande passion et mener son expertise taxonomique à la création d’une liste des fourmis canadiennes.



People in the news / Gens qui font les manchettes

Paul Abram and Marie-eve Lanteigne winners at Third International Entomophagous Insects Conference

On 2-6 June 2013, the Third International Entomophagous Insects Conference (IEIC) was held in Magog, Quebec, with Guy Boivin (Agriculture and Agri-Food Canada, St-Jean-sur-Richelieu) and Jacques Brodeur (University of Montreal) as co-organizers. Since 2009, the IEIC has alternated between Europe and America every 2 years. The meeting, which this year attracted about 100 participants from 17 countries, presents current research on insect predators and parasitoids. Five invited speakers presented highly interesting plenary lectures on subjects as diverse as biodiversity, biological control, reproduction, behavioral ecology and genomics. The conference was extremely interesting and productive both scientifically, with about 60 talks and 35 posters, and socially, with Quebec cheese and beer tasting at the opening cocktail party at the Botanical Garden of Montreal, a campfire (complete with marshmallow eating competition!), a banquet followed by a great (though exhausting) night of dancing, and an afternoon for discovering Magog's attractions or hiking in Mont-Orford National Park.

A prize was awarded for both the best student talk and the best student poster; the ESC and Centre Sève sponsored these awards. The awards for the best student presentations were given to Paul Abram (University of Montreal; Agriculture and Agri-Food Canada, St-Jean-sur-Richelieu), for his talk on a native parasitoid's behaviour towards eggs of the brown marmorated stink bug, and to Marie-eve Lanteigne (University of Montreal; Agriculture and Agri-Food Canada, St-Jean-sur-Richelieu), for her poster on the effect of partial plant resistance in lettuce on natural enemies of an aphid. Honorable mention was made for the second best talk and poster to Fanny Maure (University of Montréal; MIVEGEC, France) and Keita Higashida (Kinki University Nara, Japan), respectively.

Don't miss the next IEIC, which will take place in Spain in 2015!



From left to right: Marie-eve Lanteigne (best poster), Fanny Maure (second best talk), Jacques Brodeur (representing Centre Sève), Keita Higashida (second best poster), Paul Abram (best talk) and Michel Cusson (representing the ESC).



Charles Vincent honored (again!)

In the June 2013 Bulletin (p.63), we were delighted to announce that in December 2012 Charles Vincent had been elected a Foreign Member of the Académie d'Agriculture de France. We can now report with equal pleasure that two more honours have come his way.

On 18 March 2013, the Entomological Society of America (Eastern Branch) presented the "L.O. Howard Distinguished Achievement Award" to Charles Vincent during its meeting held at Lancaster, Pennsylvania. ESA(EB) President Chris Bergh presented a plaque to Charles which reads "L.O. Howard Distinguished Achievement Award presented to Charles Vincent in recognition of his scientific research on pest management in agricultural systems, his high quality of teaching, and an extensive record of contributions to the literature comprising more than 570 peer-reviewed and other publications."

Then, on 31 July 2013, it was announced that the Governing Board of the ESA had elected 10 new Fellows of the Society for 2013, including Charles. Election as a Fellow acknowledges outstanding contributions to entomology in one or more of the following: research, teaching, extension, or administration. Charles and the other Fellows will be recognized during Entomology 2013 -- ESA's 61st Annual Meeting -- which will be held 10-13 November 2013 in Austin, Texas.

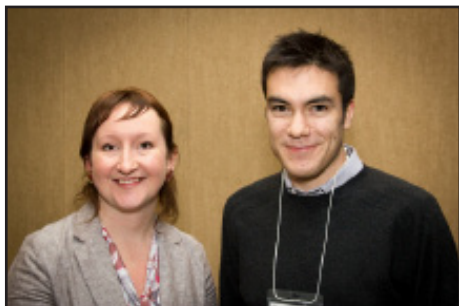
Charles Vincent honoré (encore !)

Dans le Bulletin de la SEC (Juin 2013, p. 63), nous étions ravis d'annoncer que Charles Vincent a été élu Membre étranger de l'Académie d'Agriculture de France. Nous rapportons ici avec un plaisir renouvelé qu'il a reçu deux autres distinctions.

Le 18 mars 2013, la Entomological Society of America (Eastern Branch) a décerné le «L.O. Howard Distinguished Achievement Award» à Charles lors de sa réunion à Lancaster, en Pennsylvanie. Chris Bergh, président de la ESA-(EB), a présenté à Charles une plaque qui porte l'inscription «L.O. Howard Distinguished Achievement Award, présenté à Charles Vincent pour ses travaux de recherche sur la lutte antiparasitaire dans les systèmes agricoles, son enseignement de qualité et sa contribution importante aux publications, soit à plus de 570 articles évalués par les pairs et autres publications» (traduction).

Le 31 juillet 2013, la Entomological Society of America a annoncé l'élection de 10 nouveaux Fellows de la ESA, incluant Charles. L'élection au titre de Fellow de la ESA souligne des contributions exceptionnelles à l'entomologie dans un ou plusieurs des domaines suivants : recherche, enseignement, vulgarisation ou administration. Charles et les nouveaux Fellows seront reconnus lors de la 61^{ème} réunion annuelle de la ESA qui se tiendra les 10-13 novembre 2013 à Austin, Texas.

The student wing / L'aile étudiante Boyd Mori and Chandra Moffat



Hello! The end to summer is approaching fast and I know I say it every year, but it went extremely quickly. Whether you were out in the field, in the laboratory, writing manuscripts or your thesis, I hope you were all able to accomplish your goals. Don't forget the Joint Annual Meeting between the ESC and ESO is approaching quickly with the deadline to submit a presentation on 15 September. The JAM is hoping to be one for the record books, so start analyzing your data and hopefully we will see you at the JAM. If you are closing in on the end of your program (or recently graduated), remember to apply for the newly revamped Graduate Student Showcase to be held on Sunday, 20 October, directly following the Plenary Session. If you are in need of a roommate try the Student Affairs Committee roommate registry at escjam2013roommates@gmail.com. Finally, get on your friends and supervisors and ask them to donate items to the Silent Auction which raises money for the ESC Scholarship and Awards fund. If you have items please bring them with you to the Meeting and drop them off at the Silent Auction tables (near the Registration Desk). For large or heavier items, or if you would like to ship your donations in advance (please note, shipping charges will not be reimbursed), please send them to:

Morgan Jackson
Bovey 1216/1217
School of Environmental Sciences
University of Guelph
50 Stone Road, E.
Guelph, ON, N1G 2W1

Bonjour! La fin de l'été approche rapidement et je sais que je le dis chaque année, mais il a passé extrêmement vite. Que vous soyez sur le terrain, dans le labo, ou en train d'écrire des manuscrits ou votre thèse, j'espère que vous avez tous atteint vos objectifs. N'oubliez pas la réunion conjointe annuelle de la SEC et de la SEO qui approche à grands pas avec la date limite pour la soumission d'une présentation le 15 septembre. La réunion souhaite battre des records, alors commencez à analyser vos données et nous espérons vous voir à la réunion annuelle. Si vous terminez votre programme (ou avez récemment gradué), n'oubliez pas d'appliquer pour la nouvellement revampée Vitrine aux étudiants gradués qui se tiendra le dimanche 20 octobre, tout de suite après la session plénière. Si vous cherchez un coloc, essayez le registraire des colocs du comité des affaires étudiantes à escjam2013roommates@gmail.com. Finalement, demandez à vos amis et directeurs de donner pour les enchères silencieuses qui amassent des fonds pour le Fonds des prix et bourses étudiants de la SEC. Si vous avez des objets à donner, merci de les apporter avec vous à la réunion et de les déposer aux tables des enchères silencieuses (près de la table d'inscription). Pour des objets pour gros ou plus lourds, ou si vous souhaitez envoyer vos dons à l'avance (veuillez noter que les frais d'envois ne seront pas remboursés), merci de les envoyer à :

Morgan Jackson
Bovey 1216/1217
School of Environmental Sciences
University of Guelph
50 Stone Road, E.
Guelph, ON, N1G 2W1

Assurez-vous de consulter la page Facebook des étudiants de la SEC ainsi que le site Internet de la SEC pour des informations sur les opportunités de recherche. Le comité des affaires étudiantes est votre voix étudiante auprès de la Société d'entomologie du Canada. Si vous avez des questions, commentaires ou suggestions sur des sujets d'intérêt pour les

Be sure to check out the ESC Student Facebook page, as well as the ESC website for information on research opportunities. The SAC is your student voice to the Entomological Society of Canada. If you have any questions, comments, or suggestions about student concerns, feel free to email us at students@esc-sec.ca.

See you at the meeting!

Boyd & Chandra

étudiants, veuillez nous les envoyer à students@esc-sec.ca.

Au plaisir de vous voir à la réunion!

Boyd & Chandra

Thesis Roundup / Foisonnement de thèses

As always, we like to know when a student defends their thesis. If you (or anyone you know of) have defended your thesis recently, please send us your name, degree and date achieved, thesis title, supervisor's name, university and email address to me at students@esc-sec.ca.

Comme toujours, nous aimons savoir quand un étudiant soutient sa thèse. Si vous (ou quelqu'un que vous connaissez) avez soutenu votre thèse récemment, merci d'envoyer les noms, diplôme, date d'obtention, titre de thèse, nom du directeur, université et adresse courriel à students@esc-sec.ca.

Anstead, Clare A. PhD, 2013. Comparison of the ticks and tick-borne bacteria of small mammals in western Canada. Supervisor: Neil Chilton, University of Saskatchewan

Research Tools for Field & Lab

- **Field sampling equipment**
- **Microscopes**
- **Data Loggers for temperature, pressure, humidity**
- **Weather stations**



onset
HOBO Data Loggers

Nikon

**HOSKIN
SCIENTIFIC**

LaMotte

WILDCO®

Hoskin Scientific Ltd. www.hoskin.ca Vancouver | Burlington | Montreal

(paid advertisement/ publicité payée)

Five decades of entomology come to an end: Winnipeg Research Station – Cereal Research Centre, 1957-2013

Bob Lamb, Noel White, Ian Wise, Marj Smith, Colin Demianyk

The Cereal Research Centre (CRC) of Agriculture & Agri-Food Canada (AAFC) will close in early 2014, after 90 years on the campus of the University of Manitoba in Winnipeg. The facility opened in 1924 as the Dominion Rust Research Laboratory, in response to devastating rust outbreaks. Research focused on plant pathology and cereal breeding from the beginning, and on entomology since 1957. The final year of operation is an opportune time to remember CRC entomologists and review their contributions. This summary is based on staff lists prepared by Brent McCallum, CRC, earlier accounts (Bird 1963, Loschiavo 1990), biographies in *Entomologists of Manitoba* (Riegert 1989), and publications and memories of those who worked at CRC.

The first Entomology Section, led by Ralph Bird, was formed in 1957 when the Stored Product Insect Laboratory, Winnipeg, and the Field Crop Insect Laboratory, Brandon, relocated to the Research Station. In recognition of the amalgamation of three units in a new building, the laboratory was renamed the Winnipeg Research Station (WRS) in 1959. The next big change came in 1972 with the closing of the Entomology Research Institute, Belleville, Ontario, and transfer of many of its staff to WRS. The newcomers formed the Integrated Pest Management Section led by Bill Turnock, existing in parallel with the already established Crop Protection Section led by Fred Watters. The sections were reorganized as Stored Products and Integrated Pest Control in 1983, only to be recombined as a Crop Protection Section 6 years later. In 1995, budget cuts resulted in a substantial reduction to the entomology program, achieved primarily by transferring all research on non-cereal crops to the Saskatoon Research Centre. A number of entomologists were forced to take early retirement, or did so voluntarily, to avoid moving late in their careers. Those remaining joined the Cereal Quality Protection Section or the Cereal Breeding Section in the renamed Cereal Research Centre.

In 1957, 10 entomologists began research at WRS (Table 1) out of a total scientific staff of 36. These numbers include two AAFC employee categories: Research Scientists who direct a research program and Biologists who carry out independent research under the direction of a Research Scientist, but not technicians or other support staff. When the Integrated Pest Management Section was formed in 1972, WRS had 18 entomologists. Scientific staff peaked 4 years later at 46, including 16 entomologists. A decade later, six stored-product entomologists and eight crop protection entomologists were still active. By 1996, after reductions to the field crop entomology program, six entomologists remained. The last Research Scientist working on entomology of field crops retired in 2003 and was not replaced, leaving two Biologists working with wheat breeders on resistance to wheat midge, and three stored-product entomologists. When CRC closes, three stored-product entomologists will continue to be employed by AAFC, in rental space at the University of Manitoba.

Over the years, many technicians, visiting scientists, graduate students and summer students contributed greatly to entomology at WRS-CRC. The highlights of the contributions of all the entomologists to agriculture and to the scientific literature are described below.

Stored-Product Entomology

In the first 30 years after 1957, stored-product entomologists at WRS focused on pest control

Bob Lamb (Lambmack@mts.net) and co-authors are in the Cereal Research Centre, Agriculture & Agri-Food Canada, Winnipeg.

Table 1. Entomologists employed as Research Scientists or Biologists* at the Winnipeg Research Station – Cereal Research Centre, 1957 – 2013.

	Start Year	End Year	Degree
Allen, W.R.	1957	1973	PhD (Minnesota)
Ayre, G.L.	1972	1989	MSc (British Columbia)
Barker, P.S.	1965	1993	PhD (McGill)
Berck, B.	1957	1977	MSc (Manitoba)
Bird, R.D.	1957	1966	PhD (Illinois)
Bodnaryk, R.P.	1972	1992	PhD (Waterloo)
Bracken, G.K.	1972	1991	PhD (Manitoba)
Bucher, G.E.	1972	1981	PhD (Ohio State)
Chopra, N.M.	1960	1965	PhD (Dublin)
Cole, T.V.	1957	1966	MSc (Manitoba)
Demianyk, C.J.*	1980	present	MSc (Manitoba)
Fields, P.G.	1988	present	PhD (Laval)
Forsyth, F.R.	1958	1959	PhD (Toronto)
Gerber, G.H.	1972	1996	PhD (Saskatchewan)
Grussendorf, O.W.	1962	1970	PhD (Leipzig)
Hegdekar, B.M.	1972	1984	PhD (Baroda)
Lamb, R.J.	1978	2003	PhD (British Columbia)
Liscombe, A.E.R.	1957	1965	PhD (Manitoba)
Loschiavo, S.R.	1957	1987	PhD (Manitoba)
McGinnis, A.J.	1966	1972	PhD (Oregon)
Morris, O.N.	1982	1988	PhD (Rutgers)
Osgood, C.E.	1972	1976	PhD (Oregon State)
Pachagounder, P.	1986	1995	PhD (Memorial)
Richardson, H.P.	1957	1966	PhD (Manitoba)
Romanow, W.*	1957	1987	MSc (Manitoba)
Sinha, R.N.	1957	1993	PhD (Kansas)
Smith, L.B.	1960	1986	PhD (Nottingham)
Smith, M.A.H.*	1996	2013	PhD (Manitoba)
Timlick, B.*	1992	1997	MSc (Manitoba)
Turnock, W.J.	1972	1993	PhD (Minnesota)
Watters, F.L.	1957	1981	PhD (Manitoba)
Westdal, P.H.	1957	1981	PhD (Manitoba)
White, N.D.G.	1981	present	PhD (Manitoba)
Wise, I.L.*	1988	2013	MSc (Simon Fraser)
Wylie, G.H.	1972	1987	PhD (Oxford)

using fumigants, detecting low densities of insects in grain bulks, and the basic biology needed to understand stored-product pests (Fig. 1) (Loschiavo 1990). Sam Loschiavo made important contributions to sampling stored product insects and to understanding the feeding biology of the pests (Baker and Loschiavo 1987). His escape-proof, pit-fall, probe trap allowed effective sampling of bulk grain. Versions of his trap continue to be manufactured and used in many countries to detect living insects in stored grain. Lawrie Smith's research on the cold tolerance of the 10 most important species of stored-product insects set the stage for the use of ambient air to cool and protect grain. After earlier work on DDT and fumigants, Phil Barker spent many years conducting developmental studies of mites in stored grain. Upon retirement he continued volunteering at CRC, turning his attention to pests of wheat in the field, particularly the wheat midge (see below). Ron Sinha pioneered a community ecology and whole system approach for stored products. He developed a long-term collaboration with Bill Muir in the Agricultural Engineering Department, University of Manitoba (Sinha and Muir 1973). This research led to an improved understanding of the role of insects, mites and fungi in the heating of stored grain, and ultimately the introduction of aeration technology to dry and cool grain stores (Sinha and Watters 1985). His work was recognized with a Gold Medal from the Entomological Society of Canada in 1985.



Figure 1. The Stored-product Section, 1984, front row: N. White, D. Abramson, R. Sinha; second row: M. Barron, G. Hamilton, R. Jenkins, P. Barker, J. Bell; third row: S. Loschiavo, L. Smith, T. Thorsteinson; top row: C. Demianyk, J. Mills.

Since Ron Sinha's retirement, this work has been expanded by Noel White in collaboration with Digvir Jayas at the now Biosystems Engineering Department, University of Manitoba. Over the years they have co-supervised 75 MSc and PhD students on aspects of stored grain management, usually including an entomological component. Recent studies used CAT scans to measure intergranular space in grain bulks, MRI to measure and then model moisture changes in single grains, and X-rays to detect insects in grain kernels. This collaboration was recognized by the 2008 NSERC Brockhouse award for outstanding interdisciplinary research. Their work improved monitoring and control of insect pests infesting bulk stores of food (White 1995).

Paul Fields was hired in 1988 to work on the eco-physiology of stored-product insects. With colleagues, he has developed pest control strategies based on diatomaceous earths and a patented legume extract, and continues to test botanicals as control agents. He has worked extensively on heat and cold treatments to disinfect food products at various points in the food production system (Fields 1992), and is active in developing and promoting alternatives to methyl bromide in flour mills as this ozone depleting substance is phased out as a fumigant (Fields and White 2002). Recently, he developed an application for mobile phones to identify stored-product insects, in collaboration with colleagues at the Canadian Grain Commission. The stored-product

entomologists working at CRC recently are shown in Fig. 2.

Field Crop Entomology

At WRS-CRC research on field crop entomology went through three phases: testing chemical pesticides and pest monitoring systems; developing economic thresholds and more precise monitoring tools for farmers, studying pest biology to identify novel control strategies, and biocontrol; and developing crops resistant to key pests of field crops.

When Harold Westdal arrived at the Research Station in 1957, he continued his groundwork research on sunflower pests. Wally Romanow continued the Manitoba grasshopper survey first established by Norman Criddle at the beginning of entomology in western Canada (Bird 1963). When the new oilseed rape crop (canola) became important in the early 1970's, Harold Westdal developed an insecticidal control program for the key pest, flea beetles. This control program became a standard for the new industry and set the stage for research that came with the influx of entomologists in 1972.

When Bill Turnock arrived as Section Head of Integrated Pest Management with the group of entomologists from Belleville, he brought with him an ecological perspective from his time in forest entomology, and an enthusiasm for multi-disciplinary research and a systems approach. Many of the entomologists that arrived with him were physiologists or biochemists and few had backgrounds studying insect pests of field crops. As a group they decided to focus on the diverse pests of oilseed rape (canola), especially as the area sown to this new crop was growing rapidly, and new pests seemed to be attacking the crop each year. Garth Bracken, a physiologist and biochemist, and Gord Bucher, an insect virologist, began a series of studies on bertha armyworm. This careful field and laboratory research culminated in a reliable economic threshold for the pest, remarkable in part because the research departed so dramatically from their previous experience, and because it so effectively integrated an understanding of the armyworm's feeding biology with the estimation of a threshold (Bracken and Bucher 1984). A publication from this research described a rearing method for bertha and is still one of the most cited papers in *The Canadian Entomologist*.

Damage assessment and economic thresholds became an important focus for the field crops group. Research was completed on many of the crops and pests important in western Canada: bertha armyworm, flea beetle larvae (Garth Bracken), lygus bugs (Bob Lamb and Ian Wise), and root maggots (Bill Turnock) on canola; aphids on field peas (Bob Lamb), flax (Ian Wise and Bob Lamb), and wheat (Bob Lamb); Hessian fly (Ian Wise) and wheat midge (Bob Lamb, Ian Wise and Marj Smith) on wheat. Once thresholds were established, monitoring systems were often developed to help farmers use them effectively. Graduate students from the Department of Entomology, University of Manitoba, conducted some of this research at WRS-CRC as part of their degree programs.

The damage assessment work was underpinned by research on the life histories and ecology of pests many of which had been little studied in western Canada. Noteworthy was the long term research on red turnip beetle (George Gerber) a native canola pest, and on the seasonality of



Figure 2. The stored-product entomologists, 2008, from upper left to lower right: P. Fields, T. Mayert, C. Demianyk, N. White.

cutworms (Gord Ayre). Initially, cold hardiness was the focus of many studies, with the thought that pest outbreaks might be better predicted and managed if the effects of winter weather were understood. Studies on cold hardiness were completed for red turnip beetles (George Gerber), flea beetles (Bill Turnock and Bob Lamb), and root maggots (Bill Turnock, Bob Bodnaryk and Bob Lamb). Studies on the seasonal timing of pest life histories and the effects of temperature on development were completed to better time control of pests, including bertha armyworm (Gord Bucher and Garth Bracken), red turnip beetle (Bob Lamb and George Gerber), cutworms (Gord Ayre and Bob Lamb), and pea aphids (Bob Lamb and George Gerber). Bob Lamb's contribution to this work was recognized by a Gold Medal from the Entomological Society of Canada in 2002.

Largely as a result of Bill Turnock's enthusiasm for ecological entomology and integrated pest management, this approach remained central to the work as long as a critical mass of entomologists was present in the group. So, the economic thresholds were thought of as a first step, to be integrated with other approaches that might improve pest control and reduce pesticide use. Biological control was actively pursued for flea beetles and pea aphids (Glen Wylie) and root maggots (Bill Turnock). Ozzie Morris transferred to the group in 1982 to investigate the use of *Bacillus thuringiensis* as a bacterial insecticide, focussing on the identification of new strains of *Bt* for use in Prairie agriculture. Bill Turnock's perspective of the insects of the large area field crops of western Canada as an ecological system was well defined for canola early in the development of the group (Turnock 1977). The multidisciplinary and broad ecological approach was a success, rapidly leading to a body of knowledge on insect pests of canola, and their interactions with the new crop (Lamb 1989). Field crop entomologists involved in this work are shown in Fig. 3.

The interest in damage assessment of pests on crops initially focussed on the development of economic thresholds for insecticide applications, but gradually led to a more basic understanding of insect-plant interactions (Bob Lamb and Bob Bodnaryk) and by the mid-1980's to an attempt to develop crop resistance. The first target for crop resistance was flea beetles on canola



Figure 3. Integrated Pest Management Section, 1984, from left to right, first row, ground level: R. Bilodeau, M. Luo, W. Turnock, R. Wilson, W. Romanow, F. Matheson, G. Wylie, I. Toal, R. Bodnaryk; second row, first and second step: G. Ayre, J. Harding, C. Shearer, G. Maiteki, A. Kudryk, R. Lamb, G. Gerber; third row, third step: J. Walkof, M. Trottier, R. Butts, O. Morris, G. Bracken.



Figure 4. Wheat-midge entomologists, 2013, from left to right: S. Wolfe, I. Wise, M. Smith, and R. Lamb.

because control of this pest seemed intractable except by prophylactic applications of systemic insecticides that were gradually being withdrawn from the market. Progress was made (Bob Lamb, Bob Bodnaryk and Swamy Pachagounder), but no breakthrough, and the work on crop resistance to flea beetles stopped at WRS with the cuts to the program in 1995. The remaining entomological expertise on field crops (Bob Lamb, Marj Smith and Ian Wise) was transferred to the wheat program.

At about the same time, the wheat midge appeared to come out of nowhere as a major pest of wheat in Manitoba and Saskatchewan. Phil Barker, a stored-product entomologist who retired in 1991,

continued to volunteer at the WRS-CRC and took an interest in the seed damage that was detected in wheat seeds harvested during the early years of the outbreak. He began looking at samples of wheat seeds from the WRS breeding program, comparing old samples with seeds from the current lines. His focussed interest on seed damage by stored-product pests and his familiarity with the morphology of the seed surface enabled him to recognize a novel type of damage in seeds from winter wheat being tested by the wheat breeder, Ron MacKenzie, for Hessian fly resistance. Phil referred to the seeds with subtle changes in their shape as “tubbies”. The lack of wheat midge larvae on these seeds led Phil and Ron to propose that some winter wheat lines might be resistant to wheat midge. A number of explanations other than crop resistance might have accounted for this phenomenon, but when the potential resistance was investigated further, the original hypothesis proved correct (Harris *et al.* 2003).

The closure of the canola program just when research on crop resistance was beginning to mature, the narrowing of the emphasis of entomology to cereals, the outbreak of wheat midge, and the sudden availability of a Research Scientist (Bob Lamb), two Biologists (Marj Smith and Ian Wise) (Fig. 4), and a number of entomological technicians provided a fortuitous environment for a strong collaboration between entomologists (including Phil Barker) and an enthusiastic, albeit retired, wheat breeder (Ron MacKenzie). The result was the rapid characterization of the *Sml* gene which provides a high level of resistance against wheat midge, and the simultaneous incorporation of the gene in well adapted wheat cultivars by the wheat breeder Stephen Fox. The tradition of ecologically-based entomology research at WRS-CRC influenced the development of crop resistance leading to the adoption of an interspersed refuge based on the mating system and dispersal characteristics of the wheat midge (Berzonsky *et al.* 2003). This refuge system has been adopted by the industry in Canada and should prevent the resistance provided by the *Sml* gene from breaking down due to evolved virulence by the wheat midge.

The Future of Entomology in Manitoba

When CRC closes officially in early 2014, entomological research by Agriculture and Agri-Food Canada in Manitoba will be continued by three stored-product entomologists, Research Scientists, Noel White and Paul Fields, and Biologist Colin Demianyk. They expect to move to the Department of Biosystems Engineering at the University of Manitoba, to continue their collaboration with this agricultural engineering group. The remaining two field crop entomologists, Marj Smith and Ian Wise, were required to take early retirement at the end of March 2013. They will continue as volunteers until the end of 2013, as will Emeritus Research Scientist, Bob Lamb. At that point, no further field crop entomology research will be conducted by Agriculture and Agri-Food Canada in Manitoba. The Province of Manitoba has entomological extension

personnel, but no research staff. When CRC closes in early 2014, research in field crop entomology in Manitoba will be in the hands of the Department of Entomology, University of Manitoba, which has one faculty position designated for this research area.

References

- Baker, J.E. and Loschiavo, S.R. 1987. Nutritional ecology of stored-product insects. *In* Nutritional Ecology of Insects, Mites and Spiders. *Edited by* F. J. Slansky and J.C. Rodriguez. John Wiley and Sons, New York. pp. 321-344.
- Berzonsky, W.A., Ding, H., Haley, S.D., Harris, M.O., Lamb, R.J., McKenzie, R.I.H., Ohm, H.W., Patterson, F.L., Peairs, F.B., Porter, D.R., Ratcliffe, R.H., and Shanower, T.G. 2003. Breeding wheat for resistance to insects. *Plant Breeding Reviews*, **22**: 221-296.
- Bird, R.D. 1963. A history of agricultural entomology in Manitoba. *Proceedings of the Entomological Society of Manitoba*, **19**: 7-11.
- Bracken, G.K. and Bucher, G.E. 1984. Measuring the cost-benefit of control measures for bertha armyworm (Lepidoptera: Noctuidae) infestations in rapeseed. *The Canadian Entomologist*, **116**: 591-595.
- Fields, P.G. 1992. The use of environmental extremes to control stored-product insects and mites. *Journal of Stored Product Research*, **28**: 89-118.
- Fields, P.G. and White, N.D.G. 2002. Alternatives to methyl bromide treatments for stored-product and quarantine insects. *Annual Review of Entomology*, **47**: 331-359.
- Harris, M.O., Stuart, J.J., Mohan, M., Nair, S., Lamb, R.J., Rohfritsch, O. 2003. Grasses and gall midges: Plant defense and insect adaptation. *Annual Review of Entomology*, **48**: 549-577.
- Lamb, R.J. 1989. Entomology of oilseed Brassica crops. *Annual Review of Entomology*, **34**: 211-229.
- Loschiavo, S.R. 1990. Stored products entomology in Canada. *Proceedings of the Entomological Society of Manitoba*, **46**: 33-48.
- Riegert, P.W. 1989. Entomologists of Manitoba. *The Entomological Societies of Canada and Manitoba*. Ottawa and Winnipeg.
- Sinha, R.N. and Muir, W.E. 1973. *Grain Storage: Part of a System*. Avi Publishing Company, Inc., Westport, Connecticut.
- Sinha, R.N. and Watters, F.L. 1985. *Insect Pests of Flour Mills, Grain Elevators, and Feed Mills and their Control*. Agriculture Canada Publication 1776E. Canadian Government Publishing Centre, Ottawa.
- Turnock, W.J. 1977. Adaptability and stability of insect pest populations in prairie agricultural ecosystems. *In* Insect ecology-papers presented in A.C. Hodson Lectures. *Edited by* H. M. Kulman, and H.C. Chiang. University of Minnesota, Minneapolis, **310**: 89-101.
- White, N.D.G. 1995. Insects, mites, and insecticides in stored-grain ecosystems. *In* *Stored Grain Ecosystems*. *Edited by* D. S. Jayas, N.D.G. White, and W.E. Muir. Marcel Dekker, Inc., New York. pp. 123-167.

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 present 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, while in June, the remarkable Quebec priest and naturalist Léon Provancher was documented.

Part III. William Saunders (1836-1914): Co-founder of the ESC and first Director of the Dominion Experimental Farms

Cedric Gillott

William Saunders, Charles Bethune, and Henry Croft were the driving force behind the formation of the Entomological Society of Canada in 1863. All were amateur entomologists at the time of the Society's formation, and while Croft, Professor of Chemistry at University College, Toronto, was to remain as such, Bethune and Saunders rapidly achieved such high standing for their work on insects that both were persuaded to become full-time professionals in the area.

Saunders was born in Crediton, Devon, England, on 16 June 1836, to James Saunders (a shoemaker and Methodist lay preacher) and Jane (Wollacott). At age 12, he emigrated with his family to London, Ontario, joining his older brother Stephen who had moved to Canada some years previously (Stewart 2003).

Details of Saunders' early schooling are few though it is commonly stated that he was educated privately. When he was 19, he began an apprenticeship with a local druggist, John Salter, and within a few months he opened his own pharmacy. This business was highly successful and rapidly expanded into a large wholesale and retail company that produced and distributed natural, plant-derived medicines.

Despite his extremely full business life, Saunders found time to marry (in 1857), a union that first produced a daughter, then five sons, to attend meetings of the Canadian Institute in Toronto where he met Bethune, and to pursue his interest in plants, especially those of medicinal and agricultural importance. Inevitably, the latter led to study of their insect pests (and diseases) and ultimately to a career in entomology.

In the early 1860s Bethune and Saunders became firm friends and corresponded frequently. As well, during summers they would spend time together, collecting, examining, and making notes on specimens they had found in the woods, fields and ponds around London (Bethune 1914). Naturally, over time, they learned of like-minded individuals and in 1862, with the encouragement of Croft, attempted to organise an entomological society (Bethune 1914). As noted in Part I of this series, the Entomological Society of Canada as it was to be known did not materialize until 16 April 1863, with Croft as its first President and Saunders as the Secretary. Saunders became President in 1864 and served in this capacity again from 1876 to 1887, by which time the Society had been renamed the Entomological Society of Ontario (Baker 1939).



William Saunders (from *The Canadian Entomologist* 27: facing page 197 [1895], with permission)

(As an aside, but interesting nevertheless, Saunders' two oldest sons, William [Will] Edwin and Henry Scholey, were also active in the Society. Will, although primarily fascinated by birds, was the Society's Librarian in 1881, became Secretary-Treasurer in 1887, a position he held until the end of 1906, and served on the editorial board of *The Canadian Entomologist* [see below] for 3 years, beginning in 1888. Brother Henry's primary interest was music, though he acted as the Society's Curator for a year [1888-1889] [Baker 1939; Pomeroy 1956].)

Saunders, along with Bethune, began publication of *The Canadian Entomologist* in 1868 (and for the first two issues were the sole contributors!). Bethune was Editor for the journal's first 5 years, with Saunders then taking over until 1886 when he moved to Ottawa (Bethune 1914). During his tenure as Editor, Saunders wrote articles regularly for the journal under the general heading "Popular Papers of Entomology, or Entomology for Beginners", designed to bring information on insects to readers without a technical background (Pomeroy 1956).

In 1869, as a distraction from the increasing pressures of his business, Saunders purchased some 70 acres of land just east of London, with the intention of growing bush and tree fruits, as well as some medicinal plants. In addition, he began experiments on hybridization to produce improved forms of the existing varieties. Saunders frequently published the results of his hybridization work in the Ontario Fruit Growers' Association and exhibited his produce at Association meetings. At the Fall 1885 meeting, for example, Saunders showed 29 grape varieties and 9 seedlings that he had grown (Pomeroy 1956). Yet, he did not neglect the entomological side of things, continuing to produce papers under the general title "Insects Injurious to Fruits". Eventually, these publications were brought together under one roof with Saunders' book of the same title (Saunders 1883). A second edition of this work was published in 1910 and a third was in the making until illness prevented its completion during the last few years of Saunders' life (Bethune 1914). In parallel, Saunders had begun to assemble material for a book on insect pests of field crops, though lack of time and eventually sickness meant that it never saw the light of day (Saunders 1939).

Saunders' expertise even extended into the realm of forestry: he presented papers on forest insects, poplar trees for the manufacture of paper and charcoal, and insect pests of white pine at meetings of the American Forestry Association in 1882 and 1883 (Pomeroy 1956).

Thus, by the early 1880s, Saunders had developed a reputation as Canada's leading authority on agriculture and horticulture. And in November 1885 he received a letter that was to bring about a momentous change both in his life and in the organization of agricultural, horticultural, and forestry research in Canada.

The letter, sent by the Minister of Agriculture, Sir John Carling, requested Saunders to visit experimental farms in Europe and the U.S.A. with a view to recommending whether similar establishments should be developed in Canada. Saunders left sons Will and Henry, both qualified pharmacists, to look after the family business and rapidly embarked on a tour of the U.S.A., visiting many of the over 30 experimental farms. He also obtained information by correspondence with other institutions in the U.S.A., as well as those in Europe, so that by 20 February 1886 he was able to submit his report and recommendations to the Government. Among his recommendations were the establishment of five stations (experimental farms) and the appointment of directors/superintendents for agriculture, horticulture and forestry, together with an entomologist, botanist, chemist and veterinary surgeon, whose proposed roles he summarised. By June 1886, the Government had enacted appropriate legislation for the establishment of the experimental farms, and by October, Saunders had been appointed Director of Experimental Farms. The latter quickly led to his resignation from his positions as President of the Ontario Fruit Growers' Association, President of the Entomological Society of Ontario, and Editor of *The Canadian Entomologist* (Pomeroy 1956). As well, Will and Henry took over the running

of the family pharmaceutical company on a permanent basis.

Land for the first farm, the Central Experimental Farm in Ottawa, was obtained in the fall of 1886, and over the course of the next year, Saunders travelled across Canada to determine the best locations for the other Dominion Experimental Farms, as they were to be called. By late 1889, farms had been set up at Nappan (Nova Scotia), Indian Head (Saskatchewan, but then the North-West Territories), Brandon (Manitoba) and Agassiz (British Columbia). Subsequently, seven experimental stations were established at locations from northern Alberta to Prince Edward Island. Saunders personally chose most of the sites, though political pressure apparently had some influence in the final selection (Stewart 2003).

Under Saunders' direction, the farms undertook a wide range of work: plant breeding (including cereals, fruit and tree production), plant pathology, bee management, livestock improvement, soil testing and improvement, and a significant amount of basic research (the latter apparently sometimes leading to conflicts between Saunders and his scientists). Among the most notable achievements was Saunders' pioneering work on the development of new wheat varieties with high productivity, good milling and bread-making quality, and early ripening suited to the short Prairie summers. Through the late 1880s and 1890s, Saunders together with many field assistants including his third and fourth sons, Charles Edward and Arthur Percy, made numerous crosses both at the Ottawa farm and the farms in Brandon, Indian Head and Agassiz, noting the characteristics of the progeny obtained. To cut a long story short, in 1904 Charles (now appointed by his father as Dominion Cerealist, apparently a position he took only because he could not make a living in his chosen field of music!) discovered Marquis, a wheat variety with all the required features. For a detailed account of Saunders' and his sons' roles in developing Marquis and its subsequent success, see Buller (1919) and Pomeroy (1956). Suffice it to say that by 1920, 90% of the >17 million acres of spring wheat grown in the Prairies were of this variety (Pomeroy 1956).

An increasing workload and weakening health led to Saunders' decision to resign on 31 March 1911, following which he, his wife and his daughter took his first real vacation since becoming Director with a trip to Europe. Unfortunately, while in England, Saunders became very sick and never fully recovered. He died on 13 September 1914, following a year in which he was mentally incapacitated, aged 78.

Numerous honours came Saunders' way as befitted a person of his standing. He was awarded honorary LL.Ds by the Queen's College Kingston (1896) and the University of Toronto (1904), and received a CMG from King Edward VII in 1905. A charter member of the Royal Society of Canada (1882), he was its President in 1906-7. He was also a Fellow of both the Royal Entomological Society of London and the Royal Microscopical Society, and an honorary member of the Pharmaceutical Society of Great Britain (Bethune 1914; Pomeroy 1956; Stewart 2003).

In addition to his central role in the development of Canadian entomology and agricultural science, Saunders found time to participate in other business-related matters.

He was a founding member of the Canadian Pharmaceutical Society and later its President; he assisted in the formation of the Ontario College of Pharmacy, and served as its President for 2 years; and he was President of the American Pharmaceutical Association. He taught material medica at Western University, and was Public Analyst for Western Ontario. In 1876 he joined the Board of Directors of the Huron and Erie Savings and Loan Company, serving as its President from 1879 to 1887 (Bethune 1914; Stewart 2003).

References

Baker, A.W. 1939. A short history of the Entomological Society of Ontario. *The Canadian Entomologist* 71:14-20.

Bethune, C.J.S. 1914. Dr. William Saunders, C.M.G. *The Canadian Entomologist* 46: 333-336.

Buller, A.H.R. 1919. *Essays on Wheat*. MacMillan, New York.

Pomeroy, E.M. 1956. *William Saunders and his five sons: the story of the Marquis wheat family*. Ryerson Press, Toronto.

Saunders, W. 1883. *Insects Injurious to Plants*. J.B. Lippincott, Philadelphia. (Second edition published in 1910.)

Saunders, W.E. 1939. Entomological memories. *The Canadian Entomologist* 71:20-21.

Stewart, I.M. 2003. Saunders, William. *In Dictionary of Canadian Biography*, Vol. 14. Edited by R. Cook and J. Hamelin. University of Toronto/Université Laval. http://www.biographi.ca/009004-119.01-e.php?&id_nbr=7688. Accessed 10 April 2013.



**ATELIER JEAN
PAQUET INC.**

MATÉRIEL ENTOMOLOGIQUE
ENTOMOLOGICAL SUPPLIES

Courriel: jeanpaquet@webnet.qc.ca

www.atelierjeanpaquet.com

(paid advertisement/ publicité payée)

Open access, predatory publishers, *The Canadian Entomologist*, and you

Kevin Floate, Shelley Hoover and Chris Cutler

If your experience is the same as ours, you are being ‘flooded’ with emails that offer to advance your scientific career. Some are invitations to be a keynote speaker at an international conference. Others are invitations to join editorial boards, guest edit a special issue of a journal, or even start your own journal. Most, however, are solicitations for your next submission.

Some of you may feel flattered at being ‘singled out’ for this special attention. Others may view such emails as spam. Almost all of these emails are from online journals that promise rapid peer-review with publication of accepted papers via Open Access (OA) to promote your research to the broadest possible audience. Associated with these emails, you may have heard the term ‘predatory publishers’.

What do we make of all this? What is OA? Are these legitimate journals? Why are there so many new ones? What are predatory publishers? Do they deliver as promised? How did they get my email address? Limited funds, a need to quickly publish papers, and the desire to maximize the impact of our research are all reasons why these questions merit close attention. In this article, we hope to shed a little light on some of these topics.

Let’s begin with a bit of background to provide context. Most of us are familiar with the subscription-based model of research publication, where researchers typically pay page charges to publish their papers in scientific journals.

The publishers then charge subscription fees for readers to access these journals. These charges cover costs of journal publication (copy editing, formatting, and printing) and distribution, and generate profits for the publisher. For many of us, this subscription-based model is less than satisfying. It just doesn’t seem fair that we have to use our research funds to conduct a study, then probably pay to publish the results, and then pay again to read the papers. To add insult to injury, the profits generated for the publisher rely upon our volunteer time to serve as reviewers and editors. Until fairly recently, however, there didn’t seem to be viable alternatives to the subscription-based model.

The subscription-based model has come under increased scrutiny as subscription costs continue to rise while institutional libraries struggle to deal with declining journal acquisition funds. Adding fuel to the fire are reports of unseemly profit margins for commercial publishers. A recent article in *Nature* references a 2008 study, which estimated profit margins for society publishers at 20%, for university press publishers at 25%, and for commercial publishers at 35% (van Noorden 2013). These conditions, in combination with the growth of the internet, have paved

‘Open Access’ and ‘Predatory Publishers’ are two distinct, but often linked, phenomena.

Open Access (OA) – unrestricted access to online journal publications.

Predatory Publishers – publishers that exploit the OA model for profit using questionable tactics.

Kevin Floate (kevin.floate@agr.gc.ca) is a senior research scientist with Agriculture and Agri-Food Canada in Lethbridge, Alberta and a subject editor for *The Canadian Entomologist*. *Shelley Hoover* is a research scientist with Alberta Agriculture and Rural Development in Lethbridge. *Chris Cutler* is an associate professor at the Dalhousie University Agricultural Campus in Truro, Nova Scotia. All three are members of the Publications Committee for the Entomological Society of Canada.

the way for OA as an apparently less expensive and more palatable alternative to the status quo.

Open access ...

OA refers to unrestricted online access to journal publications. There are a number of different models by which this is achieved. The **Gold OA** model allows articles to be made freely available online upon publication. Depending upon the journal, payment of an Author Publication Charge (APC) may or may not be required. The **Green OA** model allows for published articles to be self-archived in a public repository, either in the form of the 'accepted manuscript' or the published 'version of record'. **Delayed OA** allows for published articles to become freely available online after an embargo period. **Pure OA** refers to journals that only publish OA articles; that is, there are no subscription fees for any content. **Hybrid OA** applies to journals for which subscriptions are required to access the content, but provides the option of Gold OA to authors of individual papers, usually on payment of an APC.

Many of you may have the perception that OA models allow for free publication. They do not. They allow only for free access. Someone still needs to pay costs to format and copy-edit our accepted manuscripts, to manage their publication, and to host and archive web content. Fee-based OA journals recover these costs as APCs from the author or, more often, from the authors' research grant or institution. Occasionally, these journals may fully or partially waive APCs in cases of financial hardship. No fee OA journals recover these costs from other sources of income. These may include subsidies (e.g., from foundations, institutions, governments), membership dues, advertising, endowment funds, non-OA journals, or some combination thereof.

The speed with which researchers are embracing OA is astonishing. In 1993, there were 20 OA journals that published 247 articles. In 2009, there were 4 767 OA journals that published 191 851 articles (Laakso et al. 2011). Announcement in the United Kingdom of a new policy by the Research Councils UK (RCUK) is expected to further spur adoption of OA. As of April 2013, authors "*are expected to publish any peer-reviewed research papers which acknowledge Research Council funding in journals that are compliant with the RCUK policy on Open Access*". Compliance is met with publication in either Gold OA or Green OA journals. The United States is developing a similar policy, whereby Federal agencies with research budgets exceeding \$100 million per annum are tasked with developing plans to increase public access to federally-funded research (Holdren 2013).

... Predatory publishers ...

Let's get back to those emails that find their way to your inbox, asking you to submit an article to some journal you've likely never heard of. Why are there so many of these new journals popping up? How do they find you and why are they so eager to have you publish an article in their journal?

Once again, we need to provide a bit of context. Online publication and use of the internet allow journals to operate with much reduced costs. There is no need to ship or maintain hardcopy publications of journals. Emails provide an inexpensive method to advertise journals and solicit submissions. Thus, the upfront costs of starting a new journal can be as little as a few hours to set up a website. At the same time, there is a need for new journals, particularly those that publish in the English language. Recent years have seen a dramatic rise in the number of PhDs being annually awarded; mainly in China but also in India (Cyranoski et al. 2011). Because English is the 'language of science', these new graduates are under pressure to publish their research in English language journals, which may be a requirement for graduation. Doing so also brings international recognition, future collaborations and (hopefully) a permanent job. And once they have found jobs in science, the pressure to publish continues. Established journals don't have the capacity to accommodate all of these new submissions and may have APCs that are

prohibitively expensive. All of these factors have helped fuel the explosive growth of online journals.

Many of these journals provide valuable and legitimate services. Most of them are sincere in their efforts to develop their product and recruit authors. As new journals, they also need to establish editorial boards. Thus, they strive to attract the services of young, ambitious scientists who recognize the worth of voluntary editorial work to advance both their fields of study and their personal careers. Invitations to serve on editorial boards of established journals are generally uncommon. New online journals also tend to have lower APCs than more established journals. Furthermore, submission to a new online journal may expedite publication of your manuscript. Established journals often have a backlog of papers ‘*in review*’ or ‘*in press*’, such that it may take a year after submission to see an article published in final form. In contrast, fledgling journals usually have fewer bottlenecks to delay production of the final product.

There are, however, a significant number of publishers of OA journals that engage in questionable practices. These practices identify them as *predatory publishers*. Rather than a genuine interest to disseminate science and provide a stringent review process, their primary motivation is to generate revenue. Consequently, publication in such journals may be more reliant upon receipt of an APC than on the quality of the submission. The more articles accepted, the greater the number of APCs received by the publisher.

To garner submissions and maximize profits, predatory publishers send out spam emails using search engine web bots to obtain your email address and the titles of your recent publications from the internet. You then receive a professional-looking email with fancy graphics and announcement of a new leading-edge journal with an alluring title. It likely praises your expertise and contributions to your discipline (often unrelated to the topic of the journal), may reference a recent paper, and then invites you to submit an article. As further enticement, these emails may include invitations to serve on editorial boards. Doing so, however, may obligate you to submit future manuscripts to the journal and your name may be used by the publisher to attract submissions from other authors. Indeed, there have been multiple instances of scientists being listed on editorial boards without their knowledge (Beall 2012b)!

The topic of predatory publishers has caught the attention of many, perhaps none more so than Jeffrey Beall (University of Colorado Denver), who has become a leading figure in tackling this issue. Beall (2012a) has developed a checklist (see inset) that identifies the many ways in which predatory publishers deceive, lack transparency or otherwise fail to follow publishing standards with regards to editors and staff, business management practices and overall integrity. His list of

Some of Beall’s criteria that identify predatory publishers:

- publisher’s owner is the editor for all of the organization’s journals
- two or more journals have identical editorial boards
- no policies or practices for digital archiving
- begin operations with a large number of journals
- lack of transparency regarding APCs
- minimal or no copy-editing
- countries are named in journal titles that have no connection to the journal
- journals falsely claim to have impact factors
- journals send spam email requests for reviews to unqualified scholars
- routinely use reviewers suggested by authors without vetting qualifications
- publish non-academic papers; e.g., essays by laypeople or pseudoscience

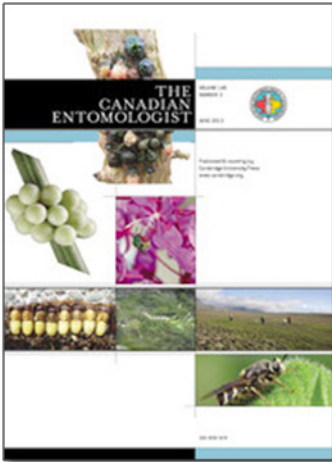
For a complete list of these criteria, click [here](#).

such publishers currently contains more than 225 entries (Beall 2013), most of which publish multiple journals! He also writes a blog that tracks the activities of some of these publishers (<http://scholarlyoa.com/>). From the 4 June 2013 post on his blog: “I recently discovered a new publisher called *Recent Science*, a scholarly publisher with 38 journals in its portfolio, some of which duplicate other publishers’ titles. According to *Recent Science*, every one of its journals has earned an impact factor, even though none has any content.”

Some researchers listed on the web sites of publishers on Beall’s list regret their decision to become involved with publishers of ‘predatory’ journals, and now cannot seem to rid themselves of these associations. A recent New York Times article described the plight of James White, a plant pathologist at Rutgers University. He accepted an invitation to serve on the editorial board for a new journal, *Plant Pathology & Microbiology*, not realising the nature of the journal. His name, photo, and personal information were posted to the journal’s website, and subsequently used to promote an entomology conference, Entomology-2013 – all without his permission (Kolata 2013).

Two reputable European journals *Archives des Sciences* and *Wulfenia* have recently fallen prey to identity theft. Counterfeit websites were created and used to lure hundreds of scientists into paying publication fees for articles that were never received by the legitimate journals, and never published. These forged sites even initially fooled Thomson Reuters, producer of the Scientific Citation Index and compiler of journal impact factors, who noticed a discrepancy between the journals’ print issues and on their website, and alerted the journals to the problem (Butler 2013)

... The Canadian Entomologist ...



The Canadian Entomologist (TCE) has been published continuously since 1869 as the journal of the Entomological Society of Canada, which celebrates its 150th anniversary this year. This makes *TCE* one of the oldest entomological journals in the world of one of the oldest scientific societies in North America. Initially a forum to disseminate the research findings of mainly Canadian interest, *TCE* has become an international journal that publishes significant new findings from all countries in all disciplines of entomology.

Part of the journal’s success has been the Society’s willingness to evolve in response to changing circumstances. Faced with rising production costs and a desire to better embrace online technologies, the Society began a search for a new publisher in 2010. After considering proposals from several sources, the Society entered into a partnership with Cambridge University Press (CUP), which became the publisher of *TCE* in January 2012.

With its origins in 1534, CUP is the world’s oldest publishing house. It is a department of the University of Cambridge and is a non-profit organization. It has charitable status with a mandate to print and publish for the advancement of knowledge, education and learning worldwide. This philosophy is somewhat different from that of commercial publishers, which also include the expectation of maximizing profits for shareholders. It was partly for this reason that the Society opted to partner with CUP.

With the transition to CUP, *TCE* provides authors with an increased number of attractive features. Page charges have been eliminated, both for text and for colour plates. Submission is now completely online via CUP’s ScholarOne submission process. This allows authors to track

the progress of their submissions and has accelerated the review process. Accepted papers are posted on *TCE*'s website as *FirstView* articles prior to publication and authors receive a PDF version of their final paper free of charge. Articles published in *TCE*, including all back-issues, are 'deep-archived' to ensure their perpetuity in digital archives. In addition to a rigorous peer-review process, submissions accepted for publication in *TCE* are carefully vetted by an Assistant Editor to maintain a consistently high standard of clarity and grammar. Published papers are indexed using a number of services ([Cambridge](#)) with CUP continuously working to improve service delivery.

Under the current agreement between the Society and CUP, *TCE* is published using a subscription model with a portion of the proceeds from subscription sales returned to the ESC to support societal activities. In light of increased pressure for OA publication, however, *TCE* has evolved once again and adopt a hybrid OA model. This change will give authors the option of Gold OA publication in *TCE* for a one-time fee. However, should they prefer, authors can still publish in *TCE* at no cost.

... and you.

This brings us full circle with you looking at the latest email soliciting your next submission, asking you to serve on an editorial board, or to review a manuscript. With your inbox full of such emails, you may find it an increasing challenge to determine where to allocate your time and article submissions. You are not alone. We all face these decisions, which affect our job prospects, career advancement and future research funding. We don't know what decision is best for you, but we do advise you to be strategic in reaching it.

Peer-reviewed publications are a key measure by which our careers and programs as researchers are judged. This judgement is based on: (i) the number of peer-reviewed articles that we or our labs produce, (ii) the quality of the journals in which we published, and (iii) the impact of the work itself – the degree to which it is applied and advanced by other researchers. The relative importance of these factors varies with the discipline and career stage of the researcher. For students, simply having a peer-reviewed publication, particularly in an English-language journal, may open the door to a PhD or postdoctoral opportunity. As our careers progress, the number and quality of our publications are given greater weight.

It is particularly important for early-career scientists to carefully select the journals to which they submit the fruits of their research. In general, articles that are open-access are cited more often than their paid-subscription counterparts. In a meta-analysis of citation counts, Swan (2010) identified 27 studies that reported a distinct advantage to OA publishing versus 4 studies that did not. Eysenbach (2006) found that OA articles were more likely to be cited than non-OA articles published in the same journal. Open-access publishing, especially online "previews", also can hasten the dissemination and uptake of research findings (Eysenbach 2006). Thus, publication in OA journals may be especially beneficial to early-career scientists – if they can afford the APCs.

The number of times a paper is cited is one indication of its impact. Thus, citation counts are valued and rewarded in performance assessments and funding decisions. One of the most common measures of citation counts is the *h*-index, which is automatically calculated by databases such as Scopus and the Web of Knowledge. In simplest terms, an author with an *h*-index of, for example, 10, has published 10 papers that each have been cited in other papers at least 10 times. Just like citation counts themselves, the value of the OA citation advantage varies with discipline and with the quality of the research (Gargoui et al 2010). However, citation counts are not the only indicator of article quality and importance, especially for more applied research. Thus, they are increasingly supplemented by other online measures that include download counts, tags, comments, 'likes', and recommendations (e.g., <http://f1000.com/prime>).

Publishing in journals that facilitate citation counts is one option, but citations take time to accumulate. Thus, early-career researchers may be more attracted to a journal's impact factor (IF). The IF of a journal is a measure of the average number of citations to recent papers it has published. The premise is that high IFs reflect a high overall quality of research in the journal and, therefore, of the researchers that publish in the journal. However, this premise is flawed to the extent that the European Association of Science Editors (EASE) has stated that IFs should not be used to assess researchers or research programs either directly or as a surrogate (EASE 2007). Nevertheless, many organizations (mainly academic institutions) still use IFs to assess employee performance. Depending upon your individual circumstances, you may wish to submit to high IF journals, but recognize that they generally have high rejection rates.

Accepting invitations to serve on editorial boards is generally encouraged. Such opportunities are rare and normally offered to individuals that have attained prominence in their field of study. Thus, serving in this role brings immediate prestige. More importantly, however, board members help shape editorial policy and enhance the overall quality of published papers in their field of study. However, these invitations should be accepted with caution. Can you commit the time needed to do a credible job? And if you accept the invitation, what exactly are you agreeing to? Recall that predatory publishers use these invitations to attract submissions and the names of researchers to promote their journals. For example, as an editorial board member or reviewer for journals published by Science PG, "*You agree to display your name and photograph on the website of the site and journal cover.*" (<http://www.sciencepublishinggroup.com/info/benefitsresponsibilities.aspx>). Furthermore, use of this strategy has resulted in some journals having exorbitant editorial boards. ISRN Ecology published only 22 papers in 2012, but as of June 2013 lists an editorial board of 229 members (<http://www.hindawi.com/isrn/ecology/editors/>).

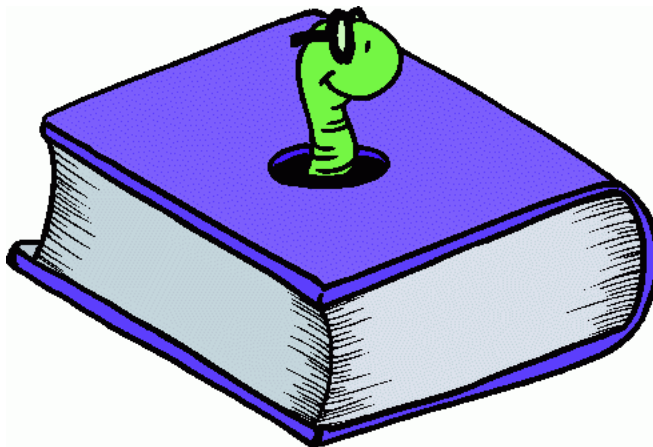
This brings us to the topic of manuscript reviews. Scientific peer-review is *critical* to maintain the quality and advancement of our chosen fields of study. We are obligated to provide these reviews because it is part of the job and because our peers have taken time to review our manuscripts. There also is a certain level of prestige with being asked to review manuscripts, as it implies that the quality of your own work has earned respect in the research community. However, a thorough and thoughtful review can take several hours and, in addition to improving the quality of the submission, your efforts provide a significant financial return to the journal's publisher. Consider the following. Will your efforts primarily benefit a predatory publisher? A large commercial publisher? Is the invitation to review from a journal you have never heard of? Is the journal published by a society of which you are a member, and which will provide tangible benefits to you and your students? Early in your career, you may receive few such invitations and can afford to be less discriminatory. As the number of invitations increases, however, you may need to be more selective.

In summary, scholarly publication is in a state of upheaval triggered by new technologies and the desire of authors to obtain the greatest possible audience for their articles. The bewildering number of new online OA journals is only the most visible aspect of this upheaval. These changes are transforming the way we communicate our science and offer tremendous opportunities. But beware the predatory publishers that prowl in your email inbox stalking your next submission. Be informed. Be strategic. But first and foremost, do good research.

References

- Beall, J. 2012a. Criteria for determining predatory open-access publishers. <http://scholarlyoa.files.wordpress.com/2012/11/criteria-2012-2.pdf>, accessed June 5, 2013.
- Beall, J. 2012b. Predatory publishers are corrupting open access. *Nature* **489**: 179.

- Beall, J. 2013. Beall's List of Predatory Publishers 2013. http://www.academia.edu/1151857/Bealls_List_of_Predatory_Open-Access_Publishers, accessed June 5, 2013.
- Butler, D. 2013. Sham journals scam authors. *Nature* **495**: 421–422. doi:10.1038/495421a
- Cyranoski, D., Gilbert, N., Ledford, H., Nayar, A. and Yahia, M. 2011. The PhD factor: The world is producing more PhDs than ever before. Is it time to stop? *Nature* **472**: 276-279.
- EASE. 2007. European Association of Science Editors (EASE) Statement on Inappropriate Use of Impact Factors. http://www.ease.org.uk/sites/default/files/ease_statement_ifs_final.pdf, accessed June 5, 2013.
- Eysenbach, G. 2006. Citation advantage of open access articles. *PLoS Biol* **4**(5):e 157
- Gargouri Y, Hajjem C, Larivière V, Gingras Y, Carr L, Brody L, Harnad S. 2010. Self-directed or Mandated, Open Access Increases Citation Impact for Higher Quality Research *PLoS ONE* **5**(10): e 13636
- Holdren, J. 2013. Memorandum for the heads of executive departments and agencies. Subject: Increasing access to the results of federally funded scientific research. Online document. (http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf), accessed May 27, 2013.
- Kolata, G. 2013. Scientific articles accepted (personal checks too). *New York Times*, April 7 2013.
- Laakso, M., Welling, P., Bukvova, H., Nyman, L., Björk, B.-C. and Hedlund, T. 2011. The development of Open Access journal publishing from 1993 to 2009. *PLoS ONE* **6**(6): e20961.
- RCUK. 2013. RCUK Policy on Open Access and Supporting Guidance. Online document. (<http://www.rcuk.ac.uk/documents/documents/RCUKOpenAccessPolicy.pdf>), accessed May 27, 2013
- Swan, A. 2010. The Open Access citation advantage: Studies and results to date. *Technical Report. School of Electronics & Computer Science, University of Southampton*. <http://eprints.soton.ac.uk/268516/>, accessed May 27, 2013
- van Noorden, R. 2013. Open access: the true cost of science publishing. *Nature* **495**: 426-429.



Meeting announcements / Réunions futures

Joint Annual Meeting of the Entomological Societies of Ontario and Canada (Predating the Nation - A Sesquicentennial Celebration of Entomology in Canada)

Guelph, Ontario, 20-23 October 2013

English: <http://www.uoguelph.ca/debu/esc-eso2013/esc-eso.html>;

French: <http://www.uoguelph.ca/debu/esc-eso2013/sec-seo.html>

Global Conference on Entomology

Kuching, Sarawak, Malaysia, 8-12 November 2013

<http://www.gce2013.com/>

61st Annual Meeting of the Entomological Society of America (Entomology 2013: Science Impacting a Connected World)

Austin, Texas, 10-13 November 2013

<http://www.entsoc.org/entomology2013>

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

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 Executive Council Meeting by conference call, 17 June 2013

Alec McClay, Secretary

President's report

President Rose De Clerck-Floate reported on activities to promote the Society's 150th anniversary and on efforts to identify candidates for the position of Treasurer after Scott Brooks steps down in 2014. In reviewing the financial reports, it was realized that a Board of Trustees consisting of the Past President (as Chair), Treasurer, and Chair of the Student Awards Committee needs to be appointed annually to manage the Scholarship Fund.

Liability insurance

There was a discussion on the Society's potential needs for liability insurance. The Finance Committee was directed to check out our current coverage and make recommendations to the Governing Board.

Treasurer's report

In 2012 total revenue equalled \$104 530 and total expenditure equalled \$112 779. Income from investments brought in \$12 267. The scholarship fund received \$11 172 in donations, and \$9 761 in investment income. Revised figures for Cambridge University Press royalties in 2012 necessitated a revision of the Consolidated Financial Statements, which were circulated to the Governing Board on 16 June for a revote. Results are pending as of the date of this meeting. The Society faces a revenue shortfall of \$30 000 – 40 000 due to errors in forecasting of royalties by Cambridge University Press. The Finance Committee will review the implications for Society budgeting. A \$30 000 bond in the Endowment Fund will be cashed in.

The Canadian Entomologist

The Editorial Board is functioning well and manuscript quality appears to be improving. One hundred new submissions were received between October 2012 and 10 June 2013 and the rejection rate is at 55%. Average time from submission to first decision sits at 32 days and final decision at 59 days. We currently have enough fully edited and copy-edited manuscripts to fill up to and including Volume 145(5), and enough in the production queue to fill Volume 145(6) and possibly most of Volume 146(1). This means manuscripts being submitted now will not be in print until 2014. This allows the Editorial Board to continue with efforts to increase quality. A special issue to follow a symposium on emerald ash borer (to be held in the 2013 JAM in Guelph) will print in Volume 147 (in 2014). CUP allowed, for a 1-month period, free access for papers contained in the Arctic special issue. The CP Alexander Reviews will be made open access.

Webmaster

Dicky Yu was offered and has accepted the position of Webmaster beginning in October 2013. The 2013 Joint Annual Meeting website is now online.

Canada Non-Profit Corporations Act Transition

An ad-hoc committee led by G. Gibson has drafted By-laws and Articles of Continuance for submission to Corporations Canada. Once these have been finalized we will seek legal review. A particular issue which will need review is the possibility of holding the Society's Annual Meeting

outside Canada, as is intended at the International Congress of Entomology in 2016. Under the Act it appears that this may not be allowed. The Society's legal name will be changed to add the French version (la Société d'Entomologie du Canada), which will require that a NUANS name search be conducted. Clarification is also needed on the methods of electing Directors.

Headquarters Building

The Executive agreed that the decision on the future of the Headquarters building should be based purely on a financial analysis of the relative costs of maintaining the building versus selling it and renting office space.

Publications

The Executive accepted a recommendation from the Publications Committee that the production of printed copies of the *Bulletin* should cease after the December 2013 issue. They also accepted a recommendation from the Publications Committee against instituting an award for best paper in TCE and/or CJAI, and against reviving the *Memoirs*. A hybrid open-access model proposed for *TCE* by Cambridge University Press, under which authors could publish papers as open-access on payment of a one-time Author Publication Charge of \$2700 USD, was approved.

Achievement Awards

A proposal on raising the maximum age for the Hewitt Award is being developed and will be presented to the Governing Board in October. Supplies of the book *Criddle-de-Diddle-ensis*, which has been used as a prize, are exhausted, and the book is no longer available. The Committee has agreed to present the award winner in 2013 (and possibly 2014) with a coin from the Royal Mint 'Animal Architects' series, and a Bee & Hive coin (2013) has been purchased. For the long term, the committee supports the gift of a photograph (or artistic representation) of a Criddle-named insect.

Insect Common Names

Two reviewers selected by the Committee are reviewing a list of proposed English and French common names for all bees of Canada.

Early Career Membership

The Executive discussed a proposal from the Student Affairs Committee for an early career or transition membership category. Discussion focussed on the length of the transitional period, the appropriate level of reduction in membership fees and JAM registration, and potential effects on meeting revenues. The mechanics of how a potential new member would be screened for their graduation and work status have not yet been considered. The Membership and Student Affairs Committees will finalize a proposal for presentation to the Governing Board.

Federal Government Travel Restrictions

Letters expressing concern at the travel restrictions imposed on federal scientists by the federal government were sent by First Vice-President Rebecca Hallett to Minister Ritz and (jointly with other societies in the Agriculture Institute of Canada) by the Chair of the Science Policy Committee, Staffan Lindgren. No federal government employees were involved in discussions or voting on this issue.

Student Affairs

Proposals for the Graduate Student Showcase have been modified based on feedback from

the Executive and the event will proceed on a trial basis at the JAM in Guelph.

Marketing and Fund-Raising Committee

The Committee has developed a proposal for a “Highly-Qualified Personnel (D-HQP) Professional Skill Development” event to be held at the Joint Annual Meeting to attract sponsorship from a broad array of companies. The D-HQP event would cover a wide range of topics that are not necessarily addressed in University curricula, but are of importance to the job market. A trial run of this event will be held at the JAM in Guelph.

63rd Annual General and Governing Board Meetings

The Annual General Meeting of the Entomological Society of Canada will be held at the Delta Guelph Hotel and Conference Centre, Guelph, Ontario, on Tuesday, 22 October 2013, from 17:00 to 17:45. The Governing Board Meeting will be held at the same location on Saturday, 19 October 2013, from 08:30 to 17:00. The incoming Governing Board will also meet immediately following the Annual General Meeting. Matters for consideration at any of the above meetings should be sent to Alec McClay, Secretary of the ESC.

63e assemblée générale annuelle et réunions du conseil d'administration

L'assemblée générale annuelle de la Société d'entomologie du Canada se tiendra à l'hôtel et centre de conférence Delta de Guelph, en Ontario, le mardi 22 octobre 2013, de 17:00 à 17:45. La réunion du conseil d'administration se tiendra au même endroit, le samedi 19 octobre 2013 de 8:30 à 17:00. Le nouveau conseil d'administration se réunira également immédiatement après l'assemblée générale annuelle. Les sujets à aborder pour n'importe laquelle de ces réunions doivent être envoyés à Alec McClay, secrétaire de la SEC.

Wanted – New *Bulletin* Assistant Editor

The current Assistant Editor, Julia Mlynarek, has indicated that she will give up her position following publication of the December 2013 issue of the *Bulletin*.

Thus, the Society is seeking a new individual willing to take on this role. The Assistant Editor's duties include working with the Editor to ensure timely production of the *Bulletin*'s quarterly issues. Specifically, s/he will be responsible for the layout of each issue using Adobe InDesign software, distributing proofs to contributors, proofreading, and submitting each issue to the Society's Webmaster for posting on our webpage.

The position provides an opportunity to become familiar with desktop publishing as well as to learn more about the running of our Society.

For more information on this important position, please contact either Julia Mlynarek (julia.mlynarek@gmail.com; phone (613) 520-2600 ext 3872) or the *Bulletin* Editor, Cedric Gillott (cedric.gillott@usask.ca; phone (306) 966-4401).

ESC 2012 Financial Statements

ENTOMOLOGICAL SOCIETY OF CANADA

Consolidated Statement Of Financial Position

December 31, 2012	December 31, 2012	December 31, 2011	January 1, 2011
Assets			
Current			
Cash (note 8)	\$ 81,254	\$ 118,421	\$ 239,957
Accounts receivable	521	13,793	1,745
JAM recoverable	14,278	8,000	-
Inventory (notes 3, 8)	479	2,180	3,588
Prepaid expenses	1,718	2,151	2,524
Investments (notes 3, 6, 8)	139,575	109,505	25,611
	<u>237,825</u>	<u>254,050</u>	<u>273,425</u>
JAM recoverable	4,000	-	-
Investments (notes 3, 6, 8)	412,042	474,305	477,726
Digital archives (note 3)	51,500	55,000	55,000
Property, plant and equipment (notes 3, 7, 8)	141,101	145,314	149,702
	<u>\$ 846,468</u>	<u>\$ 928,669</u>	<u>\$ 955,853</u>
Liabilities and Net Assets			
Current			
Accounts payable and accrued liabilities	\$ 9,578	\$ 51,123	\$ 29,638
Deferred revenue	8,211	29,074	68,861
	<u>17,789</u>	<u>80,197</u>	<u>98,499</u>
Unrestricted Net Assets			
General Fund	<u>349,576</u>	<u>363,421</u>	<u>378,583</u>
Restricted Net Assets (note 8)			
Endowment Fund	73,551	75,664	74,921
Building Fund	141,101	145,314	149,702
Scholarship Fund	258,818	256,800	245,576
Book Project Fund	5,633	7,273	8,572
	<u>479,103</u>	<u>485,051</u>	<u>478,771</u>
	<u>\$ 846,468</u>	<u>\$ 928,669</u>	<u>\$ 955,853</u>

The attached notes and schedule form an integral part of these consolidated financial statements.

Approved on behalf of the Board of Directors:

BOURIS, WILSON LLP

Chartered Accountants

ENTOMOLOGICAL SOCIETY OF CANADA

Schedule A

Consolidated Statement Of Revenue and Expenditures

For The Year Ended December 31, 2012

	2012		2011	
	Budget (note 9)	Actual	Budget (note 9)	Actual
Revenue				
Regular membership	\$ 28,800	\$ 26,934	\$ 28,800	\$ 27,360
Student membership	3,000	2,653	2,600	1,830
Cambridge University Press	67,400	38,801	-	36,000
Emeritus	700	-	200	-
Subscriptions (recovered)	-	(260)	93,650	76,595
Page charges	-	2,030	28,000	14,665
Online fees	-	-	1,500	2,610
TCE Back Issues/Royalties	-	15,629	10,000	15,123
Extra income	-	1,498	14,500	10,488
Sales of memoirs	-	384	1,500	500
Back issues - electronic	-	-	20,000	12,997
Office postage	3,000	2,039	4,000	5,245
BSC publications	50	-	50	-
Miscellaneous	3,000	4,849	3,000	1,037
JAM proceeds/profits	-	9,973	-	-
	105,950	104,530	207,800	204,448
Expenditures				
Bulletin publishing and mailing	\$ 9,000	\$ 1,823	\$ 9,000	\$ 6,850
BSC publication cost	1,400	1,416	-	1,865
Publishing and mailing	12,500	-	120,500	107,764
Reprint costs	-	-	3,500	2,566
Salaries and benefits	41,000	58,051	43,000	48,700
Cambridge University Press membership	10,000	-	-	-
Office and bank charges	7,500	13,453	15,000	18,605
Online access	-	-	7,725	5,870
Professional fees	8,000	7,843	8,000	9,551
Prizes, awards and brochures	1,000	978	500	3,425
Honoraria	7,000	5,780	7,000	5,000
Committees	4,000	-	4,000	-
Other organizations and societies	3,000	400	1,900	1,205
Editor expenses	-	914	-	-
Annual meeting				
Grant	-	1,000	4,000	-
Honoree	2,000	1,796	1,500	-
Student travel award	-	-	2,000	-
Government board				
Annual meeting	6,000	9,459	6,000	11,550
Other meetings	1,000	-	1,000	-
President's discretionary fund	1,000	859	1,600	845
General	-	5,372	-	6,034
Website	1,000	3,635	1,000	-
	115,400	112,779	237,225	229,830

BOURIS, WILSON LLP

Chartered Accountants

The complete 2012 financial statements are available in the Members' Area of the ESC website
 Les états financiers 2012 complets sont disponibles dans la section des membres du site de la SEC

International Pollination Course

Applications are now being accepted for the International Pollination Course, to be held 2-14 December 2013 at the Mucugê, Chapada Diamantina, Brazil.

This highly-regarded course is designed primarily for conservation biologists and pollination ecologists, and other researchers whose research, training, or teaching responsibilities require a greater understanding of pollination biology. The course provides participants with sufficient knowledge and experience to work on pollinators' conservation. A pollination background is not required.

See the website (<http://www.polinizadoresdobrasil.org.br/index.php/en/curso-polinizacao/announcement>) for more information.

Why do we call ourselves entomologists?

Why do we call ourselves entomologists? This is a question I'm very interested in, and I'll be providing a few potential answers during my talk on the history of the ESC at the Guelph JAM in October. You can let me know what your take on the issue is by completing a short survey online. There are nine questions, and it should take less than ten minutes to complete. Feel free to pass on the link to anyone else you think might be interested.

You can find the survey here:

<http://www.surveymonkey.com/s/GF2JTY5>

Thanks / Merci,
Laura Timms
Northern Biodiversity Program
McGill University

Pourquoi nous nommons-nous entomologistes?

Pourquoi nous nommons-nous entomologistes? Cette question m'intéresse beaucoup, et je fournirai quelques réponses potentielles durant ma présentation sur l'histoire de la SEC à la réunion conjointe annuelle à Guelph en octobre. Vous pouvez me faire connaître votre opinion sur la question en complétant un court sondage en ligne. Il y a neuf questions, et il prend moins de dix minutes à remplir. Vous pouvez faire circuler le lien à toute personne intéressée.

Vous trouverez le sondage ici :

<http://www.surveymonkey.com/s/GF2JTY5>

Seeking a PhD Student in the field of Chemical Ecology at the University of Alberta

I am seeking one outstanding PhD student in chemical ecology at the University of Alberta, Edmonton. Current research in my lab explores questions of broad relevance to invasion biology of forest insects in novel environments, emphasizing ecological functions of plant secondary compounds and evolution of insect-plant interactions in explaining herbivore host plant shifts. By doing so, my group integrates multiple disciplines, such as ecology, entomology, pathology, and chemical ecology to characterize interactions among multiple organisms such as trees, insects, and phytopathogens, and determine effects of the environment such as nutrients and water on the tripartite interactions. I currently supervise two PhD and two MSc students and co-supervise one MSc and one PhD students.

The PhD candidate will investigate several aspects of the chemical defenses of jack pine against the invasive mountain pine beetle in Canada. Jack pine is considered a 'novel' host in terms of encounters with the mountain pine beetle. In particular, the student will investigate how host secondary compounds, including terpenoids, phenolics and alkaloids (volatile as well as non-volatile chemicals), affect host selection, colonization and establishment of beetles under different growing conditions. Trade-offs between defense chemicals (i.e., terpenoids vs. phenolics) as well as between defense chemicals and non-structural carbohydrates will be investigated. Depending on the interest and quality of the applicant, the project offers considerable flexibility in designing a research program that investigates areas of personal interest within the overall framework of the project.

Background in ecology, chemical ecology, entomology, or a related field is required, as is an interest in the linkages between plants and insects. Experience with any of the following will be an asset, but is not required: GC/MS, LC/MS, plant-insect interactions, and forest ecology. Proficiency in spoken and written English is a necessity. Selection of a student will be based on academic achievements, reference letters and previous research experience. Strong verbal, written, and computational skills are essential. Tuition and fees and a standard Graduate Assistantship can be offered. Students are also eligible for Tri-Council graduate scholarships (e.g., NSERC) in their first year.

The position is available starting January 2014. The applicant must meet the entrance requirement for the University of Alberta, Department of Renewable Resources, which can be viewed at: <http://www.rr.ualberta.ca/GraduateProgram/PhDProgram.aspx>

Interested candidates should email (1) their transcript (just MSc), (2) curriculum vitae, (3) a letter describing their research experience and interests (2-page limit), (4) recent TOEFL scores (if appropriate), and (5) the names and contact information of three referees to Dr Nadir Erbilgin, Department of Renewable Resources, 4-42 Earth Science Building, University of Alberta, Edmonton, Alberta T6G 2E3, CANADA. Phone: (780)-492-8693; Fax: (780)-492-1767. Additional information can be obtained via email or phone call. Email: erbilgin@ualberta.ca.

Additional Information: Department of Renewable Resources – <http://rr.ualberta.ca/>.

Bug Music: How Insects Gave Us Rhythm and Noise. Rothenberg, David. 2013. St. Martins Press. 288 pp. Hardcover. ISBN 9781250005212. \$26.99. (Also available as an e-book, \$12.99.)

www.bugmusicbook.com

I read some of *Bug Music* on the subway, accompanied by squeaky tires and other commuters' headphone bleed. I read some of it in a café with jazz records playing on the turntable in the corner. And I read most of *Bug Music* in my east Toronto backyard, with a soundtrack of cicadas, crickets, mosquitoes, and bees mixed in with cars, kids, birds, and dogs.

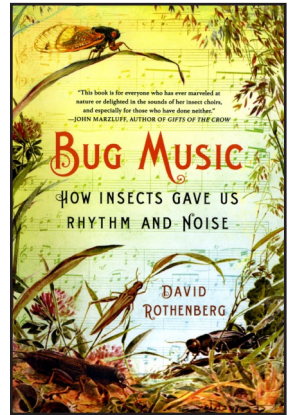
If any of those sounds just played in your head as you read that paragraph, if they elicited particular feelings or memories for you, that would probably make David Rothenberg, the author of *Bug Music*, happy. Rothenberg repeatedly asks his readers to listen, "to listen wider, to expand your sense of music to more than human sounds" – and in response I have found myself paying much more attention to my aural surroundings since I started reading this book.

David Rothenberg first came to my attention through the radiolab podcast, in a short piece broadcast this past May (Radiolab 2013) (speaking of encouraging people to listen, I highly recommend listening to radiolab). Rothenberg is a professor of philosophy and music, a specialist on animal sounds and how humans interact with them. Before tackling bug music, he explored the more familiar auditory worlds of birds (*Why Birds Sing*) and whales (*Thousand Mile Song*), and he's been called an interspecies musician because he plays his clarinet *with* his animal subjects. Indeed, you can watch a number of videos on the *Bug Music* website of him playing surrounded by cicadas. Rothenberg believes he is actually making music *with* the cicadas, not merely *near* them. He's a compelling personality and it's an interesting idea – but can a human really jam with an insect? What can be learned from such an exercise?

Rothenberg claims that if you pay close attention, you will hear "the deeper musicality of the noise" in the background buzz of cicadas – the repetition of calls, clicks, and wing flicks by individuals going in and out of synch in large groups, reaching crescendos of sound. He claims that humans learned their love of rhythm from insects like cicadas, starting with human cultures that developed surrounded by the repetitive insect sounds of the jungle. He asks us to forget the message conveyed by insect sounds, and to instead consider the beauty that arises from small creatures following simple rules to make patterns out of tones and rests.

The first three chapters of *Bug Music* contain mixed discussion of the lore and science of cicadas and crickets and the sounds they make, complete with sonograms, poems, and interviews with scientists and enthusiasts. The fourth chapter covers vibration as music, and what Rothenberg calls "edge-of-perception soundscapes". This middle chapter nicely connects the first part of the book to the final three chapters, which consider the influences six-legged musicians may have had on humans – with discussion including pygmy work songs, modern composition, synthesizer technology, and philosophy – as well as Rothenberg's own personal recent experiences in human-insect musical interaction.

I expected *Bug Music* to be more entomological than it was, but the minimal emphasis on insect biology didn't really disappoint me as I found the book entertaining from a number of perspectives. And I did learn some things about the biology of sound-producing insects. This was especially true in the fourth chapter *Listen Outside the Ear*, where the discussion veers away from the usual sus-



pects and talks about the vibratory sounds made by bark beetles, treehoppers, and water boatmen. However, I learned much more about music, the philosophy of music, and musical anthropology – including the intriguing idea of the acoustic niche, similar to the ecological niche but with animal sounds. These are ideas that will stick with me for a long time and affect how I listen to the world.

The prose is musical – another reviewer has called it “entomological jazz”, and I would have to agree. The main points repeat frequently throughout the text like melodic phrases. Discussion within chapters sometimes changes topics quickly and sometimes dwells on one topic like a long solo. There is a structure to the book, but it is also loose and informal – written in a personal tone, filled with quotes, drawings, and unanswered questions. The other scientist who lives in my house, who started university in a jazz program, found the book and Rothenberg’s style especially enjoyable. On the whole I found it fun to read, although I suspect some would find it frustrating.

One issue I had was the lack of footnotes in a traditional format – they appear at the end of the book, numbered and organized by chapter – but there are no numbers associated with statements in the text so the reader has to search for the relevant note (if one exists), making it hard to evaluate the soundness of Rothenberg’s arguments. This was an annoyance for a scientist used to being able to check the citation to follow up on a surprising fact, such as the statement that lacewings make sounds, and that these sounds seem to be the result of sexual selection. There’s no citation in the book, so if you’re interested I’ll save you the trouble: the relevant paper is Henry (1980).

Another way the book can go slightly wrong at times is in Rothenberg’s descriptions of entomologists, both historical and present day. Each new character that is introduced is always “great”, or “noted”, or “famous” – never just an entomologist. And an adapted excerpt from the book on the Scientific American blog caused a bit of a stir this spring, not due to its scientific content but because of Rothenberg’s discussion of how it was unbelievable that two cicada biologists have not been able to get tenure track jobs (Rothenberg 2013; McGlynn 2013). But these are the types of problems that are easy to find when an outsider writes about your field, and mistakes like this can actually be an indicator that a particular book may provide a fresh perspective. I would gladly recommend this book to any entomologist with an interest in music – even if only for the extras, including a bug songs playlist, cricket synchronization software, and videos and links on the website.

Finally, I think that what I’ll take most from *Bug Music* is the idea that Rothenberg repeats most often – to listen deeply to the sounds made by insects, to think of them as music and see how it affects me, and to try and respond.

Some people hear bug music

Some hear people music

All depends on your ears

– Wāfu, 1866, Kyoto

References

- Henry, C.S. 1980. The importance of low-frequency, substrate-borne sounds in lacewing communication (Neuroptera: Chrysopidae). *Annals of the Entomological Society of America* **73**: 617–21
- McGlynn, T. “Less valid complaints about not getting a tenure track faculty position.” *Small Pond Science*, Weblog, 24 May 2013.
- Radiolab. “The Septendecennial Sing-Along.” *Radiolab Podcast Articles*, Weblog, 14 May 2013.
- Rothenberg, D. “Discover the secret of the 17-year cicada, but it won’t get you tenure.” *Scientific American Guest Blog*, Weblog, 22 May 2013.

Laura Timms
Northern Biodiversity Program
McGill University

Books available for review / Livres disponible pour critique

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

If you wish to review one of these books, please send an email to the Chair of the Publications Committee

(Kevin Floate, Kevin.Floate@agr.gc.ca).

You should briefly indicate your qualifications to review the topic of the book, and be able to complete your review within 8 weeks.

Preference will be given to ESC members.

Guidelines

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

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

La SEC reçoit fréquemment des livres non demandés pour des critiques. Une liste de ces livres est disponible en ligne (<http://www.esc-sec.ca/fr/f-bulletinbooks.html>) et est mise à jour lorsque de nouveaux livres sont reçus.

Si vous souhaitez critiquer un de ces livres, veuillez envoyer un message au président du comité des publications

(Kevin Floate, Kevin.Floate@agr.gc.ca).

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

La préférence est donnée aux membres de la SEC.

Lignes directrices

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

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

Currently available for review /Disponibles pour critique

- 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
- Devorshak, C. (Ed.) Plant Pest Risk Analysis. Concepts and Applications. 2012.** 312 pp. CABI Publishers. ([details](#)) [[Note](#) – the book will be provided to the reviewer as an eBook in PDF format.]
- Hoy, M. Insect Molecular Genetics. An Introduction to Principles and Applications. 3rd Edition. 2013.** 840 pp. Academic Press. (hardcover, ebook). ISBN: 9780124158740
- Page, R.E., Jr. The Spirit of the Hive - The Mechanism of Social Evolution 2013.** Harvard University Press, Cambridge, MA, 226 pp. Hard cover. ISBN 978-0-674-07302-9.
- 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
- 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. ([details](#))
- Van Emden, H.F. Handbook of Agricultural Entomology. 2013.** 334 pp. John Wiley and Sons. ISBN 978-0-470-65913-7 hardcover. ([details](#))
- Wajnberg E. and S. Colazza (Eds.). Chemical Ecology of Insect Parasitoids. 2012.** 328 pp. Wiley-Blackwell, Hoboken, NJ. (hardcover). ISBN: 978-1-118-40952-7.

Officers of affiliated Societies, 2012-2013 Dirigeants des Sociétés associées, 2012-2013

Entomological Society of British

Columbia

President Ward Strong
President-Elect Mike Smirle
Past President Rob McGregor
Treasurer Max Salomon
Editor (Journal) Dezene Huber
Editors (Boreus) Gabriella Zilahi-Balogh
Jennifer Heron
Webmaster Alec Chubaty
Secretary Leo Rankin
Ministry of Natural Resource Operations
200-640 Borland St, Williams Lake, BC V2G 4T1
Tel: (250) 398-4352
E-mail: Leo.Rankin@gov.bc.ca
<http://www.sfu.ca/biology/esbc/>

Entomological Society of Alberta

President Lloyd Dossdall
Vice-President Felix Sperling
Past President Rob Longair
Treasurer Carolyn Whitehouse
Editor (Proceedings) Meghan Evans
Webmaster Alec McClay
Secretary Ken Fry
Olds College
4500 - 50 Steet, Olds, AB T4H 1R6
Tel: (403) 556-8261
E-mail: entsocalberta@gmail.com
<http://www.entsocalberta.ca>

Entomological Society of Saskatchewan

President Doug Baldwin
President-Elect Margie Gruber
Past President Jeff Boone
Treasurer Dwayne Hegedus
Newsletter Editor Dave Halstead
Secretary Iain Phillips
Saskatchewan Watershed Authority
101-108 Research Drive, Saskatoon, SK, S7N 3R3
Tel: (306) 933-7474
Email: iain.phillips@swa.ca
<http://www.usask.ca/biology/ess/>

Entomological Society of Manitoba

President Bob Lamb
President-Elect Robbin Lindsay
Past President Lisa Capar
Treasurer Ian Wise
Newsletter Editors Mahmood Iranpour
Marjorie Smith
Editor (Proceedings) Terry Galloway
Webmaster Rob Currie

Secretary David Wade
City of Winnipeg Insect Control Branch
1539 Waverley Street, Winnipeg, MB, R3T 4V7
E-mail: dwade@winnipeg.ca
<http://home.cc.umanitoba.ca/esm/>

Entomological Society of Ontario

President Bruce Gill
President-Elect Jeff Skevington
Past President Hannah Fraser
Treasurer Shiyou Li
Editor (Journal) John Huber
Webmaster Morgan Jackson
Secretary Nicole McKenzie
Vista Centre
1830 Bank St. P.O. Box 83025
Ottawa, ON K1V 1A3
E-mail: nicole_mckenzie@hc-sc.gc.ca
<http://www.entsocont.ca>

Société d'entomologie du Québec

Présidente Jade Savage
Vice-présidente Véronique Martel
Présidente sortante Sophie Rochefort
Trésorier François Fournier
Rédactrice (Antennae) Louise Voynaud
Webmestre Thierry Poiré
Secrétaire Julie-Éléonore Maisonhaute
Université du Québec à Montréal
Département des sciences biologiques
C.P.8888, Succ. Centre Ville, Montréal (Qc) H3C 3P8
Tél: (514) 987-3000 ext. 4799
E-mail: secretariat@seq.qc.ca
<http://www.seq.qc.ca/>

Acadian Entomological Society

President Gaetan Moreau
Vice-President Chris Cutler
Past President Christine Noronha
Journal Editor Don Ostaff
Webmaster Rick West
Secretary/Treasurer Rob Johns
Atlantic Forestry Centre
P.O. Box 4000, 1350 Regent Street South
Fredericton, NB, E3B 5P7
Tel: (506) 452-3785
E-mail: treasurer@acadianes.ca
<http://www.acadianes.org/index.html>

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

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

Published by the
Entomological Society of Canada
393 Winston Ave.
Ottawa, Ontario, Canada K2A 1Y8
www.esc-sec.ca/
entsoc.can@bellnet.ca

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

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

ISSN: 0071-0741
Customer Account No. 3975533
Publications Mail Agreement No. 40033986
Printed in Canada
Contents copyrighted 2013 by the Entomological Society of Canada

Submission deadline for the next issue: 31 October 2013



Bulletin de la Société d'entomologie du Canada

Rédacteur: Cedric Gillott
Rédactrice adjointe: Julia Mlynarek

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

Publié par la
Société d'entomologie du Canada
393 Winston Ave.
Ottawa, Ontario, Canada K2A 1Y8
www.esc-sec.ca/
entsoc.can@bellnet.ca

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

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

ISSN: 0071-0741
Numéro de client: 3975533
Numéro de convention: 40033986
Imprimé au Canada
Droits d'auteur 2012 Société d'entomologie du Canada

Date de tombée pour le prochain numéro: 31 octobre 2013



Twittering on

In her final Up front, our President has written a splendid piece on the inexorable intrusion into our lives of digital media: the internet, email, Twitter, Facebook, blogs, and the like. Rose notes that, unless these are carefully managed, they can take up increasing chunks of our time. I venture to add that on occasion this may be time when we are being paid to do something else, leading to inefficiency and waste.

Like almost all members of our Society, I imagine, I make extensive use of the internet and email both for pleasure and for work (sometimes both at once!). However, I have never found a need to open Twitter or Facebook accounts or to blog. And even in retirement I find myself so busy that I doubt I would find time to tweet, or post items on other social media sites.

Rose's statement, with reference to our Society's move to online operations and methods of communication (including use of Twitter and blog) "I want to stress how useful these tools are, and will continue to be, to our Society" does, however, bother me a little. Although I can see how multi-author blogging may rapidly provide answers to serious scientific queries, I have difficulty in finding a similar use for Twitter, named originally by its inventor, Jack Dorsey, and derived from the noun (verb) 'twitter' meaning '(to utter) a short burst of *inconsequential* information' (my italics). Indeed, a 2009 survey by Pear Analytics found

Twitter sur

Dans son Avant-propos final, notre Présidente a écrit un texte splendide sur l'inexorable intrusion des médias numériques dans nos vies : Internet, les courriels, Twitter, Facebook, les blogues et autres. Rose note que, à moins d'être gérés de façon prudente, ils peuvent gober des morceaux grandissant de notre temps. Je me permets d'ajouter que parfois, il peut s'agir de temps durant lequel nous sommes payés pour faire autre chose, menant à l'inefficacité et au gaspillage.

Comme presque tous les membres de notre Société, je suppose, je fais une utilisation vaste d'Internet et des courriels autant pour le plaisir que pour le travail (parfois les deux en même temps!). Cependant, je n'ai jamais ressenti (trouvé?) le besoin d'ouvrir des comptes Twitter ou Facebook, ou de bloguer. Et même à la retraite, je me retrouve tellement occupé que je doute de trouver le temps de twitter, ou de poster des articles sur d'autres sites de médias sociaux.

La déclaration de Rose, en référence au passage de notre Société vers des opérations et des modes de communications en ligne (incluant l'utilisation de Twitter et du blogue) « je veux mettre l'accent sur l'utilité que ces outils ont, et continueront d'avoir pour notre Société », par contre, me dérange un peu.

Bien que je vois comment les blogues à multiples auteurs peuvent fournir rapidement des réponses à des questionnements scientifiques sérieux, j'ai du mal à trouver une utilisation similaire pour Twitter, nommé à l'origine par son inventeur, Jack Dorsey, et dérivé du nom (verbe) anglais « twitter », qui signifie « (émettre) une courte rafale d'informations *inconsequentes* »¹. En effet, un sondage en 2009 par Pear Analytics a trouvé que 40% des tweets étaient dans la catégorie « babillage inutile », un autre 38% étaient purement conversationnels et presque 9% était des retweets, suggérant que bien peu tombent dans la caté-

that 40% of tweets were in the category of ‘pointless babble’, another 38% were merely conversational, and almost 9% were simply retweets, which suggested that very few fell into the ‘useful tool’ category.

Out of curiosity, I then turned to the Society’s Twitter link to see how the posts for this year fitted into the categories used by Pear Analytics. First, the good news! 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’. What dinosaurs like myself really need is for someone to write a piece on ‘The usefulness of Twitter to the ESC’ for the *Bulletin*. I’ll guarantee its publication!

My conclusion is that for the moment I shall not join the merry band of tweeters but leave the twittering to the birds

(Factual information for this piece was taken from Wikipedia (<http://en.wikipedia.org/wiki/Twitter>). The opinions expressed and conclusions drawn are those of the *Bulletin* Editor.)

gorie des « outils utiles ».

Par curiosité, je me suis ensuite tourné vers le lien Twitter de la Société afin de voir où les billets de cette année se situent dans les catégories utilisées par Pear Analytics. D’abord, les bonnes nouvelles! Sur environ 100 billets depuis le 1^{er} janvier, il n’y a qu’une poignée qui tombent dans la catégorie du babillage inutile. Cependant, un très grand nombre des billets restants (incluant même ceux qui sont des retweets) présentent simplement des informations déjà disponibles ailleurs. En résumé, je vois très peu de billets qui peuvent être considérés comme « utiles... à notre Société ». Ce dont un dinosaure comme moi-même a vraiment besoin est quelqu’un qui écrirait un texte sur « L’utilité de Twitter pour la SEC » pour le *Bulletin*. Je garantis sa publication!

Ma conclusion est que pour le moment, je ne joindrai pas la joyeuse bande de twitteurs, mais laisserai le gazouillage aux oiseaux.....

(L’information factuelle pour ce texte a été pris sur Wikipédia (<http://en.wikipedia.org/wiki/Twitter>). L’opinion exprimée et les conclusions tirées sont celles du rédacteur-en-chef du *Bulletin*.)



F. Beaulieu

Round-headed apple tree borer (*Saperda candida*) Cerambycidae

Entomological Society of Canada, 2012-2013

Société d'entomologie du Canada, 2012-2013

Executive Council / Conseil exécutif

President / Présidente

Rosemarie De Clerck-Floate
Agriculture and Agri-Food Canada
5403 - 1 Avenue South, PO Box 3000
Lethbridge, Alberta T1J 4B1
Tel: (403) 317-2270, Fax: (403) 382-3156
Email: Rosemarie.Declerck-Floate@agr.gc.ca

First Vice-President / Première vice-présidente

Rebecca Hallett
University of Guelph
50 Stone Road East
Guelph, ON N1G 2W1
Tel: (519) 824-4120 ext54488
Fax: (519) 837-0442
Email: rhallett@uoguelph.ca

Second Vice-President / Second vice-président

Staffan Lindgren
University of Northern British Columbia
Prince George, British Columbia, V2N 4Z9
Tel.: 250-960-5846
Fax: 250-960-5539
E-mail: Staffan.Lindgren@unbc.ca

Past President / Président sortant

Michel Cusson
Service canadien des forêts, Ressources naturelles Canada
1055 rue du P.E.P.S., C.P. 10380, Succ. Sainte-Foy, Québec, QC G1V 4C7
Tel: (418) 648-3944, Fax: (418) 648-5849
E-mail: michel.cusson@RNCAN-NRCAN.gc.ca

Directors-at-Large / Conseillers

Brent Elliott (2013)
Chris MacQuarrie (2014)
Zoë Lindo (2015)

Regional Directors / Directeurs régionaux

Bill Riel (ESBC), Kevin Floate (ESA), Martin Erlandson (ESS), Kateryn Rochon (ESM), Patrice Bouchard (ESO), Annabelle Firlej (SEQ), Carolyn Parsons (AES)

Student Representative /

Représentant des étudiants

Boyd Mori
University of Alberta
E-mail: bmori@ualberta.ca

Trustees / Fiduciaires

Treasurer / Trésorier

Scott Brooks
Entomological Society of Canada
393 Winston Ave. Ottawa, ON K2A 1Y8
Tel: (613) 694-2718 Fax: (613) 759-1927
Email: scott.brooks@agr.gc.ca

Secretary / Secrétaire

Alec McClay
Tel: (780) 464-4962, Fax: (780) 410-0496
Email: secretary@esc-sec.ca

Bulletin Editor / Rédacteur du Bulletin

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

Ass. Bulletin Editor / Rédactrice adj. du Bulletin

Julia Mlynarek
Carleton University, Biology Department
1125 Colonel By Drive, Ottawa, ON K2A 1Y8
Tel: (613) 520-2600 ext. 3872
E-mail: julia_mlynarek@carleton.ca

Webmaster / Webmestre

Rick West
31 Drover's Heights
Portugal Cove-St. Philips, NL A1M 3G6
Tel: (709) 895-2734
E-mail: reely.west@nl.rogers.com

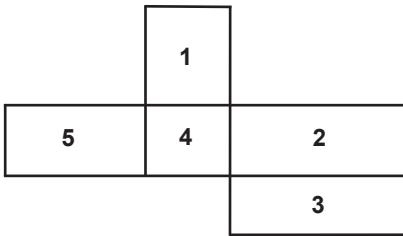
The Canadian Entomologist

Editor-in-Chief / Rédacteur en chef

Christopher Buddle
McGill University
Ste-Anne-de-Bellevue, QC H9X 3V9
Tel: (514) 398-8026
Email: chris.buddle@mcgill.ca

Head Office / Siège social

Derna Lisi (Office manager)
Entomological Society of Canada
393 Winston Ave., Ottawa, ON K2A 1Y8
Tel: (613) 725-2619, Fax: (613) 725-9349
E-mail: entsoc.can@bellnet.ca, www.esc-sec.ca/



www.esc-sec.ca/

Return Undeliverable Canadian Address to:
 Entomological Society of Canada
 Société d'entomologie du Canada
 393 Winston Avenue
 Ottawa, Ontario, Canada K2A 1Y8
 E-mail: entsoc.can@bellnet.ca

Publications Mail Agreement No. 40033986
 Date of issue: September 2013

ISSN: 0071-0741

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 curcas* 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 dodii* (Lepidoptera: Papilionidae), on *Artemisia dracuncululus*, 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.