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Images

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

Photo: W. Strong

Sous le titre: Nymphes de *Pachycoris klugii* sur *Jatropha 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

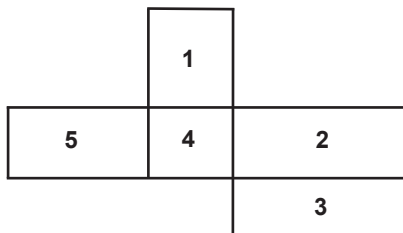
2 Fauchage de la végétation pour capturer des arthropodes terrestres dans le cadre de l'inventaire du Programme sur la Biodiversité Nordique depuis 2010. La photo été prise à Skeleton Creek Valley, juste sous le lac Hazen dans le nord de l'île Ellesmere. Les étudiants sont (de gauche à droite) Christine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





The why of who we are

Every now and then I am reluctant to use a word because its meaning in current usage somehow seems changed, thus reducing its hoped for impact. One such word is “engage”, which often is now used to generally describe participation or the request for feed-back from others. Among its various definitions (found on the internet), the following strike me as more precisely fitting my needs for use: 1) to pledge oneself, promise, undertake, agree; 2) to occupy or involve oneself, take part, be active; and 3) to interlock, mesh. Most of these meanings imply a commitment to action and to others, and thus, more aptly describe the relationship I see between the ESC and its dedicated members.

As happens when you focus on something, you start to see it everywhere. In another encountered source (Anne-Marie Syslak, Executive Director’s Message, Winter 2012/13 newsletter of the Canadian Parks and Wilderness Society, Southern Alberta Chapter), the message was on how “engagement means living your why”, and how “each of us has a why that drives our choices and actions”, which can be powerful when directed in concert with oth-

Le pourquoi de qui nous sommes

Il m’arrive de temps à temps d’être réticente à utiliser un mot parce que son usage actuel semble avoir changé, réduisant ainsi son impact potentiel. Un de ces mots est « engager », qui est souvent utilisé maintenant afin de décrire de façon générale la participation ou la demande de rétroactions chez les autres. Parmi ces différentes définitions (tirées du Petit Robert), les suivantes m’ont frappé comme correspondant plus précisément à mes besoins : 1) se lier par une promesse, une convention; 2) s’aventurer, se lancer; et 3) mettre en train, commencer. Ces définitions impliquent un engagement à agir et envers les autres, et décrivent donc mieux la relation que je vois entre la SEC et ses membres dévoués.

Comme toujours quand vous vous concentrez sur quelque chose, vous commencez à le voir partout. Dans une autre source (Anne-Marie Syslak, Message de la directrice exécutive, bulletin de la Société pour la nature et les parcs du Canada, section du sud de l’Alberta, hiver 2012/13), le message était sur la façon dont « l’engagement signifie vivre votre ‘pourquoi’ »¹ et comment « chacun de nous a un ‘pourquoi’ qui mène nos choix et actions »², ce qui peut être puissant lorsque dirigé de concert avec d’autres gens pour une cause.

La SEC a une base solide de membres « engagés » qui voient clairement le « pourquoi » ou l’importance de notre Société « pour étudier, faire avancer et promouvoir l’entomologie »³ tel qu’initialement présenté comme notre but dans les lettres patentes lors

1 Traduction libre du texte original : « engagement means living your why »

2 Traduction libre du texte original : « each of us has a why that drives our choices and actions »

3 Traduction libre du texte original : « to study, advance and promote entomology »

ers towards a cause (to use a metaphor; when the gears are interlocked or meshed).

The ESC has a strong base of ‘engaged’ members who clearly see the ‘why’ or importance of our Society “to study, advance and promote entomology” as originally presented as our purpose in the *Letters Patent* during incorporation as a society back in 1956. The commitment to serve the Society for these individuals is more than just providing requested feed-back or fulfilling a duty. It also represents a passion for entomology and a commitment to each other while serving a greater purpose. Over the past few months, I have witnessed our members (as part of the Ad hoc Committee on Mission and Future) engage in meaningful and lively discussions on our Society’s renewed mission and vision. I have seen our Student Affairs Committee independently commit to improving the effectiveness and outreach of the Graduate Students’ Symposium and then doing something about it (check out their section on p. 60 on some changes they will be trialing at the Guelph JAM this year). More recently, a group of members has stepped up on their own to meet and discuss strategies for finding our next Treasurer. These are all sure signs of a highly engaged and committed membership.

If you listen carefully, you will hear the ‘why of who we are’ echoed by our members at every meeting, in both words and actions. It comes from those who care deeply about the entomological community, and I believe is the reason why our Society continues to be strong after 150 years. The ‘why’ also can be infectious when shared, which attracts new members to our Society. As I am discovering this year especially, there is both a responsibility and a joy in being engaged with the ESC, which has personally given me comfort and strength when dealing with the challenges we face as scientists in the current environment.

Once the Ad hoc Committee on Mission and Future presents a refreshed mission and vision for us to carefully consider and vote on, it will be important that we still clearly hear the ‘why’ for our Society and that it makes sense to our

de l’incorporation en tant que société en 1956. L’engagement à servir la Société pour ces gens est plus que simplement fournir la rétroaction demandée ou remplir une tâche. Cela représente aussi une passion pour l’entomologie et un engagement les uns envers les autres afin de servir un objectif plus large. Au cours des derniers mois, j’ai vu nos membres (en tant que membre du comité ad hoc sur la mission et le futur) engager des discussions vivantes et sensées sur la mission et la vision renouvelée de notre Société. J’ai aussi vu notre comité des affaires étudiantes s’engager de façon indépendante à améliorer l’efficacité et la portée du symposium des étudiants gradués, pour ensuite faire quelque chose pour y arriver (consultez leur section p. 60 sur certains changements qu’ils essaieront à la réunion de Guelph cette année). Plus récemment, un groupe de membres s’est rassemblé pour discuter de stratégies afin de trouver notre prochain trésorier. Voilà des signes de membres engagés et convaincus.

Si vous écoutez bien, vous entendrez le « pourquoi de qui nous sommes » repris par nos membres à chaque réunion, autant dans les mots que dans les actes. Il vient de ceux qui ont à cœur la communauté entomologique, et je crois qu’il y a une raison pour laquelle notre Société continue d’être forte après 150 ans. Le « pourquoi » peut aussi être contagieux lorsque partagé, ce qui attire de nouveaux membres dans notre Société. Comme je le découvre particulièrement cette année, il y a une responsabilité autant qu’une joie dans le fait d’être engagé avec la SEC, ce qui m’a personnellement donné du réconfort et de la force lorsque je gère les défis auxquels nous faisons face en tant que scientifiques dans l’environnement actuel.

Une fois que le comité ad hoc sur la mission et le futur présentera une mission et une vision mises à jour afin que nous puissions bien les considérer et voter, il sera important que nous entendions toujours clairement le « pourquoi » de notre Société et que ce soit logique pour nos membres en fonction d’où nous sommes rendus, qui nous sommes et où nous désirons

membership based on where we have come, who we are, and where we wish to go. I urge all of you to test drive the new 'why' when it is unveiled by Michel Cusson and his committee in the months ahead.

As an integral part of our why and identity, we also need to be cognizant of our long relationship with the regional societies. This relationship is now front and centre for the Ad hoc Committee on Transitioning as they grapple with how to comply with the legal requirements for the ESC's current Governing Board to restructure as a "Board of Directors of a corporation". This is part of the rewriting of our by-laws to comply with the federal government's new Not-for-profit Corporations Act. (See "Up front" in the March 2013 Bulletin, 45[1]). Our current system of the regional societies appointing representatives to our Governing Board has served us well for many decades. We see the ESC's partnership with the regional societies as a strength and definitely an integral part of who we are and why as a national scientific society. Thus, we will be doing all that we can to maintain the current system moving forward and will 'engage' the regional societies to help us in this task. It will be extremely important that we immediately gather the interest, commitment and momentum to work jointly on this (i.e., the ESC and all regional societies), as we need to vote on draft by-laws and articles of continuance at the Guelph AGM this fall if we are to transition safely before the 17 October 2014 deadline.

Before signing off, I wish to share a few other announcements and projects being driven by our committed members:

It is official now! Our Board of Governors has approved the co-location of our 2016 annual meeting with the International Congress of Entomology (ICE) hosted by the Entomological Society of America (ESA) in Orlando, Florida (see the full notice on p. 82). Murray Isman (UBC) is ESC's representative to the ICE Organizing Committee and already has been working with the ESA in securing our requirements for separate, pre-ICE, ESC

aller. Je vous encourage fortement à tester le nouveau « pourquoi » quand il sera dévoilé par Michel Cusson et son comité dans les mois qui viennent.

En tant que partie intégrale de notre « pourquoi » et de notre identité, nous devons également être conscients de notre longue relation avec les sociétés régionales. Cette relation est maintenant au centre du comité ad hoc sur la transition alors qu'ils luttent pour voir comment se conformer avec les exigences légales afin que le conseil d'administration actuel de la SEC se restructure selon la nouvelle loi. Cela fait partie de la réécriture des règlements intérieurs afin de respecter la nouvelle Loi canadienne sur les organisations à but non lucratif. (Consultez l'Avant-propos du Bulletin de mars 2013, 45[1]). Notre système actuel où les sociétés régionales désignent des représentants sur notre conseil d'administration nous a bien servi pour plusieurs décennies. Nous voyons le partenariat de la SEC avec les sociétés régionales comme une force et définitivement une partie intégrale de qui nous sommes et pourquoi en tant que société scientifique nationale. Nous ferons donc tout ce qui est en notre pouvoir afin de maintenir le système actuel tout en allant de l'avant et nous « engageons » les sociétés régionales à nous aider dans cette tâche. Il sera très important que nous ayons immédiatement l'intérêt, l'engagement et la lancée pour travailler conjointement là-dessus (i.e. la SEC et toutes les sociétés régionales), puisque nous devons voter sur des ébauches de règlements intérieurs et les statuts de prorogation à l'AGA de Guelph cet automne si nous voulons faire la transition en douceur avant la date limite du 17 octobre 2014.

Avant de quitter, je souhaite partager quelque autres annonces et projets menés par nos membres dévoués :

C'est maintenant officiel! Notre conseil d'administration a approuvé la tenue de notre réunion annuelle 2016 avec le Congrès International d'entomologie (ICE), accueilli par la Société d'entomologie d'Amérique (ESA), à Orlando en Floride (voir l'annonce com-

business sessions (e.g., Board meetings, AGM, and award presentations: 23-24 September), as well as merged access to the ICE scientific program (25-30 September).

I can now formally announce the following appointments as Trustees of our Scholarship Fund for 2013; Michel Cusson (Past-President) as Chair of the Board of Trustees, Scott Brooks (Treasurer) and Judy Myers (Chair, Student Awards Committee). The Scholarship Fund is registered as a 'Trust', and thus must be legally managed (including approving the list of students to receive the funds) by a Board of Trustees appointed annually and announced by the President.

Planning for the Joint Annual Meeting of Entomological Societies of Canada and Ontario (October 20-23, 2013, Guelph) is fully on track and promises to be a great celebration of our 150th anniversary. Keep checking the JAM website (<http://www.uoguelph.ca/debu/esc-eso2013/esc-eso.html>) for updates and calls, and don't forget to **register early by August 15!** Because of anticipated meeting travel restrictions this year for federal government employees, we need everyone who can attend to make a special effort to be there.

Due to the efforts of Peter Mason in working with the publisher (CABI) and of Webmaster, Rick West, in enabling the hosting, there now is free online access for Volumes 1-3 of the comprehensive *Biological Control Programmes in Canada* series on our ESC website (<http://www.esc-sec.ca/cabi.php>).

And don't forget to periodically check (or enable alerts for posts on) our ESC blog (<http://escsecblog.com/>). The blog is quickly becoming a new avenue for rapid and current communication on entomological matters. Of course, it cannot replace the *Bulletin*, which plays an important role as a historical record of the Society's activities and source of information on annual meetings. However, I am starting to see the value of the blog as an extension of the *Bulletin* and a relevant (and human) voice for our Society and science (e.g., see *The Canadian Entomologist* Editor's Pick March 2013 at [plète en p. 82\). Murray Isman \(UBC\) est le représentant de la SEC sur le comité organisateur de l'ICE et a déjà commencé à travailler avec la ESA afin d'assurer que nos exigences pour des sessions séparées et précédent l'ICE pour les affaires de la SEC \(p. ex. les réunions du CA, l'AGA et les présentations associées à des prix : les 23-24 septembre\), ainsi que l'accès au programme scientifique de l'ICE \(25-30 septembre\).](http://escsecblog.com/2013/04/01/canadian-</p></div><div data-bbox=)

Je peux maintenant formellement annoncer les nominations suivantes comme fiduciaires de notre Fonds de bourses d'études 2013 : Michel Cusson (président sortant) comme président du conseil des fiduciaires, Scott Brooks (trésorier) et Judy Myers (présidente du comité des prix étudiants). Le Fonds des bourses d'études est enregistré en fiducie et doit donc être légalement géré (incluant l'approbation de la liste des étudiants qui reçoivent les fonds) par un conseil de fiduciaires nommé annuellement et annoncé par le président.

L'organisation de la réunion conjointe annuelle des Sociétés d'entomologie du Canada et de l'Ontario (20-23 octobre 2013, Guelph) est sur la bonne voie et la réunion promet d'être une magnifique célébration de notre 150^e anniversaire. Consultez régulièrement le site Internet de la réunion (<http://www.uoguelph.ca/debu/esc-eso2013/sec-seo.html>) pour des mises à jour, des appels, et n'oubliez pas de vous **inscrire tôt avant le 15 août!** À cause des restrictions de voyage anticipées cette année pour les employés du gouvernement fédéral, nous avons besoin que tous ceux qui peuvent y assister fassent un effort spécial pour y être.

Grâce aux efforts de Peter Mason qui a travaillé avec la maison d'édition (CABI) et du webmestre, Rick West, qui en a permis l'hébergement, il y a maintenant un accès en ligne gratuit pour les volumes 1 à 3 de la série exhaustive *Biological Control Programmes in Canada* sur le site Internet de la SEC (<http://www.esc-sec.ca/f-cabi.php>).

Et n'oubliez pas de consulter régulièrement (ou d'activer les alertes pour les billets) notre blogue de la SEC (<http://escsecblog.com/>).

entomologist-editors-pick-march-2013/).

Enjoy your summer everyone, and best wishes for some terrific entomological data collection whether from field or bench.

Le blogue devient rapidement une nouvelle avenue pour la communication rapide et actuelle sur les sujets entomologiques. Évidemment, il ne remplace pas le *Bulletin*, qui joue un rôle important en tant que trace historique des activités de notre Société et de source d'information sur les réunions annuelles. Cependant, je commence à voir la valeur du blogue comme une extension du *Bulletin* et une voix pertinente (et humaine) pour notre Société et pour la science (p. ex. voir la sélection de l'éditeur de *The Canadian Entomologist* - mars 2013 sur <http://escsecblog.com/2013/04/01/canadian-entomologist-editors-pick-march-2013/>).

Que tout le monde apprécie son été, et meilleurs souhaits pour des collectes de superbes données entomologiques que ce soit sur le terrain ou à la paillasse.



M.-P. Mignault

Fulgoridae and ants

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

The Entomological Society of Ontario invites you to the 2013 Joint Annual Meeting of the Entomological Society of Canada and the Entomological Society of Ontario, to celebrate the Sesquicentennial Anniversaries of both societies and our joint history. In recognition of the 150th 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 (see <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.

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

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.

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

La Société d'entomologie de l'Ontario vous invite à la réunion conjointe annuelle 2013 de la Société d'entomologie du Canada et de la Société d'entomologie de l'Ontario, afin de célébrer les anniversaires cent cinquantaire des deux sociétés et notre histoire conjointe. En reconnaissance du 150^e anniversaire, nous prolongeons la conférence sur 4 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 (voir <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 diplômés, 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.

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.

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.

On collaboration



Recent events in my professional life have me thinking about what makes or breaks collaboration. Is it the people, the questions, the type of work, or is it all the small things that we don't often notice? So, rather than answer a question in this edition of Dear Buggy, I thought I'd share a few thoughts I've had on the matter.

Collaborations are the lifeblood of science. I was going to write 'modern science' as it seems that we are repeatedly advised by our deans and directors to collaborate more. That said, collaborating in science is not a new phenomenon. They are, in fact, at the core of many important discoveries. The Wright brothers, Banting and Best, Watson and Crick (and the oft-forgotten Franklin) are famous collaborators who accomplished great engineering, medical, and scientific feats.

Today though, interdisciplinary collaboration is all the buzz. We are told that the important scientific questions are too large and too complicated for one person to tackle. I don't agree with this generality, but evidence shows that the average number of authors on scientific papers has been increasing with time (King 2012). So, at least the data seem to support the idea that collaborations are more common.

So how should we collaborate, and more importantly how do we do it well? In truth, we are collaborating all the time. We might partition work in our labs among assistants or students, we share responsibilities on committees, and we help out colleagues with problems. We might not call these 'collaborations', often because they are either products of a work environment, or they are ephemeral, lasting only as long as it takes to accomplish a specific task. Nonetheless, they are valuable and can form the nucleus around which larger, more formal collaborations can develop. It is these collaborations that I'd like to spend the rest of this column discussing.

How does one become a 'good' collaborator? I don't pretend to have all the answers, partly because I have not participated in many collaborations, and partly because my experiences have been (more or less) positive (not always positive?). Now I've had the chance to observe a few, shall we say, less-than-successful collaborations, I would like to offer the following tips.

Bring something valuable to the collaboration (and know what it is). When you're asked to collaborate, it should be obvious why you're needed. If you don't know, or can't tell, then ask. An effective collaboration needs people who bring complementary skills to the table. Perhaps more importantly, be honest if you can't do what you've been asked. It might be humbling to turn down a great opportunity, but it's worse to get in over your head and be unable to deliver.

Discuss responsibilities early. Decide who is responsible for what and when must they deliver. When everyone is on the same page, you're working as a team. When things aren't clear, work can be duplicated, time wasted, and feelings hurt. This is important in scientific collaborations where we can have a tendency to want to follow interesting trends in data. Usually, it's OK to chase these trends, but it can be a recipe for disaster if in the process you start to encroach onto someone else's turf. Worse still, it can lead to duplication and wasted effort.

Chris MacQuarrie is a research scientist with Natural Resources Canada Canadian Forest Service in Sault Ste. Marie where he studies the management of native and invasive insects. Currently, he's looking forward to a summer of data analysis and writing manuscripts. No really he is. Honest. Have an idea for a column? Send it to cjkmacquarrie@gmail.com, ping me on twitter @cmacquar, or post in the Facebook student group

Respect your commitments (and be honest when you can't). If you promised something for January, but you can't have it ready until March, say so. This happens to everyone and we can all deal with delays. If your collaborators know you are going to be later than you promised, they can adjust their schedules. It is worse to leave them in limbo, constantly wondering when your work is going to arrive. This advice applies to estimating the amount of time it will take to complete your work. Be honest, if you need a week to complete a task then say so; don't be unrealistic, or set deadlines you can't meet. Lastly, own up to it if something happens and you can no longer deliver on a promise. Tell your collaborators that you need to step back. It's more productive to find a replacement and move on, rather than force them to wait for something you may never deliver.

Communicate, communicate, communicate. Attend meetings and try to respond to email. If you're too busy to respond or attend, then at least tell your collaborators when you will be available. Few things are more frustrating than not receiving a response to emails or requests to meet. I don't mind that you're busy, or on vacation, or just don't have time for me. I would like to know so I don't think you're dodging me as we all have the tendency to assume the worst.

Set timelines and deadlines. Developing reasonable deadlines, milestones and plans of action early on in a collaboration is essential. It allows people to integrate the new work into their existing commitments. For example, when you need input or comments on a document set a hard deadline after which you intend to proceed (e.g., "Dear colleagues, here is the draft. I need your comments in 2 weeks after which I will collate what I receive and send it to the agency."). This serves two purposes: it minimizes frustration and wasted time, and lets those who might be busy off the hook. If they are swamped with work and can't get to it that's fine. Establishing these plans of action in advance will allow your collaborators to prioritize their responsibilities. They know that if they really want to contribute they have to do so by a certain date. After that you're moving on.

Recognize that there is more than one way to skin a cat. Scientists have a tendency to want things done their way. In reality, there can be many paths to a solution. Effective collaboration requires your acknowledgement that collaborators may choose an approach you may not agree with. Effective communication at the outset of the project will often mitigate this problem. When it doesn't, the challenge for you as a collaborator is to focus on the destination, rather than the journey.

Deal with conflict. Big disagreements often have their genesis in small misunderstandings. Be aware that small things can fester and cause major problems later. When leading collaborations, be on the lookout for signs that things are not working well among your partners and deal with them promptly. As a collaborator be clear about what you need and make sure you understand what is being asked of you. It is inevitable that conflicts will happen; when they do, deal with them promptly and professionally. Don't allow things to grow into issues that sink the whole project.

Lastly, **stay positive.** A good attitude can go a long way to easing any pains that may arise. Your fellow collaborators are in a project for the same reasons as you. We all want to discover something new and interesting. Despite behaviour that may seem to the contrary, very rarely is someone trying to sabotage a group. Sometimes it's just a matter of understanding your collaborators' motivations and seeing things through their eyes. If you can do this you're on your way to doing amazing things.

Buggy

Reference

King, C. 2012. Multiauthor papers: Onward and upward. ScienceWatch Newsletter. Online at: http://archive.sciencewatch.com/newsletter/2012/201207/multiauthor_papers/ accessed 3 May 2013.

The student wing / L'aile étudiante

Chandra Moffat & Boyd Mori



Hello Everyone! I hope you are all enjoying some lovely spring weather! I know with the particularly long winter Edmonton had this year, which those of you at the JAM last November experienced firsthand, I am really enjoying it! With summer just around the corner and most entomologists busy writing, or working in the field and laboratory, don't forget to register for this year's Joint Annual Meeting of the Entomological Societies of Canada and Ontario. This year's meeting will take place in Guelph, Ontario, 20-23 October. Stop by the Entomological Society of Canada website for more information and a link to the official JAM website. Some important conference deadlines include: 31 July for the Ed Becker Conference Travel Award, 15 August for early bird registration, and 15 September to submit a paper and poster for President's Prize and Graduate Student Showcase competitions. If you are a student looking for a roommate, the Student Affairs Committee runs a roommate registry. Please contact escjam2013roommates@gmail.com to be added to the list.

Graduate Student Showcase

The Graduate Student Showcase has been revamped this year. We made changes to the application process to gain further insight into the applicant's research and background. Also new for this year, the GSS will take place on Sunday 20 October from 5 pm to 7 pm following the Plenary Session. This is a dedicated time slot, with no conflicting talks! Be sure to attend and help support up-and-coming graduate students. For details on how to apply please see the Call for Applications later in this *Bulletin*.

Bonjour à tous! J'espère que vous appréciez l'agréable météo printanière! Personnellement, avec l'hiver particulièrement long qu'Edmonton a eu cette année, et pour lequel ceux qui étaient à la réunion conjointe annuelle en novembre dernier ont eu un aperçu, je l'apprécie vraiment! Avec l'été à nos portes et la plupart des entomologistes occupés à écrire, ou à travailler sur le terrain ou dans le labo, n'oubliez pas de vous inscrire pour la réunion conjointe annuelle des Sociétés d'entomologie du Canada et de l'Ontario de cette année. La réunion de cette année se tiendra à Guelph, en Ontario, du 20 au 23 octobre. Allez sur le site Internet de la Société d'entomologie du Canada pour plus d'information et pour le lien vers le site officiel de la réunion. Quelques dates limites importantes incluent : le 31 juillet pour la bourse Ed Becker pour la réunion annuelle, le 15 août pour les inscriptions hâtives et le 15 septembre pour la soumission de résumés pour le prix du président et la vitrine pour les étudiants gradués. Si vous êtes un étudiant cherchant un coloco, le comité des affaires étudiantes tient un registre de colocos. Contactez escjam2013roommates@gmail.com pour être ajouté à la liste.

Vitrine pour les étudiants gradués

La vitrine pour les étudiants gradués a été revampée cette année. Nous avons changé le processus d'application afin d'avoir un meilleur aperçu sur les recherches et le passé du candidat. De plus, la vitrine se tiendra cette année le dimanche 20 octobre de 17:00 à 19:00, après la session plénière. Il s'agit d'une période de temps dédiée à la vitrine, sans conflit avec d'autres présentations! Assurez-vous d'y assister et de soutenir les étudiants à l'avenir prometteur. Pour plus d'information sur les applications, consultez l'appel à soumission plus loin dans ce *Bulletin*.

Objets pour les enchères silencieuses recherchés!

Le comité des affaires étudiantes organise des enchères silencieuses qui se tiendront durant la réunion conjointe annuelle. Tous les fonds amassés lors des enchères silencieuses seront

Silent Auction items needed!

The Student Affairs Committee is organizing a Silent Auction to be held during the Joint Annual Meeting. All funds raised through the Silent Auction are donated to the ESC Student Scholarships and Awards fund. If you or someone you know is cleaning out the office and looking to get rid of entomology related books or other items (trinkets, artwork, jewellery, field gear, t-shirts, etc.), the Silent Auction would love to have them. 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

The Silent Auction is a great opportunity to find really neat books and things at excellent prices and to show your support for student members of the ESC. So, be sure to come by and browse the Silent Auction tables - you never know what you might find!

Other student related news

Be sure to check out the ESC Student Facebook page, as well as the ESC website for information on research opportunities. Also, a new updated version of the Directory of Entomological Education in Canada will be posted to the website in the upcoming months. 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.

Interested in serving the ESC and the Student Affairs Committee? Feel free to contact us at students@esc-sec.ca.

Enjoy your summer!
Boyd

donnés au Fonds pour les prix et bourses étudiants de la SEC. Si vous, ou quelqu'un que vous connaissez, faites du ménage dans votre bureau et cherchez à vous débarrasser de certains items ou livres liés à l'entomologie (pièces d'art, bijoux, accessoires de terrain, t-shirts, etc.), les enchères silencieuses adoreraient les avoir. Merci de les apportez avec vous lors de la réunion et de les déposer aux tables des enchères silencieuses (près de la table d'inscription). Pour des articles plus lourds ou gros, ou si vous voulez envoyer vos dons à l'avance (veuillez noter que les frais d'envoi ne seront pas remboursés), veuillez les envoyer à :

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

Les enchères silencieuses sont une excellente opportunité pour trouver des livres et des objets à d'excellents prix et de montrer votre soutien aux membres étudiants de la SEC. Alors venez faire un tour et fouiner sur les tables des enchères silencieuses – vous ne savez pas ce que vous pourriez y trouver !

Autres nouvelles pour les étudiants

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. De plus, une version à jour du répertoire des formations entomologiques au Canada sera affichée sur le site Internet dans les prochains mois. Le comité des affaires étudiantes est votre voix étudiante à la Société d'entomologie du Canada, alors si vous avez des questions, commentaires ou suggestions sur des questions concernant les étudiants, n'hésitez pas à nous écrire à students@esc-sec.ca.

Intéressé à servir la SEC et le comité des affaires étudiantes ? N'hésitez pas à nous contacter à students@esc-sec.ca.

Bon été !
Boyd

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.

Bailey, Pamela. PhD, 2013. Pollination biology of the endemic *Erigeron lemmonii* A. Gray, and its insect visitor networks compared to two widespread congeners *Erigeron arisolius* G.L. Nesom and *Erigeron neomexicanus* A. Gray (Asteraceae). Supervisors: Peter Kevan and Paul Voroney, University of Guelph.

Illerbrun, Kurt K. PhD, 2013. The role of climate mediated tree-line rise in altering interactions between an alpine plant and its insect herbivore. Supervisor: Jens Roland, University of Alberta.

Graduate Student Showcase 2013: Call for Applications

Vitrine pour les étudiants gradués 2013 : Appel à soumission

Graduate students are invited to present their research at the 2013 Graduate Student Showcase (GSS). The GSS will be held on Sunday, October 20 from 5 pm to 7 pm during the **Joint Annual Meeting of the Entomological Society of Canada and the Entomological Society of Ontario in Guelph (20-23 October 2013)**. The purpose of the GSS is to provide a high profile opportunity for graduate students near the completion of their degrees to present a more in depth overview of their thesis research.

Les étudiants gradués sont invités à présenter leurs recherches lors de la vitrine pour les étudiants gradués 2013. Cette vitrine se tiendra le dimanche 20 octobre de 17:00 à 19:00 durant **la réunion conjointe annuelle de la Société d'entomologie du Canada et de la Société d'entomologie de l'Ontario à Guelph (20-23 octobre 2013)**. Le but de cette vitrine est de fournir une opportunité unique, pour les étudiants gradués approchant la fin de leur diplôme, de présenter une revue plus approfondie de leur thèse de recherche.

Applicants to the GSS must:

-have defended or plan to defend their thesis at a Canadian University within 1 year of the meeting

-be the principal investigator and principal author of the presented work

-be registered at the meeting

Eligible candidates who wish to be considered for the GSS must submit a complete application to gsscommittee@gmail.com, following the instructions below:

Submit a 250 word abstract describing the proposed presentation highlighting their work

Submit a 1 page (single-spaced, 12 font) outline of their research, including rationale/significance, methodology, and results to date

Arrange to have the principal supervisor

Tout candidat doit :

- avoir soutenu, ou prévoir soutenir leur thèse dans une université canadienne à l'intérieur d'un an avant ou après la réunion,

- être le principal investigateur et le principal auteur des travaux présentés,

- être inscrit à la réunion.

Les candidats éligibles qui souhaitent être considérés pour la vitrine pour les **étudiants gradués** doivent soumettre une application complète à gsscommittee@gmail.com, selon les instructions suivantes :

Soumettre un résumé de 250 mots décrivant la présentation proposée sur leurs travaux

Soumettre une page (interligne simple, taille 12) présentant les grandes lignes des recherches, incluant les fondements et la portée, la méthodol-

email a letter of support that confirms the anticipated or actual date of graduation and comments on the proposed presentation and the applicant's presentation and research abilities

Include a CV that includes a list of previous conference presentations and other presentation experience

All information must be submitted/mailed by **15 September 2013**. All applicants will be notified of the status of their application. Unsuccessful applicants to the GSS will have their talks *automatically* moved to a President's Prize Oral submission.

Differences between the GSS and the President's Prize (PP) Competition include:

New for this year: the GSS will take place in its own dedicated time slot; there will be no conflicting talks!

Presenters in the GSS are given more time to speak about their research (24 minutes total, 20 for the presentation and 4 for questions) compared to the PP (15 minutes total)

Abstracts for talks presented in the GSS are published in the *ESC Bulletin*, an open access publication, received by all ESC members and over 300 libraries around the world

The selection process for the GSS is competitive (only selected students speak), compared to the PP where all students who enter speak but only one per category receives a prize

All presenters in the GSS receive a \$120 honorarium

We would like to encourage all eligible students to apply for the GSS. Supervisors, please encourage your students to apply and please help us to spread the word!

Any questions can be directed to gsscommittee@gmail.com

Boyd Mori, Paul Abram, and Andrew Frewin
Graduate Student Showcase Committee

ogie et les résultats jusqu'à maintenant

S'assurer que le directeur principal envoie, **par courriel**, une lettre confirmant la date réelle ou anticipée de graduation, et commentant la présentation proposée et les habiletés de recherche et de présentation du candidat

Inclure un CV incluant la liste des présentations données dans des conférences précédentes et l'expérience de présentation

Toutes les informations doivent être soumises par courriel avant le **15 septembre 2013**. Tous les candidats seront informés du statut de leur application. Les candidats non-sélectionnés pour la vitrine verront leur résumé *automatiquement* transféré pour une présentation orale pour le prix du président.

Les différences entre la vitrine pour les étudiants gradués et le prix du président incluent :

Nouveau cette année : la vitrine se tiendra dans sa propre période de temps – il n'y aura aucun conflit avec d'autres présentations!

Les participants de la vitrine ont davantage de temps pour présenter leurs recherches (24 minutes au total, 20 pour la présentation et 4 pour des questions) que les participants au prix du président (15 minutes au total)

Les résumés des présentations de la vitrine sont publiés dans le *Bulletin de la SEC*, une publication libre d'accès, reçue par tous les membres de la SEC et plus de 300 bibliothèques dans le monde

Le processus de sélection pour la vitrine est compétitif (seuls les étudiants sélectionnés présentent), alors que dans la compétition pour le prix du président, tous les étudiants qui soumettent un résumé présentent, mais un seul étudiant par catégorie reçoit un prix

Tous les participants à la vitrine pour les étudiants gradués reçoivent un montant honoraire de 120\$

Nous encourageons tous les étudiants éligibles à appliquer pour la vitrine pour les étudiants gradués. Merci aux directeurs d'encourager vos étudiants et de diffuser l'information!

Toute question peut être adressée à gsscommittee@gmail.com.

Boyd Mori, Paul Abram et Andrew Frewin
Comité de la vitrine pour les étudiants gradués

Entomologists receive Queen Elizabeth II Diamond Jubilee Medal

The Entomological Society of Canada offers congratulations to the following recipients of the QEII Diamond Jubilee Medal.

Paul Catling (Eastern Cereal and Oilseed Research Centre, AAFC, Ottawa)

Paul's entomological interests are in the taxonomy, distribution and ecology of dragonflies, grasshoppers and their relatives, and butterflies. He has also published articles on the importance of imperiled habitats and fire in maintaining insect diversity. He spent 8 years as Arthropod Co-chair on the Committee on the Status of Endangered Wildlife in Canada and assisted with the assessment of a few dozen insects in risk categories, as a component of his broader work in environmental conservation.



Don Lafontaine (Eastern Cereal and Oilseed Research Centre, AAFC, Ottawa)

Don's research is in the classification and biogeography of Lepidoptera, with emphasis on Holarctic relationships. This includes improving communication and collaboration between Eurasian and North American researchers, and the development of a consensus for the higher classification of the Noctuoidea of the world.

Tom Lowery (Pacific Agri-Food Research Centre, AAFC, Summerland)

Tom's research primarily involves the development of an integrated pest management program for grapes and studies of the epidemiology and management of insect-borne plant diseases. Related to both these areas of study is an interest in the biology and management of aphids, leafhoppers and other homopteran pests.



Stephen F. Pernal (Research Farm, AAFC, Beaverlodge)

Stephen's entomological interests concern honey bees and native pollinators. He has performed research examining the detection and treatment of bee pathogens and parasites, as well as maintaining long-held interests in nutrition, foraging behaviour and semiochemistry. Stephen was also instrumental in establishing the recently-opened National Bee Diagnostic Center at AAFC's Beaverlodge Research Farm.

Pat Mackay (Department of Entomology, University of Manitoba)

Pat continues her interests in insects and things ecological in retirement. With her husband, Bob Lamb, she spends much time on their joint aphid project, on the population dynamics of *Uroleucon rudbeckiae*, a beautiful big red aphid on the native wildflower *Rudbeckia laciniata* or tall coneflower. She also continues to be active in the Department where she is a Senior Scholar, as well as in the Entomological Society of Manitoba. She is a Commissioner on the Clean Environment Commission, an arms-length body of the Government of Manitoba, and recently finished 10 weeks of hearings to provide advice to the Provincial Government on licensing a Manitoba Hydro project.



Charles Vincent

En décembre 2012, Charles Vincent (Agriculture et agro-alimentaire Canada, Saint-Jean-sur-Richelieu, Québec) a appris qu'il a été élu Membre étranger de l'Académie d'Agriculture de France, section Cultures, systèmes de production et produits végétaux. Fondée en 1761 par Louis XV sous le nom "Société d'agriculture de la Généralité de Paris", la Société a traversé les siècles pour être reconnue d'utilité publique en 1878. Elle a son nom actuel selon une loi votée en 1901 qui définissait sa mission, notamment de contribuer, dans les domaines scientifique, technique, économique, juridique, social et culturel à l'évolution de l'agriculture et du monde rural. Elle compte 120 membres titulaires et 180 correspondants français, ainsi que 60 membres étrangers. Le siège social de l'Académie est au 18 rue de Bellechasse dans le 7^e arrondissement de Paris (Figures 1 et 2). Le 6 février 2013, Charles Vincent y a prononcé sa première allocution intitulée «Regards sur les méthodes alternatives aux insecticides en agriculture». Il a également participé à la rencontre du 27 février de sa section.



Pour des informations sur l'Académie, consultez: <http://www.academie-agriculture.fr/>

In December 2012, Charles Vincent (Agriculture and Agri-Food Canada, Saint-Jean-sur-Richelieu, Quebec) learned that he has been elected Foreign Member of the "Académie d'Agriculture de France, section Cultures, systèmes de production et produits végétaux". Created in 1761 by Louis XV under the name "Société d'agriculture de la Généralité de Paris", the Society survived the centuries to be recognized as having a public value in 1878. Its current name dates from 1901, when a law defined its mission, that is, to contribute to the development of agriculture and rurality in scientific, technological, economic, law, societal and cultural fields. The Academy has 120 members and 180 correspondents from France, and 60 foreign members. Its headquarters are located at 18 rue de Bellechasse in Paris' 7th Arrondissement (Figures 1 and 2). On 6 February 2013, Charles Vincent did his first presentation entitled "Regards sur les méthodes alternatives aux insecticides en agriculture". He also participated in the meeting that occurred on 27 February 2013.

For more information on the Academy, visit: <http://www.academie-agriculture.fr/>

Léon Provancher (1820-1892): A priest who wanted to know everything about nature and, above all, insects

Jean-Pierre Bourassa

Léon Provancher was born on 10 March 1820, in Bécancour, a municipality along the south shore of the St-Lawrence facing Trois-Rivières in the Province of Quebec. From his early childhood, he developed a fascination for fields and forests. He quickly became interested by plants and animals, but over time botany developed as his major interest. His numerous walks along the river's bank led him to find fossil molluscs. These animals' remains increased his interest in natural sciences. He wanted to know everything about the nature around him; he learned the names of the organisms he loved to observe. However, back then, the sciences were only a small part of the school curriculum.

After studying at the town's school and accomplishing his tasks at the parish presbytery, he was admitted to the Seminary of Nicolet near his birthplace in order to continue his theological studies. He was ordained priest at the Major Seminary of Quebec. He would become vicar in several parishes; he would even agree to extend his religious functions to Grosse Isle downstream from the Island of Orleans, on which Irish immigrants afflicted with typhus were isolated. Between 1854 and 1862, he was the priest in the Saint-Joachim parish near Quebec City; here, his strong personality led him to take on new duties, including improving the church and its outbuildings. During these years, he wrote and published five scientific manuscripts on botanical and anecdotal facts from Canadian history and, under a pseudonym, he wrote "*Essai sur les insectes et maladies qui affectent le blé*"¹, his first entomological publication (1857).

In 1862, Provancher, then priest in Portneuf, a village between Trois-Rivières and Quebec City, published "*Flore canadienne*"² and "*Verger canadien*"³ while taking care of the well-being of his parishioners. That is also when he really became involved in entomology. His forays into the countryside enabled him to discover a fascinating world that led him to observation, study, and also description of many insect species. In 1866, he founded the still-existing journal "*Le Naturaliste Canadien*" for which he produced several articles on insects, as well as on different aspects of nature. His strong mindedness would sometimes hurt him with respect to both collaboration with others and his ability to obtain funds to support his work. However, it was this same determination that enabled him to pursue his work despite the drawbacks. Retiring in 1872,



L'abbé Léon Provancher. (Source: Collections de l'Université Laval. Courtesy of Jean-Marie Perron)

- 1 Free translation: "*Essay on the insects and diseases affecting wheat*"
- 2 Free translation: "*Canadian Flora*"
- 3 Free translation: "*Canadian Orchard*"

Jean-Pierre Bourassa (jean-p.bourassa@hotmail.com) is an emeritus professor at the Université du Québec à Trois-Rivières. He has served on the Heritage Committee for several years. He notes "A part of Provancher's insect collection was given to Collège de Lévis situated on the south shore of the St. Lawrence River, opposite Quebec City. Having started my career as a teacher in this institution, I sometimes showed the specimens collected by the entomologist Provancher to my students."

Provancher lived in Cap-Rouge, a suburb of Quebec City, where he continued to sample insects, building up a collection of more than 30,000 identified specimens, and above all, describing more than a 1000 new species. He even acquired the nickname “the Linnaeus of insects”. He was passionate about several insect orders, though Hymenoptera were his particular favorites. Léon Provancher travelled abroad, for example to Florida and The Antilles, where he collected many insects. Between 1877 and 1883, he published in three volumes his “*Petite faune entomologique du Canada*”⁴ which illustrates his huge passion for insects. Today, his collections, after restoration by Université Laval, are well preserved and remain a source of inspiration for entomologists. In addition, towards the end of his life, his interest in disseminating his knowledge led him to publish “*Une excursion aux climats tropicaux – voyage aux Îles-du-Vent*”⁵ (1890) and “*Les mollusques de la province de Québec*”⁶ (1891), the latter reflecting his attachment to nature.

Despite most of his life having been devoted to religious matters, Provancher always manifest a passion for the natural sciences that stimulated him to collect plants, insects, shells and fossils. That was still a time when there was little general interest in natural sciences. He built a library of several hundred scientific books and exchanged letters with numerous scientists around the world. A collection of 12,000 pages of notes and articles stands as a testament to his scientific reputation. In addition, he collaborated in writing religious articles for several journals. In 1925, one of his good friends and a fellow naturalist, Victor-Antoine Huard, published as a tribute a biography of more than 500 pages under the title of “*La vie et l’œuvre de l’abbé Provancher*”⁷.

Provancher has long been regarded as a model naturalist and populariser always willing to share his knowledge. The Historical Society of Cap-Rouge and the Provancher Society of Natural History continue to promote his legacy through different popular educational activities. Provancher’s reputation as a naturalist/entomologist is widely recognised. For example, the campus of the University of Québec in Trois-Rivières has its Léon-Provancher Building where the science departments are located. This self-made naturalist left an exceptional scientific legacy including, above all, stimulating others to become naturalists themselves, and especially to develop an interest in insects, these little creatures essential to the balance of ecosystems. He really set up the basics of entomology. His legacy and work must be considered an important part of Canada’s scientific heritage.

To learn more: since 2010, the organisation Entomofaune du Québec (<http://entomofaune.qc.ca/>) has produced “Les Cahiers Léon-Provancher” for which the first authors and historians on Provancher are Mélanie Desmeules and Jean-Marie Perron.

4 Free translation: “*Little entomological fauna from Canada*”

5 Free translation: “*An excursion under tropical climates – a travel to the Windward Islands*”

6 Free translation: “*The molluscs from the Province of Québec*”

7 Free translation: “*The life and legacy of the Abbot Provancher*”

Riding the Hudson Bay Railroad for insect biodiversity

Peter G. Kevan and Thomas S. Woodcock

The region around Churchill, Manitoba, has been quite intensively studied entomologically. Major studies were made while there was an active military presence at Fort Churchill, especially on the biology of biting flies (Twinn et al. 1948; Hocking et al. 1950; Freeman 1959). From a practical viewpoint, the biting flies (mosquitoes, black flies, horse flies, deer flies, etc.) were a concern for the health and comfort of military personnel engaged in the defence and development of Canada's north. After the Cold War abated, Fort Churchill was mostly dismantled. Some buildings remain, such as the "Polar Bear Jail" where nuisance bears are confined before relocation, and the excellent runway is still in use at Churchill's airport. More recently Roughley and Kevan mounted the Arctic & Boreal Entomology course, based at the Churchill Northern Studies Center (Underwood et al. 2003; Taki et al. 2005; Knopp et al. 2008; Woodcock et al. 2009), and Hebert and co-workers ventured on a comprehensive survey of the biodiversity of the Churchill region, funded by the NSERC program for the International Polar Year (IPY, 2007-8). That project is now yielding interesting results (e.g., Zhou et al. 2011; Kuzmina et al. 2012; Renaud et al. 2012a, b; Ruiter et al. 2013; Stalhut et al. 2013). One part of the studies initiated by Roughley and Kevan used the Hudson Bay Railroad (HBR) as a 300 km North-South transect for sampling insect diversity.

The HBR has a legacy for assisting biodiversity studies. One of the first such surveys was made in 1936 by H.E. McClure, a renowned American ornithologist and entomologist, who collected in numerous habitats in the vicinity of Churchill, and was provided with a private car by HBR (McClure 1943). Since then, various biologists interested in northern insects and their distributions have collected along the right-of-way of the HBR. In 2010 and 2011, the company once again came to the aid of biologists surveying the biodiversity of insects along its track from Gillam to Churchill. In 2010, we established a transect of sites from Churchill in the north south to Gillam along the HBR (Figure 1). Our support came from

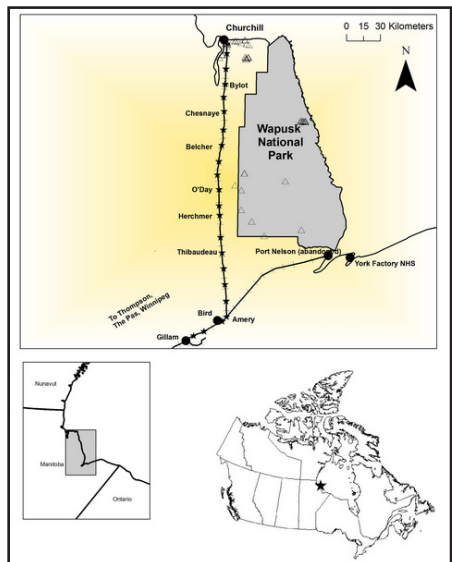
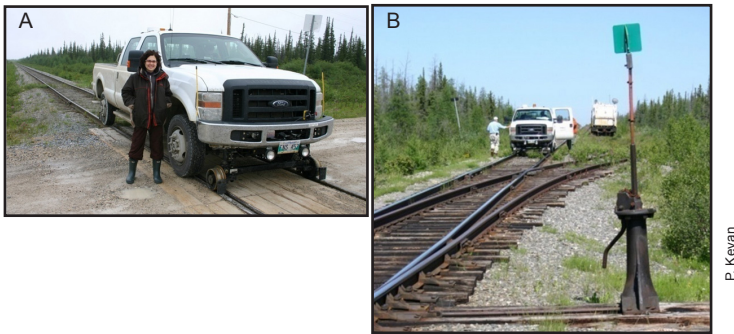


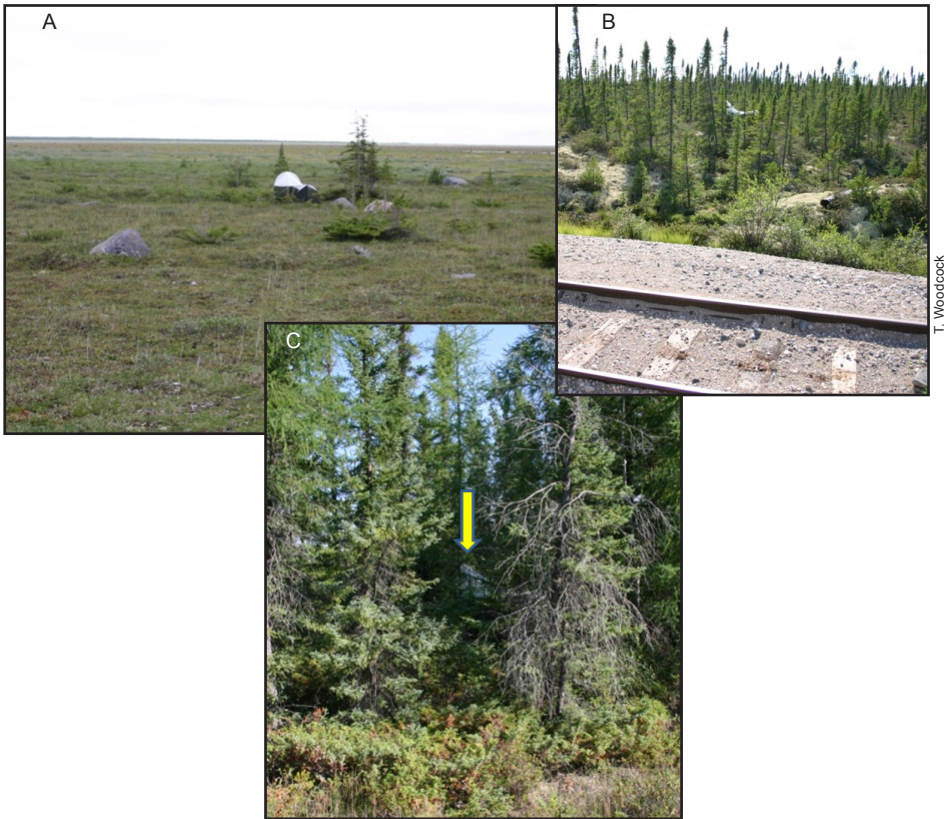
Figure 1. Map of the Churchill/Wapusk region and the Hudson Bay Railroad sampling transect. Black circles indicate settlements, stars indicate railroad whistle-stops (only sampled sites are labelled), and triangles indicate other insect survey sites.

Peter Kevan (pkevan@uoguelph.ca) is Professor Emeritus of Environmental Biology at the University of Guelph, and the Scientific Director of the Canadian Pollination Initiative (NSERC-CANPOLIN). His research priorities include ecology in general and pollination ecology in particular, and he has a career-long interest in the Canadian Arctic. Thomas Woodcock (twoodcoc@uoguelph.ca) is a research associate in the Ecosystems Working Group of NSERC-CANPOLIN, with a broad experience in ecosystem ecology and study of ecological services.



P. Kevan

Figure 2. A. Patricia Nunes, visiting student from Brazil, beside the road master's high-railer near Churchill, July 2010; B. The high-railer parked at Bylot, while traps were being deployed, July 2010.



T. Woodcock

Figure 3. A. Malaise trap on barren ground habitat at Chesnaye, July 2011; B. Malaise trap in the "transitional zone" at O'Day, where the forest is interspersed with lichen and peatland habitats, and the trees are smaller, July 2011; C. Malaise trap nearly invisible in the boreal forest at the Amery sampling station, July 2011.

OmniTrax Inc., current owners of the railroad, who made available to us a high-railer (Figure 2) (a pick-up truck or van on steel wheels) for as many as three return trips, although we made only two each year. The transect runs from Arctic tundra, across the rather diffuse tree-line and into the boreal forest (Figure 3).

More recently, concerns have grown to embrace issues of climate change and the slow creep of the northern boreal forest's tree-line into areas that have been, and are, Arctic in all respects except location south of the Arctic Circle. How is climate change influencing the ecological systems of boreal forest and adjacent tundra and peatlands along the Hudson Bay lowlands? How are those changes likely to influence people and development?

On the first trip, we established nine sites spaced about 30-35 km apart near existing whistle-stops, along the tracks. At each site we pitched a Malaise trap (Figure 3), and set out 10 pitfall traps and 10 pan traps (Figure 4). On the second trip each year, we harvested our catches and brought in the traps.

Malaise traps are designed to catch flying insects. The insects may or may not be attracted to the traps, but they do enter the tent-like structure and hit the wall on the mid-line. They then fly upwards, bumbling along that mesh wall until they reach the peak. There, they can "escape" through a hole, but alas for the insects, the hole leads them to their doom in a bottle of alcohol.

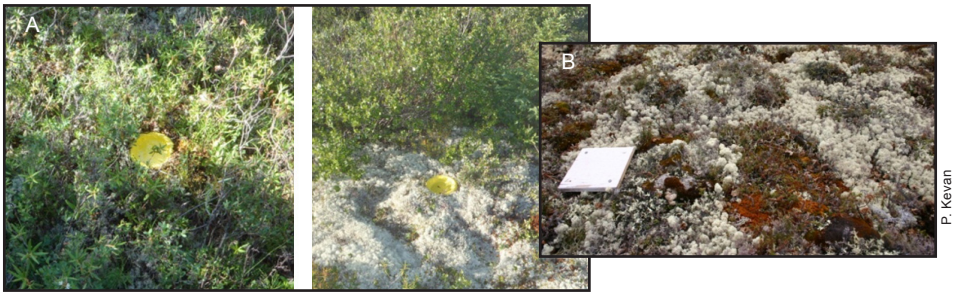


Figure 4A. Trackside yellow pan traps amongst Labrador tea (left) and with dwarf birch and reindeer moss (right), July 2010; **B.** Pitfall trap cover with four nails to lift it so insects can crawl under and into the trap beneath. July 2010.

In the alcohol they drown and are preserved for later study.

Pitfall traps are simply plastic tubs, such as are normally used for yogurt and margarine, set into the ground so their lips are flush with the ground's surface. The hapless crawling insects simply fall into the tub and drown in the centimetre or so of propylene glycol (as used for baking and as RV antifreeze) at the bottom where they are preserved for later collection. We do not use ethylene glycol (as in most automotive antifreezes) because it is poisonous to wildlife that may drink the sweet-tasting material. We also place a wooden lid over the trap to shelter it from rain and to act as a shadowy place that would attract insects that crawl on the ground surface. Pitfall traps collect ground beetles, spiders, and numerous other kinds of insects.

The pan traps are simply coloured plastic bowls usually used for eating breakfast cereal. They too are flooded to about a centimetre with propylene glycol, but no lid is placed over them. The idea is that the colour, especially bright yellow, attracts flying insects to land and so become caught and drowned in the liquid in the bowl. We used only yellow traps in our survey to collect flying insects such as bees, wasps, butterflies, and many kinds of flies. On the 2010 survey, we did not use other insect collecting methods, except for the classical "butterfly" net. In the future, we expect to diversify our sampling methods to include beating insects from the vegetation, extracting insects from the soil, and sampling from lakes, ponds, streams and rivers. Thanks to

our generous hosts on the trips in 2010 and 2011, we now know what we can accomplish and how much time it takes to set up, manage, and bring in the traps.

So, what did we find? From our whole survey, we collected and sorted tens of thousands of specimens that are expected to represent at least 1000 different species of insects and spiders. The daunting task of distributing to interested experts for identification remains for the majority of groups. Our inventory of bees is now approximately 20 species, and there are more than 85 syrphid species recorded. The work is coupled with the results from the biodiversity survey of Churchill conducted as part of Canada's contribution to the IPY through the Biodiversity Institute of Ontario and affiliated organizations such as the Wallis-Roughley Museum of Entomology at the University of Manitoba, and with biodiversity surveys and inventories of the animals and plants of Wapusk National Park conducted by Parks Canada. The railroad runs parallel to the Park's western border, sometimes less than 15 km away (Figure 1). Wapusk is one of the most important sites for conservation of polar bears, and occasionally bears can wander as far inland as the railroad during the summer months, but it is poorly known entomologically.

The insect diversity is changing in the Hudson Bay lowlands. The HBR itself, as well as the port of Churchill, are known to have allowed various plants and insects, mostly associated with grain shipments, to become established locally in the region. In addition to providing basic information on the insects of the region, such intensive entomological exploration of the region by so many scientists during and following the IPY efforts has yielded numerous pieces of biogeographical information worthy of further study in the fields of dispersal, invasive species, and changing faunae in the age of climate change. Two species of tiger beetles (*Cicindela longilabris* and *C. limbata*) unrecorded from previous surveys and not formerly known from northern Manitoba were found in regions of sandy glacial and relict beach deposits (Woodcock et al. 2010). In 2006 a very weather-beaten black witch moth (*Ascalapha odorata*) was collected at Churchill and is the most northerly record for this tropical insect. We have recorded and collected the elm sawfly (*Cimbex americana*) (which dines on willows in the Churchill and Wapusk region) on several occasions over several years from the region. Among the flower flies (Syrphidae), several specimens of *Eristalis brousii* were collected in the seacoast habitat east of Churchill when Jeff Skevington joined the team and seem to represent the remnant population of this once widely distributed and conspicuous insect (Skevington et al. 2008). In the southern area of Wapusk we found healthy populations of the conspicuous water strider of the genus *Aquarius*, which is absent from Churchill where two smaller species of *Gerris* are abundant (Hemiptera: Gerridae). We also note that the biogeographical patterns of conspicuous anthophilous Syrphidae (Diptera) and Apoidea (Hymenoptera) seem quite different. For the former, the fauna has rather far-ranging affinities, with most of the species also recorded in southern and eastern Canada. The taxonomic affinities of the bees, in contrast, are to the northern and western fauna. Kevan and Danks (1986) speculated that the circumpolar Arctic may be thought of as having a series of radial biogeographic barriers of large water bodies (including Hudson Bay) and mountain ranges. It also seems that the Churchill River can be a corridor for insects moving from the south and west, as exemplified by the collection of specimens of aquatic beetles such as *Optioservus fastiditus* (Elmidae), four boreal *Agabus* spp., *Nebrioporus macronychus*, and *Oreodytes davisii* (Dytiscidae) (Roughley, personal communication). The Nelson River may be acting the same way at the southern end of Wapusk National Park.

Acknowledgements

We are especially grateful to A. Bulwer, D. Sankiw, and E. Beardy of the HBR with whom we travelled as they inspected the rails. M. Ogborn and A. Simoes of OmniTrax helped arrange our contacts with HBR in Churchill. The Churchill Northern Studies Centre was our base, and we thank M. Goodyear for helping put us in touch with OmniTrax and HBR. Apart from the

generous in-kind support from HBR and OmniTrax, we acknowledge financial help from the Natural Sciences and Engineering Research Council of Canada through a Discovery Grant to Peter Kevan and through the Canadian Pollination Initiative (NSERC-CANPOLIN).

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11th International Congress of OrthopteroLOGY (Orthoptera in Scientific Progress and Human Culture)

Kunming, Yunnan, China, 11-15 August 2013

<http://ico.greatlocust.com/>

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>

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>

ECE X (Tenth European Congress of Entomology)

York, UK, 3-8 August 2014

www.ece2014.com

XXV International Congress of Entomology (Entomology without Borders)

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Gordon Pritchard died in Calgary, Alberta, after a long struggle with multiple myeloma, on 23 December 2012. He was 73 years old. Gordon was a premier Canadian entomologist and educator and an expert on many subjects from the biology of crane flies to evolutionary questions associated with the development of insects, especially aquatic ones. But his overwhelming entomological love was the study of the Odonata and he was a significant force in the international research organizations that focused on this insect order.

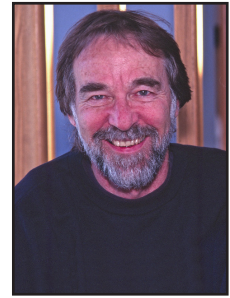
Gordon was born on 9 February 1939 in Burton-on-Trent, Staffordshire, a city of breweries in the English Midlands. His wartime childhood memories were of taking shelter under the family's grand piano during air-raids and seeing his father, a quartermaster sergeant with the RAF, off at the bus stop after his leaves at home.

Gordon was fascinated by the countryside around the village of Bretby, where he spent his early years. There, he played in the cowsheds and fields at the farm of a family friend, visited a bird-egg-collecting naturalist who lived down the lane, and made frequent trips by bus or foot to the Derbyshire Dales. When Gordon was 9 or 10, without a net, he captured his first dragonfly, a brown hawkler (*Aeshna grandis*) – the trick, he said, was to throw your jacket over whatever interested you. He played conkers under the chestnut trees and was awed by fields of English bluebells. Another life-long love, jazz, also evolved during those early years and Gordon began to play the drums. He made his first set from old banjo vellums and biscuit tins but, later, a thoughtful neighbour took pity on him and presented him with his first real drum set.

Gordon had been inspired by his biology teacher at grammar school and wanted to be a biology teacher himself. But, instead, in 1957 he enrolled in Imperial College, University of London, a place he later would consider the best entomology department in the world. However, all his classes couldn't have been that inspiring, because he spent much of his time immersed in jazz, rugby, drumming, and beer drinking. He received his BSc (Honours) in zoology in 1960 and, after winning a Commonwealth Scholarship that year, he came to the University of Alberta where jazz concerts, rugby, drumming and beer drinking again rounded out his academic life. In those days the Entomology Department was small, with three faculty – Brian Hocking (chairman), George Evans (ecologist and Gordon's supervisor) and George Ball (systematist) – and only eight graduate students. But the place hummed with excitement and new ideas. It was a wonderful life for a young graduate student (Acorn 2004). Gordon's doctoral research focused on the life of larval dragonflies in the boreal forests of Alberta, especially how they capture their prey with their extendible labium. His work extended into several areas: prey organisms, the functioning of the labium, and the morphology of the labium and compound eyes. Gordon finished the field work in only one season, a sign of his efficiency and concentration. He was awarded his PhD in entomology in 1963. On 2 February that year, Gordon married June Dalby in Edmonton.

After graduating, Gordon's first job was as a research scientist with CSIRO (Commonwealth Scientific and Industrial Research Organization) in Sydney, Australia, where he studied fruit flies. Gordon's and June's daughter, Tracy, was born there in 1964. Although Gordon loved Australia and was offered a permanent research position, after 3 years, the family decided to move back to Canada.

Back at the University of Alberta, in 1966, Gordon filled in for George Evans while George was on sabbatical, and the next year took up a 1-year teaching appointment in insect physiology at the Calgary campus of the University of Alberta. The job was offered to him by Jim Cragg,



J. Acorn

Gordon Pritchard
1939-2012

Head of the Department of Biology, who had been Gordon's external examiner at Imperial College. In 1968 Gordon's son Darren was born, and a permanent position somewhere became a priority. Luckily, one appeared in Calgary and Gordon stayed put. His appointment was initially divided between the Calgary campus and the Kananaskis Field Station in the nearby Rocky Mountains; the latter spot offered much scope for field studies and Gordon began researching the population ecology and development of local crane flies (Tipulidae), which engrossed him for the next decade (Acorn 2004).

Thus began a long career of solid, meticulous research. Gordon's interests were primarily in the evolutionary ecology of insects, from the evolution of individual traits, through the evolution of life-history strategies, to the evolution of communities. He worked mainly on insects with aquatic larvae and was particularly interested in the proportional allocation of time to the aquatic and terrestrial habitats and the mechanisms that determine when the transition from one to the other is made. Much research focused on the effects of temperature on insect development. Specifically, he studied temperature adaptations in aquatic insects, insects in geothermal habitats, the colonization of temperate-zone latitudes by tropical taxa, and the relative allocation of time to different life-cycle stages. He was interested in predatory behaviour in arthropods; respiratory structures and mechanisms in aquatic insects; and the colonization of aquatic and terrestrial habitats, with particular reference to the evolution of aquatic life-styles and of flight in insects. Gordon delved into the evolutionary origin of insects and the phylogeny of arthropods, especially examining larval traits. Although he certainly did not consider himself a systematist, he did publish in this field. One his last graduate students, Jack Zloty, named a newly discovered mayfly, *Ameletus pritchardi*, after Gordon (Zloty 1996), a fitting tribute to a career of superb aquatic insect research.

By the late 1970s, Gordon returned to studying Odonata, being intrigued by the vivid dancers (*Argia vivida*), southern damselflies living in the warm pools at Banff. With various graduate students, he studied these damselflies all over western North America, concentrating on life history, reproductive behaviour, egg development, larval growth and the effects of temperature on physiological processes. In the late 1980s, as John Acorn (2004) described, "...when [Gordon's] work was taking him pretty far south, he realized it was time to go to the tropics, 'where dragonflies really come from'... One of Gordon's most frequently cited conclusions with respect to odonates is that they retain their tropical temperature responses and are thus 'prisoners of their tropical past'." In Costa Rica he studied damselflies in the genera *Cora* and *Hetaerina*. Some of his dragonfly work was broadly theoretical, such as his investigations into odonate mating systems and sexual selection.

But dragonflies were far from all that Gordon studied. He examined life histories and feeding in alderflies, morphology of stridulation in predaceous diving beetles, peritrophic matrices in ground beetles, and development and survival in mosquitoes. Stoneflies in Rocky Mountain streams were a favourite subject - sampling techniques, life histories, and growth and development. Caddisflies and mayflies did not escape his interest and neither did water mites. Having good-sized populations of the iconic Canadian insect, *Grylloblatta campodeiformis*, nearby in the Rockies made the study of this fascinating subterranean species relatively straightforward. Gordon probably showed dozens of entomologists their first specimens of the Order Grylloblattodea during his frequent forays into the Kananaskis Valley.

One of Gordon's last and most intriguing entomological adventures was the discovery of a new family of flies (Diptera), the Oreoleptidae. Strange larvae unassigned to any known family had been found several times in torrential streams in the western mountains. But it wasn't until Jack Zloty and Gordon collected and reared larvae and pupae to adults that it was confirmed to be a distinctive, undescribed species in a new genus and family. Brad Sinclair, an expert on the

phylogeny of flies, collaborated with them on the project and demonstrated that the fly had unique characteristics closely related to the Tabanidae (horse flies) and Athericidae (water snipe flies). How many entomologists these days are lucky enough to find and name a new family of insects?

By the early 1990s, Gordon's life was changing. He and June had divorced and he married Valerie Preuter (néé Jones) on 4 August 1991. They made a terrific and inseparable team – generous, happy, full of fun. They welcomed many visitors to their Calgary home and travelled to all corners of the world.

From 1967 to 1999 Gordon was an energetic and involved teacher, researcher and administrator at the University of Calgary. By 1976 he was made Full Professor and from 1976 to 1978 he served as an Assistant Dean of Science. In 1997 the University offered early retirement to their senior faculty – the deal was so good that many, including Gordon, couldn't refuse. The administration then discovered that there was no one to teach the senior courses, and so seasonal appointments were given to those interested. Gordon continued to teach during the next 2 years. In his retirement he was named Professor Emeritus.

Gordon's university teaching dealt primarily with evolution, ecology and entomology, and ranged from 400-student introductory classes to small graduate student tutorials. He taught in the lecture theatre, the laboratory and the field. For many years, Gordon led Educational Travel Study Programs on behalf of the University of Calgary's Faculty of Continuing Education to Costa Rica, the Galápagos Islands, and to East Africa.

Gordon supervised 19 MSc and PhD students, served on over 100 graduate student thesis committees, and published 84 peer-reviewed papers. He made his first trip to the Galápagos Islands in 1983; this led to what he called a "serious interest" in Charles Darwin. In 1986 Gordon established the Annual Darwin Lecture and Dinner, on a date in February close to Darwin's birthday. This was a social and intellectual gathering for the faculty and students of the Ecology Division and included the dreaded Darwin quiz. Gordon's Darwinian knowledge was staggering and he used it well – in his teaching, research and entertainment. The event continues still - a wonderful legacy of Gordon's passion for science.

David Larson, a water beetle expert and an early doctoral student of Gordon's, credits Gordon's clarity and patience in his successful teaching of difficult ideas and methodologies. He remembers Gordon as "reflective and philosophical, exhorting students to understand the basics... a counselor, a person I could bring ideas to and have them seriously considered, debated and evaluated."

Larson also recalls that "Gordon could be highly focused and immersed in his studies. A feature of American universities is for faculty to keep their office door open and appear inviting. Gordon didn't - his door was shut and knocks went unanswered unless they were very persistent - then you would hear a muffled 'There is nobody here' and, if you didn't believe that and still knocked, there would be an eventual 'Go away!' He had time and patience for meetings but they had to be scheduled and done right." This concentration, Larson notes, can be seen in Gordon's research: "Both his morphological and experimental work is meticulous... His ecological studies are exemplary for their clear focus. He had the background of a naturalist and could see what was real and important in nature, and had the skill and care to design his studies to get to the point."

Retirement allowed Gordon to indulge his love of music. Although he had played the drums since he was a boy, he had no formal training. He loved to jam with a small group, where reading music was not required, and several nights a week were devoted to this. But when the opportunity to play with a Big Band surfaced, Gordon knew that he would have to learn to read scores - and so began the drum lessons that lasted the rest of his life. Saturday mornings were devoted to band practice and gigs took the band from seniors homes to golf and country clubs. Gordon had an encyclopedic knowledge of the jazz artists of the past and present. Hearing a piece of music, he could tell you who was playing what instrument and, most times, when and

where the recording had been made.

Gordon began a lot of new things late in his life. He learned to downhill ski for his 50th birthday; he took scuba diving lessons in 1997 so he could join his children underwater on the Great Barrier Reef. In 2001 he started snowshoeing to prepare for a trek to Everest Base Camp.

Travel was integral to Gordon's being. He and Valerie travelled to all the continents - trains in Russia, Mongolia, China and Australia; ships of various shapes and sizes to the Caribbean, the Mediterranean, and Antarctica; tour buses and 4x4s in Africa; and walking in England to the places Gordon remembered as a child.

Dragonflies took Gordon to many wonderful places, from the hot springs of Canada and the USA, to tropical streams in Costa Rica and Colombian Amazonia; from conferences above the Arctic Circle in Sweden to the deserts of Namibia. For most of his career, Gordon worked tirelessly in the societies that promoted and coordinated international dragonfly research and published odonatological journals. Among much other work he organized the Seventh International Symposium of Odonatology in Calgary in 1983 (Societas Internationalis Odonatologica) and, in the Worldwide Dragonfly Association, served as a Trustee, a Coordinator of International Symposia of Odonatology, and as President from 2007 to 2009.

Gordon's cancer surfaced in 2003 with a diagnosis of multiple myeloma, treatable but not curable. In February, 2012, he wrote: "The cancer diagnosis really changed my outlook. No longer did I dwell on the past, nor did I think too much about the future. I felt really good every morning when I got up and took every day as it came, filling the day with things I wanted to do. If I didn't get everything done that I thought I might, there was always tomorrow, which would also be a great day."

Gordon was a dear friend. Although I didn't see him often, he was always there, an inspiration in the background. When I did see him, there was always something to learn. I met Gordon through our shared love of dragonflies in the late 1970s. We worked together on the organization of the 1983 International Odonatological Symposium and sat through many odonatological society meetings, some of which were surprisingly testy and turbulent (I was always impressed by Gordon's calm wisdom and negotiating skills). We collected grylloblattids in the Kanana-skis Valley and watched damselflies and dragonflies along the shores of dozens of streams and ponds. We reveled in smoky Parisian nightclubs and talked into the night around campfires in the Namibian wilderness. We drank scotch and listened to jazz in the basement of his Calgary home. He was a wonderful man.

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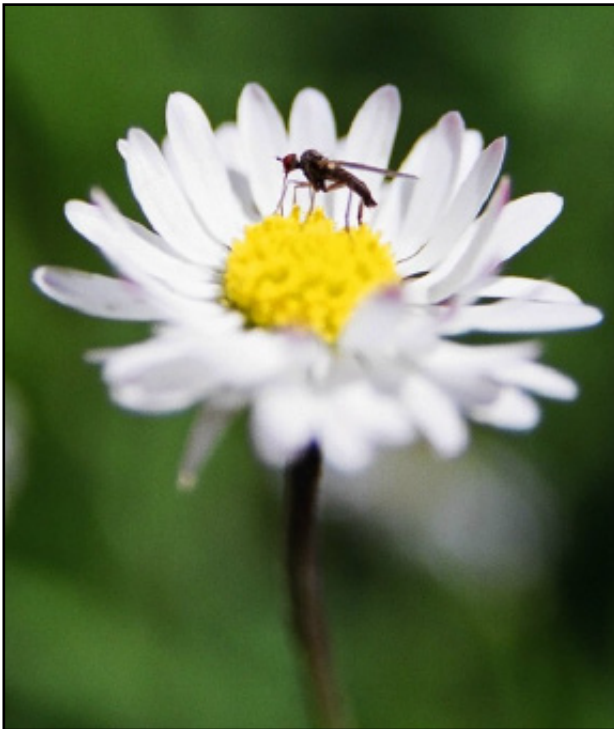
Rob Cannings, Royal BC Museum, Victoria. With help from John Acorn, David Larson, Rob Longair, Jack Zloty and, especially, Valerie Pritchard. John Acorn's (2004) book, cited above, contains an excellent summary of Gordon's career and influence.

Richard C. B. Hartland-Rowe

19 June 1927 – 19 August 2012

Born in Bristol, U.K., Richard Hartland-Rowe was educated at Exeter University College (University of London BSc [Hons] 1952) before moving to Uganda (University College of East Africa, now Makerere University). He received his PhD from the University of London in 1957 and in 1958 was the first zoologist appointed by the fledgling University of Calgary. He remained here for 20 years, which included a term as Head of the Department of Biology, 1963-1969 (and in 1984 was named Professor Emeritus). He was an early environmentalist and while in Calgary studied the impact of pollution on insect and other animal life, including work commissioned by the Government of Alberta in relation to the Rainbow Pipeline and Tar Sands oil production. In 1979 he returned to Africa, initially working for the Canadian International Development Agency in Botswana, later becoming Dean of Science at the University of Botswana in Gaborone.

A full obituary for Hartland-Rowe can be found in *Antenna (Bulletin of the Royal Entomological Society)* **36**: 258 (2012).



A. Leroux

Empididae on flower

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

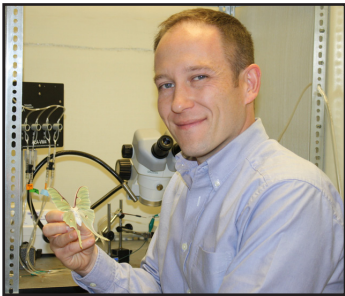
The following have been nominated and agreed to stand for election in 2013 for the indicated positions. Members will receive more details by email or in the mail. Voting will be conducted electronically but paper ballots will still be mailed to members who do not have email addresses. Electronic votes must be submitted or ballots mailed to the Elections Committee by **15 July 2013**, so **PLEASE VOTE!**

Les personnes suivantes ont été nommées et ont accepté de participer aux élections de 2013 pour les positions indiquées. Les membres recevront plus de détails par courriel ou par courrier. Le vote se tiendra électroniquement, mais des bulletins de vote sur papier seront quand même envoyés par courrier aux membres qui ne possèdent pas d'adresses électroniques. Les votes doivent être soumis électroniquement, ou les bulletins de vote envoyés au Comité des élections avant le **15 juillet 2013**, alors S.V.P., VOTEZ !



Candidates for Second Vice-president: Terry Wheeler (McGill University) (left) and Jenny Cory (Simon Fraser University) (right).

Candidats pour le poste de Second Vice-président : Terry Wheeler (McGill University) (gauche) et Jenny Cory (Simon Fraser University) (droite).



Candidates for Director-at-Large: Kirk Hillier (Acadia University) (left), and Robert McGregor (Douglas College) (right).

Candidats pour le poste de conseiller: Kirk Hillier (Acadia University) (gauche), et Robert McGregor (Douglas College) (droite).

ESC Scholarship Fund

Once again the Society would like to thank and acknowledge the very generous donors to the ESC Scholarship Fund. These tax-deductible donations are very important to the Society, as it is only because of these donations that the scholarship fund is self-sustainable. Donations can be made at any time and a receipt for income tax purposes in Canada will be issued. Please make cheques payable to the Entomological Society of Canada.

Le Fonds de bourses d'études de la SEC

La Société tient à remercier, une fois de plus, les très généreux donateurs et donatrices au Fonds de bourses d'études de la SEC. Ces dons déductibles d'impôt sont très importants pour la Société, puisque c'est seulement grâce à ces dons que le Fonds de bourses d'études est autosuffisant. Les dons peuvent être faits en tout temps, et un reçu pour fin d'impôt vous sera envoyé. Veuillez libeller votre chèque au nom de la Société d'entomologie du Canada.

2012 Donors – Donateurs et donatrices pour 2012

John Arnason
Robert P. Bodnaryk
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Bernie Roitberg
David M. Rosenberg
Kathleen Ryan
J.D. Shorthouse
A.B. Stevenson
Art Stock
Jon Sweeney
Richard Westwood
David L. Wood
Peter W. Wood

and those who preferred to remain anonymous.

... et ceux et celles qui ont préféré rester anonyme.

Highlights from the Executive Council Meeting, 13 February 2013.

Alec McClay, Secretary

Canada Non-Profit Corporations Act transition

The Canadian Federal Government has introduced new legislation (the Canada Not-for-profit Corporations Act) governing federal not-for-profit corporations such as the Entomological Society of Canada. This Act replaces the Canada Corporations Act under which the ESC was incorporated. All federal not-for-profit corporations must transition to the new act by October 2014, or they will cease to exist as legal entities. The new Act has implications for regional representation on the ESC Board, and for the method of appointing officers. An ad hoc committee has been struck to develop the draft Articles of Continuance and By-Laws required for transition to the new Act.

International Congress of Entomology 2016

The Executive approved a proposal for ESC to meet jointly with the International Congress of Entomology in Orlando in September 2016. The Annual Meeting Committee recommends that the ESC Governing Board Meeting be held on September 23 and the opening ceremonies, awards presentations, Gold Medal Address, Heritage Lecture, Annual General Meeting and incoming Governing Board meeting on September 24, before the start of the ICE. All scientific sessions and student activities would be merged into the ICE and not held as separate ESC sessions.

Certification for industry

The Entomological Society of America will partner with the Canadian Pest Management Association to deliver the Associate Certified Entomologist Program for Canada, but the door is still open to for some involvement on the part of ESC, such as identifying subject matter experts in Canada or consulting on Canadian content in the syllabus.

Treasurer

The Society is in good financial standing. We are now getting ready for the audit of financials for the year 2012. The audit will take place on March 14th. The Governing Board will be required to review and approve the 2012 financial statements before the audit can be finalized. This will be done by email ballot sometime in April. CUP was late in paying the first installment of guaranteed revenue for the 2013 volume of *TCE*. This payment was supposed to come in before 31 December 2012. CUP made several unsuccessful attempts to transfer the money before it was finally received at the end of January, in the amount of \$26,799. Had it not been for an investment that matured in mid-December, the ESC would have faced a serious cash-flow problem at the beginning of 2013 due to the delay in payment by CUP.

Headquarters Building

Repairs to the roof and steps of the HQ building were completed in autumn 2012. The Executive approved funding to replace the front door and hot water tank.

The Canadian Entomologist

Volume 145(1) of *TCE* is out, the special Arctic issue, 145(2), is ready to appear in March, and Volume 145(4) is now being filled. There is interest in submitting proposals for review articles, and a procedure for proposing these is almost finalized. We are awaiting a proposal from Cambridge University Press on an author-paid open access option, and also plan to discuss a moving window option under which papers would become open-access a certain time after publication. Subscriptions went from 210 in 2011 to 237 in 2012. For the current year they are already at

95, and we expect to surpass the 2012 numbers. A pilot project is under way with three authors to develop plain language summaries for papers in addition to the standard abstract. CUP are working on a process to notify members by email when new issues of *TCE* appear.

TCE Access for Emeritus Members

A two-tier emeritus membership structure was approved: Emeritus+, dues \$60 for online access to *TCE* and Archives (+ \$10 for hard copy), and Emeritus standard, dues \$0 with no access to *TCE* or Archives.

Printed Copies of the *Bulletin*

It was found not feasible to print hard copies of the *Bulletin* in house and the March issue will be printed by Allegra Printing. A final decision on whether to continue printing hard copies remains to be made.

Webmaster

The position of Webmaster has been advertised.

Publications Committee

The Committee is assessing the possibility of setting up an award for the best paper published in *TCE* or the *Canadian Journal of Arthropod Identification* each year, and the feasibility or desirability of reviving the *Memoirs of the Entomological Society of Canada*.

Hewitt Award

The Achievement Awards Committee is considering proposals to raise the maximum age of eligibility for the C. Gordon Hewitt Award.

Science Policy and Education

There has been some discussion of the process for potentially naming a National Insect for Canada. The Chair is working on a letter regarding Federal Government travel restrictions.

Student Affairs

The Student Affairs Committee (SAC) has drafted a proposal for a new session, the Graduate Student Showcase, to replace the Graduate Student Symposium. They also proposed that there be a membership category and associated JAM rate for 'early career' researchers, similar to the one offered by the Entomological Society of America, and available not only to post-doctoral researchers, but other recent graduates, in order to provide a transitional category from student to regular member. They also propose an International Student Affairs Committee for the International Congress of Entomology 2016. These proposals are under consideration by the Executive. Members of the Committee have made substantial progress on a new Directory of Entomology in Canada.

Update on JAM 2013

Fundraising is going well. The program will run all day on Wednesday. Eleven symposia are being planned, two of which will be full-day sessions and one of which, on emerald ash borer, will have an associated meeting on the Thursday. A full day photography workshop with separate registration will be held on Saturday. Three lunches will be included in the registration. Early bird registration for regular members is expected to be \$400 and \$200 for students.

Biological Survey of Canada

The Executive approved a request by the Biological Survey of Canada for office support to manage a second bank account for funds formerly held by the Biological Survey Foundation, for use to support publication efforts by the BSC.

Affiliated Societies

An official letter of invitation was received from the Société d'Entomologie du Québec to hold the Joint Annual Meeting in Québec in 2015 at a date and location to be determined. The Board of the Entomological Society of British Columbia has voted in support of meeting jointly with the ESC and the Entomological Society of America in Vancouver in 2018.

Website Issues

M. Cusson will work with the Office Manager and S. Novotny to resolve some issues related to passwords, membership renewals, and access issues on the ESC website.

International Entomophagous Insects Conference

The Executive approved sponsorship of a student award at the International Entomophagous Insects Conference to be held in Orford, Québec, in June 2013.



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@carleton.ca); phone (613) 520-2600 ext 3872) or the *Bulletin* Editor, Cedric Gillott (cedric.gillott@usask.ca; phone (306) 966-4401).

ESC Members: It's official now!

We are pleased to announce that we will be co-locating our 2016 annual meeting with the International Congress of Entomology (ICE) hosted by the Entomological Society of America (ESA) in Orlando, Florida (see <http://ice2016orlando.org/>)! The ESC Governing Board has voted to accept the ESA's invitation to join them and other national entomological societies at the ICE 2016 venue.

We also are pleased to introduce Murray Isman (UBC) as our appointed representative to the ICE Organizing Committee. Murray is already poised to collaborate with the ESA in ensuring a smooth merger of meetings. Of the options presented to us by the ESA in their invitation, we have opted for a separate, pre-ICE conduct of our Society's business, and then full access to what will be a diverse and rich ICE scientific program under the theme of *Entomology without Borders*.

So, mark your calendars for 23-30 September 2016 and look forward to more announcements as we move closer to the big event.

Your ESC Executive

Membres de la SEC: c'est maintenant officiel!

Nous sommes heureux d'annoncer que nous tiendrons notre réunion annuelle 2016 sur le site du International Congress of Entomology (ICE) accueillit par la Société d'entomologie d'Amérique (ESA) à Orlando en Floride (voir <http://ice2016orlando.org/>)! Le conseil d'administration de la SEC a voté pour accepter l'invitation de l'ESA à nous joindre à eux et à d'autres sociétés entomologiques nationales sur le site de l'ICE 2016.

Nous sommes également heureux de présenter Murray Isman (UBC) comme notre représentant nommé sur le comité organisateur de l'ICE. Murray est déjà prêt à collaborer avec l'ESA afin d'assurer une fusion harmonieuse des réunions. Parmi les options présentées par l'ESA dans leur invitation, nous avons opté pour une réunion séparée, pré-ICE, pour les affaires de notre Société, suivie d'un accès complet à ce qui devrait être un programme scientifique riche et diversifié à l'ICE, sous le thème de *Entomology without Borders*¹.

Alors réservez les dates du 23 au 30 septembre 2016 à vos agendas, et nous avons hâte de vous communiquer d'autres annonces alors que nous approcherons du grand événement.

Votre conseil exécutif de la SEC

¹*Entomologie sans frontières*



Biological Survey of Canada Newsletter

The Biological Survey of Canada Newsletter (Winter 2012 edition) is now available for download at http://www.biology.ualberta.ca/bsc/news31_2/bscwinter2012.pdf.

This issue has several articles of interest to entomologists. Dave Langor talks about the new BSC initiative “The Biota of Canada: A Census of Canadian Species”; in an Opinion Piece, Steve Marshall revisits the topic “The Real Costs of Insect Identification”; and in the Insect Collections of Canada Series, Terry Galloway and Barb Sharanowski review the J.B. Wallis/R.E. Roughley Museum of Entomology at the University of Manitoba.

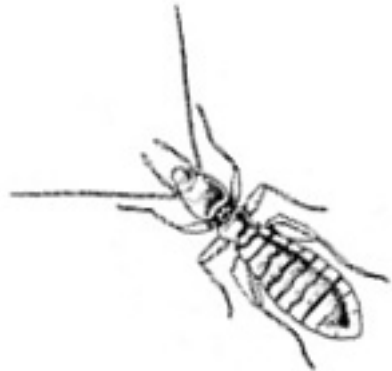
Online applied entomology course from the University of Manitoba

In September 2013, the University of Manitoba will begin offering a new online distance education course entitled Introduction to Applied Entomology (ENTM 3190).

The online course has been developed to increase the accessibility of fundamental entomological education to students at institutions across Canada that offer few or no entomology courses.

The course begins with an introduction to insect biology and ecology and then explores the field of applied entomology including insect pest management, insect biodiversity and services provided by insects. Concurrent online labs focus on basic insect identification and the major groups of insect pests in Canada. The course has been developed to serve as either a student's first entomology course, or as a second course for students who have previously taken an introductory entomology course, and are looking to expand their entomological knowledge.

For more information, please contact the instructor: Jordan Bannerman MPM ([204] 480 1021; jordan.bannerman@ad.umanitoba.ca) or see <http://umanitoba.ca/afs/entomology/>.



Ninth Annual Photo Contest

The Ninth Annual Photo Contest to select images for the 2014 covers of *The Canadian Entomologist* and the *Bulletin of the Entomological Society of Canada* is underway. The cover images are intended to represent the breadth of entomology covered by the Society's publications. Insects and non-insects in forestry, urban or agriculture; landscapes, field, laboratory or close-ups; or activities associated with physiology, behaviour, taxonomy or IPM are all desirable. A couple of 'Featured Insects' (for the spine and under the title) are also needed. If selected, your photo will grace the cover of both publications for the entire year. In addition, winning photos and a selection of all submitted photos will be shown on the ESC website.

Contest rules:

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

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

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

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

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

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

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

Submission deadline is **31 July 2013**. Entries should be submitted as an attachment to an email message; the subject line should start with "ESC Photo Contest Submission". Send the email message to: photocontest@esc-sec.ca

Neuvième concours annuel de photographie

Le neuvième concours annuel de photographie visant à sélectionner des images pour les couvertures de *The Canadian Entomologist* et du Bulletin de la Société d'entomologie du Canada pour 2014 est en cours. Les images sur la couverture doivent représenter l'étendue entomologique couverte par les publications de la Société. Des photos représentant des insectes ou autres arthropodes forestiers, urbains ou agricoles, des paysages, du travail de terrain ou de laboratoire, des gros plans, ainsi que montrant des activités associées à la physiologie, au comportement, à la taxonomie ou à la lutte intégrées seraient souhaitées. Deux « insectes vedettes » (pour le dos et sous le titre) sont également recherchés. Si elle est sélectionnée, votre photo ornera la couverture des deux publications pour l'année entière. De plus, vos photos gagnantes et une sélection de photos soumises seront montrées sur le site Internet de la SEC.

Règlements du concours :

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

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

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

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

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

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

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

La date limite de soumission est le 31 juillet 2013. Les soumissions doivent être faites en pièces jointes d'un courrier électronique. L'objet du message doit débiter par « Soumission pour le concours de photographie de la SEC ». Envoyez vos courriels à : photocontest@esc-sec.ca

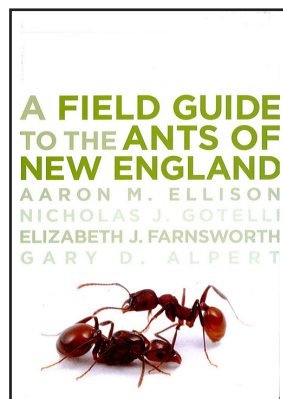
A Field Guide to the Ants of New England. Ellison, A.M., Gotell, N.J., Farnsworth, E.J., & Alpert, G.D. 2012. Yale University Press, USA. 398 pp. ISBN 978-0-300-16930-0, US\$29.95, Paperback: Flexibound.

The availability of keys and species lists, as with many taxa, often limits what entomologists and ecologists are able to study. The last publication providing keys to the ant species of North America was published in 1950 by Creighton. When asked recently to assist someone working on ant identifications in British Columbia, I was forced to send along several different documents (some unpublished), recommend books long out of print (with one hardcover currently selling at \$1,625 on the Advanced Book Exchange), as well as provide a list of warnings about where some of the documents have gone astray or where taxonomic revisions were no longer up-to-date. Given this lack of cohesive literature, comprehensive publications are a vital and welcome addition to North American myrmecology, even if they are regional.

While the public is intrigued intellectually by ants, especially by the plethora of seemingly bizarre behavioural specializations arising from ant social behaviour, their ability to engage practically by recognizing species is almost non-existent. The authors attempt to address this in their book by considering amateur naturalists as well as the professional myrmecologist. Thus, while specialist keys to the species comprise the bulk of the guide (Chapter 5), a rough key to the genera is included on the inside cover. This key is intended for non-specialists with a 10x hand lens, although some noted characters (e.g., antennal characters, tooth number on mandibles, distinguishing a lightly sculptured body from a heavily sculptured body) may still be a challenge, especially if used with a live wriggling ant pinched between finger and thumb in the field. Still, it is a start for a taxon where knowledge is limited almost exclusively to professionals.

The broad targeting of readers is also evident through the introductory chapters. Chapter 1 is an excellent introduction to New England, reviewing the post-glacial soil and vegetative changes as well as changes in post-colonial forest cover. It provides both specialist and amateur with a good understanding of the varied biogeoclimatic regions of the area, areas likely to have distinct ant faunas. Chapters 2 and 3 are mostly directed to the amateur. Chapter 2 reviews basic ant life cycles, ecology, evolution, and social behaviour. It explores a few of the interesting consequences of social behaviour such as social parasitism, myrmecophily and mimicry. This chapter could be recommended to anyone interested in exploring the world of ants, regardless of locale, but is complete enough to include the occasional piece of information that might lead more experienced myrmecologists to wish there were in-text citations. Chapter 3 provides the basics on drawing and photographing ants as well as capturing them and developing a labelled collection. I was very happy to see mention of the importance of minimizing a person's sampling footprint by returning rocks to their initial state and filling in any holes created. Personally, if there was only a way to return woody debris back to its original condition, I would feel much better about the sampling impact I have had on many landscapes.

Chapter 4 begins the shift away from the hand lens and into the more specialized anatomy necessary for species identification. It is nicely coupled with overall anatomical diagrams that are placed on the inside back cover. Those new to myrmecology will find this very useful, as



being able to thumb open the back cover to quickly connect a name to its structure will save a great deal of time. The chapter concludes with a review of how the main keys are structured.

Chapter 5 comprises the majority of the field guide and consists of a set of keys to the 31 genera and 132 species of ants in New England. While this begins as a standard key to sub-families and genera, based on workers, the extensive database developed by the authors quickly becomes apparent. First, this initial key is followed by a key to the sub-families and genera based on males. While there has been an increasing recognition of the utility of males in identifications within myrmecology in recent years, this is the first broadly based key I have seen in publication. This is an approach I hope continues. Second, the line drawings associated with the dichotomous keys are excellent. Third, embedded with the dichotomous keys are matrix keys that align the primary distinctive anatomical features of a series of related ants, allowing for quick comparisons. I could only complain that these could be larger. Fourth, following the key to species within each genus, is a well laid out species description page that includes photographs, drawings, county level presence/absence data and natural history notes. This is the type of information seldom provided in peer-reviewed literature but invaluable for those initiating myrmecological research. Fifth, a line bar is included in the top right hand corner of each page sized to the average length of the ant. Finally, where common names are not official, the authors provide one based on the Latin or Greek root of the binomial. One that caught my eye was, The Euphonionus *Pyramica* ant (*Pyramica metazytes*), a name whose origin could only be explained by its authority, Barry Bolton, who noted that the species name was chosen only for its pleasant sound and otherwise means nothing.

As a final contribution, the authors conclude with an analysis of the 28,205 ant species records in New England. While such an analysis is common in the literature when discrete ant faunas are described, it is unusual to apply this analysis at a regional level. It includes a species accumulation curve that estimates the number of ant species in New England should be approximately 153 as compared to the 132 species currently recorded. Further, they aggregate all sample data by county and note the most undersampled areas of New England, helping focus new sampling to improve the species records.

At CDN\$19.75 on Amazon, *A Field Guide to the Ants of New England*, is an important contribution to the North American myrmecological literature. The authors, Aaron Ellison (Harvard), Nicholas Gotelli (University of Vermont), Elizabeth Farnsworth (New England Wildflower Society) and Gary Alpert (Harvard), have laid a standard that would be worthwhile to replicate throughout North America.

Robert J. Higgins
Thompson Rivers University
Williams Lake, British Columbia

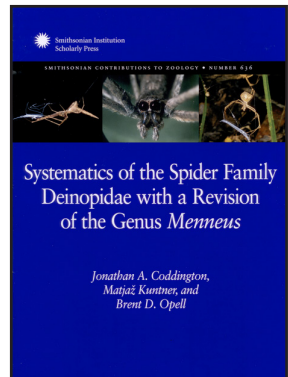
Systematics of the Spider Family Deinopidae with a Revision of the Genus Menneus. Coddington, J.A., Kuntner, M., and Opell, B.D. 2012. Smithsonian Contributions to Zoology **636**: 1-61. DOI: 10.5479/si.00810282.636.1. FREE!

Systematics of the Spider Family Deinopidae... is the latest in a long series of Coddington et al. publications focused on orbicularians – those spiders (including deinopids and nearly a quarter of all other described spider species) that construct and use orb-webs or their sheet- and cob-web derivatives to capture their prey. Pantropical, Deinopidae C.L. Koch is perhaps the most interesting of all spider families – in spite of extreme rarity (only about 300 adults are known) and low diversity (two extant genera and fewer than 60 species), its members have long attracted attention because of their unique and wonderfully bizarre morphologies, webs, behaviours, and ocular physiology. *Menneus* contains about one third of probable deinopid diversity, a suite of species restricted to Australasia and southern Africa.

Jonathan Coddington has been a leading light of arachnology for several decades. One of the descendants of the Museum of Comparative Zoology systematics program, he is well-known for his prominent and strongly collaborative role in transforming spider taxonomy and systematics and related disciplines from the “more-art-than-science” approaches of the mid-20th century to ones based on rational foundational concepts of monophyly, homology, experimental design, testable hypotheses, and statistical significance – but all the while retaining the best aspects of the “more-art” era. The result of long collaboration between Coddington, fellow Museum of Comparative Zoology time traveller Brent Opell, and recent-generation orbicularoid researcher Matjaž Kuntner, *Systematics of the Spider Family Deinopidae...* presents the first serious test of deinopid monophyly, a family-level phylogeny, and a world revision of the species of *Menneus*. It is simultaneously a useful and readable scientific treatise, a model for preparation of taxonomy/systematics manuscripts, and an art piece worthy of the coffee table. And all for free – who would have thought?

The 61 pages of this slim volume are divided roughly in half between text and illustrations. The text follows a standard pattern. Appetizers are the abstracted highlights, a brief and interesting introduction, and a concise outline of materials and methods. The main courses are detailed descriptions of deinopid somatic, genitalic, and behavioural characters, a brief phylogenetic analysis, diagnoses and other general information for Deinopidae and its children (*Deinopis* MacLeay, *Paleomicromenneus* Penney (known only from Cretaceous amber), and *Menneus* Simon), a simple and effective 23-couplet key to *Menneus* species, and detailed taxonomic information for the 14 known extant species of *Menneus* (concluding with brief discussion of three *nomina dubia* and a questionable species known only from a juvenile specimen in amber).

The dessert course is the coffee table component – a continuous block of over 150 illustrations (from a diverse array of non-coauthor sources) arranged in 32 plates after the text. The visual appeal of the images is undeniable: black-and-white photographs of deinopids and their webs, SEMicrographs of aspects of male and female morphology, a large number of “Visionary Digital” stacked colour images of deinopid somatic and male palpal morphology, and a greater number of black-and-white habitus (complete or partial) and genitalic images produced through an effective combination of simple line drawing, coquille board, and stacked photographic techniques. Also included are a cladogram, a museum specimen accumulation curve, and two species distribution maps. Images are presented in logical order within the block, minimizing



page flipping between text and relevant images, and are well but unobtrusively labelled to ensure there is none of the frustrated head-scratching often associated with user attempts to match authors' textual descriptions with potentially baffling images of "sclerites-in-space" (a Coddingtonism). The stacked images (especially those in colour) and many of the drawings are exceptional. The coquille renderings are worthy of close study – a light hand on the pencil combined with attention to detail and subtle effects of light and shadow has resulted in some truly fine examples of this deceptively difficult and frequently abused illustrative technique.

Taxonomy/systematics manuscripts have a deserved reputation for often being editorial nightmares characterized by overly lengthy and turgid prose, confusing presentation of nomenclature, and too few, cryptic, or otherwise poor illustrations. It can be very difficult to find willing competent referees, produce a valid consensus opinion on the quality and merit of manuscript content, convince authors to take reviewers' primary concerns seriously, and oversee publication of a useful well-formatted document. *Systematics of the Spider Family Deinopidae...* shows none of those negative characteristics – it has the appearance of having been well-prepared, well-reviewed and revised, and exceptionally well-produced. The complete package is presented in a user-friendly logical format – a simple but elegant taxonomic revision with a "value-added" phylogenetic bonus. The prose is succinct but perfectly sufficient for its descriptive purpose (to say little of scattered buried gems like "Multicellular animals famously have never evolved true axles, wheels, or even repetitive rotation of body parts, but *Deinopis* may hold the world record for trying."). Illustrations are not only excellent but the perfect complement to the text. In short, nothing to complain about here.

A worthwhile addition to the serious arachnophile's electronic or hardcopy library, *Systematics of the Spider Family Deinopidae...* appeals to a much wider audience. A copy strategically laid out next to your set of early Howling Wolf recordings will surely lead to interesting late-night conversations on the rhythm of repetition and how it relates to genitalic structure and function, scientific illustration as a unique and valid art form, or the evolution of a 24-hour cycle of retinal re-synthesis. Minimally, this volume should serve as a model for how it's done to anyone, novice or experienced, preparing a taxonomy/systematics manuscript.

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Why Sex? Gilbert, N., and Raworth, D. 2012. Amazon Digital Services. 178 pp.

(for details, see http://www.amazon.com/Why-Sex-e-book/dp/B0089QT3DM/ref=sr_1_1?s=digital-text&ie=UTF8&qid=1341089763&sr=1-1&keywords=ecology+genetics+gilbert) \$3.05

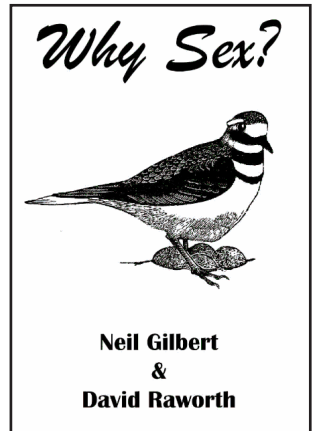
I spent several years during my graduate studies counting sperm in insects to understand reproductive strategies (my non-biologist friends were calling me Dr Sperm...), so when I saw the title of this book, I became interested and offered to review it. This book asks the always intriguing question “Why Sex?”. This is a relevant question from a biological perspective for any sexual organisms, not just insects. However, many of the studies and examples presented in this book involve insects; small size, short generation times and usually ease of maintenance in the lab, make them good study models.

Through 10 chapters describing in detail different studies, the authors try to answer that question from a biological perspective, by telling “a story of errors and misunderstandings, leading to one solution of the puzzle”. In the first chapter, *In the beginning*, the history of the subject is reviewed and the essential concepts are introduced. Simple concepts and definitions are given, which is a good thing for a readership probably coming from different branches of biology. Many quotations and the context around different scientists are presented. *Some theories of sex* then presents the main ideas about the functions and advantages of sex.

Starting with *A story about aphids, and a function of sex*, several detailed examples are given using model organisms to demonstrate different ideas or hypotheses. It starts with a thorough explanation of the thimbleberry aphid biology and reproductive system. To quote the authors, I felt “dazed by the complexity” of the descriptions in this chapter, but I will develop this point later. This example was used to deduce one function of sex, to maintain the variation needed to benefit a population in nature. In *Fitness and the “cost of sex”*, the “cost of sex” argument is reassessed, presenting rebuttals and objections to the rebuttals, and providing examples from nature. *Genetic control of variability* presents how selection can modify the amount of genetic variation without any change in the mean of the trait, using examples such as the cabbage moth’s aestivation and the large cabbage white butterfly’s diapause, followed by a few lab experiments. The fall webworm is then used to reinforce the theme of sex maintaining genetic variation to match unpredictable environmental variation in *Variation and the Fall Webworm*.

Genetics and ecology then describes attempts to measure natural selection in wild populations using diverse species, from plants to mammals, although these examples mostly do not add anything specifically about the function of sex. In *Variation and the Cabbage White butterfly*, the authors introduce quantitative genetics and use the small cabbage white butterfly to show that sex restores and maintains the populations’ responsiveness to directional selection. *Bifurcation: how might a species split into two?* explores whether sex could facilitate a split of a species into two species.

Finally, the authors summarize their story in *Conclusions*, with some of the main ideas being (1) that one function of sex is to develop and maintain the genetic variation needed by a population to survive and exploit an unpredictable and variable environment, (2) that the advantage is to the population as a whole, not to the individual, (3) that sex can facilitate adaptation to new environments, and (4) that we still do not fully understand *Why sex?*.



Why Sex? is available only as a digital edition. Being old fashioned, I prefer a hard copy which I can take and read anywhere (I have no tablet or phone of any kind and have no wish to acquire one!), but this is a personal opinion and has nothing to do with the quality of the book. However, I admit that being digital allows the book to be very affordable (which is pretty uncommon for scientific books!).

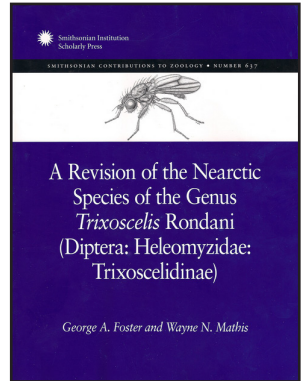
This book needs to be read from the beginning in order to fully understand the arguments: the authors often refer to examples or theories from previous chapters. Even though I read the whole book in sequence, I sometimes had to go back to previous chapters to read the example referred to again. So it must not be read like a textbook, by reading a chapter here and there, but as a whole story with a beginning and an end.

What struck me when I began reading was how the authors really introduce the scientists before presenting what they have done. The context is also always presented, and quotations from these scientists are even given, leading the authors to note that “readers may find some of these quotations heavy going” (Chapter 1.2). That is indeed sometimes the case, but a bit of history of sciences is a good thing, and I enjoyed actually reading the scientists’ own words instead of an interpretation of what they wrote. The same amount of detail is also provided when introducing different examples or studies. I sometimes thought that too many details were given and I felt a bit lost among too much information. However, often the authors gave a short paragraph summarizing the information. The detailed explanations would have benefitted from a graphical representation to help the reader follow the argument. That said, this style does fit with the authors’ objective of telling a story about the study of advantages of sexual reproduction. In addition, giving lots of details and presenting different opinions and theories, with different examples going in different directions, does allow readers to form their own opinion.

Why sex? is an interesting book to read for someone, like me, interested in the function of sex. Although the ideas are not necessarily new, the presentation is different and original, the authors telling the story of the study of the subject, as well as the history of the scientists and of the studies presented. I would thus suggest this book mainly for people interested not only in the subject, but also in history of sciences.

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A Revision of the Nearctic Species of the Genus Trixoscelis Rondani (Diptera: Heleomyzidae: Trixoscelidinae). Foster, G.A., Mathis, W.N. 2012. Smithsonian Institution Scholarly Press. Smithsonian Contributions to Zoology **637**. viii + 128 pp. ISSN 0081-0282 (paperback), 1943-6696 (online), free. <http://hdl.handle.net/10088/17554>.



Recent decades have seen an explosion in new techniques promising to revolutionize the field of taxonomy. An abundance of sequence data and fast computers have allowed the development of new approaches to exploring phylogenies and species boundaries. This wave of new data and techniques has led some to decry the “mediocrity of morphology” (Packer et al. 2009), but traditional morphological studies can still teach us a tremendous amount about the biodiversity around us. Even within the fairly well-studied boundaries of North America, there remain many undescribed species which can be discovered with a combination of focussed collecting and careful morphological study. *A Revision of the Nearctic Species of the Genus Trixoscelis Rondani (Diptera: Heleomyzidae: Trixoscelidinae)* by George A. Foster and Wayne N. Mathis is a great example of where these approaches can lead.

As the title makes clear, the monograph is a taxonomic revision of the genus *Trixoscelis*. These flies are generally small and inconspicuous enough to escape the notice of most naturalists, although they can be fairly common in the right habitats. Some species are boldly patterned with spotted wings and silvery patterns on the body, while others are nondescript grey. The most distinctive feature for the genus is the ocellar bristles, which unlike those of most acalyptrate flies are placed anterior to the ocellar triangle.

Trixoscelis species are widespread, occurring in most biogeographic regions outside of Australia and Antarctica. Foster and Mathis’ study focuses on the Nearctic fauna, describing 13 new species and revising the known species to treat a total of 37 species in the region. It also includes a discussion of *T. costalis* from the Galápagos Islands, clarifying the status of this species which was previously (erroneously) reported from Arizona. Unfortunately for most Canadians who may be interested in looking for these flies, most of the species are restricted to the southwestern United States. One species, *T. fumipennis*, occurs widely across Canada, and a few others occur in southernmost Saskatchewan, Alberta, and British Columbia.

Much of the content of the monograph is quite standard for a modern taxonomic revision. Following a brief introduction to the genus, there is a phylogenetic analysis of the group. This phylogeny is based on 23 morphological characters, and supports a few clades within the genus while leaving most relationships unresolved. The authors do find support for lumping the genera *Spilochroa* and *Zagonia* with *Trixoscelis*; these genera were formerly treated as distinct by most authors (e.g., in the Manual of Nearctic Diptera [Teskey 1987]), but both appear to be nested within *Trixoscelis* and simply represent particularly dark or pale forms of the genus. This treatment was previously suggested based on intuitive analyses by Cogan (1977) and McAlpine (1985), but it is good to see a formal phylogenetic analysis supporting this taxonomic change.

Following the phylogenetic section there is a dichotomous key to species. This key may pose some problems for those trying to identify a specimen in the hand. As an example, couplet 7 distinguishes species with a gena-to-eye ratio of less than 0.26 from those with a gena-to-eye ratio of more than 0.28. Although specimens with ratios well away from this dividing line should be easily separated, measuring this ratio to the required level of precision is quite difficult and

borderline specimens may be rather difficult to run through this couplet. It seems that some rearrangement of the key might have helped provide alternative characters or routes to make this type of keying decision easier.

The final section of the paper is a taxonomic treatment of each species, including a description, discussion of type material, and list of specimens examined. The descriptions are thorough, and are accompanied by simple but clear line drawings of the male genitalic characters, which are one of the key distinguishing features for species in the group. There are also five colour plates illustrating heads and two plates of black-and-white photographs of wings. All specimens are geo-referenced and dot maps illustrate the distribution of each species.

Little of the content in this monograph will surprise someone who has read recent revisionary literature. There are no revolutionary techniques here, although even the now-standard approaches used represent continuing evolution from older taxonomic revisions. The last revisionary study of the Nearctic *Trixoscelis*, published only 60 years ago (Melander 1952), neither mentioned nor illustrated the genitalic characters that are so essential in separating species in this group and in many other acalyptrate flies.

While the number of readers who will encounter the problem of identifying *Trixoscelis* to species is fairly low, this monograph can be unhesitatingly recommended to those readers as the best tool available for the job. The monograph will serve as a valuable reference for anyone trying to identify Nearctic *Trixoscelis* and represents a significant advance on the previous literature. As well, since the monograph can be downloaded for free from the Smithsonian Press, even those with only a passing interest can take a look.

Some may dispute the value of continuing to use low tech approaches to taxonomy. This monograph illustrates that there is still a lot of good science that can be done with little more than a microscope and a good collection of specimens.

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Understanding Bee Anatomy: a full colour guide. Stell, I. 2012. The Catford Press, 600+ illustrations, 208 pp., 24.4 x 17 x 1.6 cm softcover, ISBN-10: 0957422806 / ISBN-13: 978-0957422803. <http://www.understandingbeeanatomy.com/> \$43.20 USD + \$16 shipping and handling, amazon.ca \$94.12 CDN, amazon.com \$58.00 USD

Ian Stell, an emergency room physician in South-East London, England, and hobbyist beekeeper, was motivated to write this book while preparing for his master beekeeping examinations for the British Beekeepers Association. Just as his day job in emergency medicine required him to use his knowledge of anatomy to treat and prevent disease, so too did his beekeeping hobby. Transferring his skills and knowledge in human anatomy to honey bees, Stell has written and published a valuable volume on honey bee anatomy.

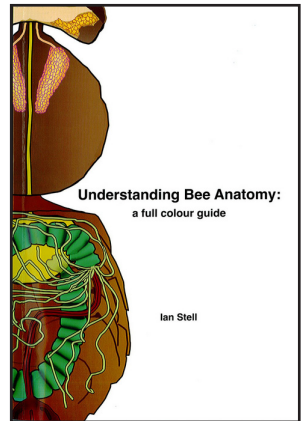
In addition to the book, Stell maintains a website and blog (<http://www.understandingbeeanatomy.com/>) devoted to furthering interest in and understanding of honey bee anatomy. The website features both additional photographs and videos not found in the book, and is a nice complement to the book for those wishing to explore honey bee anatomy further.

The publication of a new book on honey bee anatomy is relatively rare, with only three previous major publications devoted to the subject. The *Anatomy of the Honey Bee* (Snodgrass 1956) will still remain the vital reference for honey bee anatomy; however, *Understanding Bee Anatomy* offers a unique complement to previous bee anatomy references. Stell's book is both written in a manner accessible to the lay person, and is fairly affordable compared to other anatomy volumes. The hundreds of colour photographs and diagrams offer very detailed views of nearly all parts of honey bee anatomy. In many ways, the descriptive and accurate text is a complement to the photos and diagrams, rather than the reverse. The graphics illustrate all three castes through all stages of the development of a bee, from egg to adulthood.

The book begins with a detailed description (accompanied by numerous invaluable photographs) of the developmental stages of the honey bee. From there it progresses through all the major body parts, including chapters on the cuticle, head and neck, thorax, abdomen, legs, and wing and flight structures. Subsequent chapters cover the circulatory, respiratory, digestive, and neurological systems, and final chapters cover anatomy specific to queens and drones.

The text in each chapter is illustrated by colour diagrams, photographs, electron micrographs, and stained-sectioning. This concise and readable book is suitable for beekeepers wanting in-depth knowledge of bee anatomy (its intended audience), but also for researchers, scientists, and bee inspectors, to accompany the more detailed earlier books of Snodgrass (1956), Goodman (2003), and Dade (2009).

While it does offer a nice, photographic complement to the weightier tomes by experts in the field, it is not a replacement for these more complete and thorough volumes. My first instinct when I received the book was to search for worker ovaries, as these are what I spent the many years of my PhD dissecting, and are a bee body part with which I am intimately acquainted. Much to my disappointment they made an appearance in neither the section on the worker abdomen, nor with the queen ovaries. Closer examination revealed that there was no discussion or graphics outlining the differences in anatomy between laying workers and non-laying workers, or virgin versus mated queens. In addition, the section on drones contains images of the partial eversion but not full eversion of the male reproductive organs required for mating. An improvement for



the second edition would be a separate chapter on the reproductive systems of all three castes.

In addition, I found the lack of references frustrating. The author provides an enormous amount of information, but no references as to the sources of this information or where one could begin to look for more detail on specific subjects. The ‘further reading’ section at the back is limited to the three main bee anatomy texts mentioned above. This may be enough for the intended beekeeping audience, but researchers will find themselves using the book as a complement to other texts.

I also found the index frustrating for two reasons. First, topics are physically aligned with subtopics under each letter, and it is difficult to distinguish them. For example, topics such as those under ‘S’ – ‘salivary gland’, ‘scape’, and ‘sclerotin’ should be clearly different from subtopics within these topics such as those under ‘salivary gland’ – ‘development’, ‘mandibular’, and ‘thoracic’. Second, the index is not a thorough guide to all the topics covered by the book. For example, a search for “wing” leads only to the formation of the wing during development, and not to any of the useful information found in the chapter on wings and flight muscles.

While the title of the book implies that the book covers “bee anatomy”, it is in fact restricted to the anatomy of the European honey bee, *Apis mellifera*, specifically. While much of the information would also be applicable to other *Apis* species, readers looking for information about the anatomy of other bee genera will be disappointed. The book is aimed at beekeepers wishing to learn more about honey bee anatomy, and specifically as an aid to preparation for beekeeping exams.

While some of the many colour photographs are dark, and it can be difficult to distinguish features, on the whole the graphics are excellent, and worth the price of the book. The text is very readable and the book is packed with information and graphics that would be useful to many audiences interested in honey bees. It offers a good introduction to honey bee anatomy for beekeepers, and the photographs offer an excellent complement to more detailed texts for researchers.

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

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

Rothenberg, D. Bug Music: How Insects Gave Us Rhythm and Music. 2013. St. Martin's Press, New York 278 pp. Hardcover. ISBN 978-1-250-00521-2. CAN\$31.

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

Bulletin of the Entomological Society of Canada

Editor: Cedric Gillott
Assistant Editor: Julia Mlynarek

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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.

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1863 – Une année millésime!

Songer à la réunion très spéciale de notre Société qui aura lieu plus tard cette année m'a amené à penser aux autres événements qui se sont produits en 1863. J'étais déjà au courant d'un autre événement qui, pour les non-initiés, pourrait sembler avoir une connotation entomologique, c'est-à-dire le « criquet »! Cependant, dans le cas présent, nous parlons du sport, et non de l'insecte, puisque c'est en janvier de cette année que ce qui fut probablement le meilleur club de criquet connu au monde, le Yorkshire CCC, a été formé à Sheffield (l'endroit de ma naissance), en Angleterre. Durant l'automne de cette année-là, une autre institution sportive est née. La Fédération anglaise de football a vu le jour, menant à la séparation formelle entre le football (soccer) et le rugby avec le développement subséquent des Lois du jeu (avec surprise, un nombre plutôt faible de professionnels semblent apparemment les connaître, en jugeant de leurs actions dans les parties du Championnat d'Angleterre de football!).

Dans le domaine de l'ingénierie, une icône domestique, la toilette avec chasse d'eau, a été inventée par Thomas Crapper, qui porte bien son nom, en janvier 1863, alors que durant le même mois, la première partie du métro de Londres (le « Tube ») ouvrait. En septembre, l'opéra « Les Pêcheurs de Perles » de George Bizet jouait en première à Paris.

En mai 1863, William Banting, un entrepreneur de pompes funèbres et fabricant de cercueil (et un cousin lointain du canadien Frederick Banting, codécouvreur de l'insuline), anciennement obèse, publie sa brochure *Letter on Corpulence, Addressed to the Public*¹, la première tentative pour vulgariser une diète pour la perte de poids basée sur la réduction de la prise de glucides simples et raffinés. La brochure a eu tellement de succès qu'un nouveau verbe est né en anglais, « to bant », qui veut

1 Traduction libre : « Lettre sur la corpulence, adressée au public »

1863 – A vintage year!

Missing about our Society's very special meeting in Guelph later this year got me thinking about what else happened in 1863. I was already aware of one other event that to the uninitiated may seem to have an entomological connection, namely 'cricket'. However, in this case we are talking about the sport, not the insect, for it was in January of that year that probably the world's best-known cricket club, Yorkshire CCC, was formed in Sheffield (my birthplace), England. In the fall of the year, another great sporting institution was born. The (English) Football Association came into being, leading to the formal split of football (soccer) from rugby, with the subsequent development of the Laws of the Game (surprisingly few professionals having ever encountered these, apparently, judging by some of their actions in English Premier League games!).

In the engineering world, a domestic icon, the flushing toilet, was invented by the aptly named Thomas Crapper in January 1863, while in the same month the first part of the London Underground ('Tube') was opened. In September, George Bizet's opera 'Les Pêcheurs de Perles' premiered in Paris.

In May 1863, William Banting, a formerly obese London undertaker and coffin maker (and a distant relative of Canada's Frederick Banting, co-discoverer of insulin) published his pamphlet 'Letter on Corpulence, Addressed

to the *Public*', the first attempt to popularize a weight-loss diet based on reducing intake of simple, refined carbohydrates. Such was the pamphlet's success that a new verb 'to bant' was coined, meaning to reduce weight by the Banting method!

But 'Whoa!', this is a science magazine. So, what was happening on the science front 150 years ago. For starters, the prestigious National Academy of Sciences (USA) got a slight lead over the ESC, being created on 3 March 1863 with 50 charter members.

Home brewers and wine makers, indeed all those who enjoy a drop of tippie, can rejoice because in 1863 Pasteur discovered the microorganisms that turn alcohol into vinegar, and that the 'bugs' could be killed by heat treatment (hence 'pasteurisation'). On another biological front, two important books appeared: Thomas Huxley published '*Evidence on Man's Place in Nature*' where he attempted to apply Darwin's ideas on evolution and natural selection to humans, and Charles Lyell's '*Geological Evidences of the Antiquity of Man*', also supporting Darwin's views, was released as a three-part treatise.

Recent news that the level of CO₂ in the atmosphere has just tipped the 0.04% mark is frightening given this gas' greenhouse effect (absorption and retention of infrared radiation by gases in the earth's atmosphere). However, the idea of a greenhouse effect is far from new: it was, in fact, in 1863 that the Irish physicist John Tyndall, provided the first experimental evidence for its occurrence.

Many readers will be familiar with the agricultural products from Bayer AG, but do they realize that the company was founded in 1863 by Friedrich Bayer?

And in the event that all this history has given you a headache, reach for an aspirin, patented by the aforementioned company in 1899.

Have an enjoyable and productive summer.

dire perdre du poids par la méthode Banting!

Mais 'Ho!', ceci est un magazine scientifique. Alors, que se passait-il du côté de la science il y a 150 ans. Tout d'abord, la prestigieuse Académie nationale des Sciences (É.-U.) a eu une légère avance sur la SEC, ayant été créée le 3 mars 1863, avec 50 membres fondateurs.

Les brasseurs maisons et les fabricants de vin, et évidemment tous ceux qui apprécient boire un petit coup, peuvent se réjouir puisqu'en 1863 Pasteur découvre les microorganismes qui tournent l'alcool en vinaigre, et que ces « bestioles » peuvent être tuées par traitement de chaleur (nommé 'pasteurisation'). Sur un autre aspect biologique, deux livres importants paraissent : Thomas Huxley publie *Evidence on Man's Place in Nature*², où il tente d'appliquer les idées de Darwin sur l'évolution et la sélection naturelle aux humains, et *Geological Evidences of the Antiquity of Man*³ de Charles Lyell, qui soutient également les opinions de Darwin, est sorti sous forme de traité en trois parties.

Les récentes nouvelles à l'effet que le niveau de CO₂ dans l'atmosphère vient d'atteindre la marque de 0.04% sont effrayantes, considérant les effets (absorption et rétention des radiations infrarouges par les gaz dans l'atmosphère de la Terre) de ce gaz à effet de serre. Cependant, l'idée d'un effet de serre est loin d'être nouvelle : c'est en fait en 1863 que le physicien irlandais John Tyndall fournit les premières preuves expérimentales de son existence.

Plusieurs lecteurs sont familiers avec les produits agricoles de Bayer AG, mais réalisent-ils que la compagnie fut créée en 1863 par Friedrich Bayer?

Et dans le cas où toute cette histoire vous aurait donné un mal de tête, prenez une aspirine, inventée par la compagnie susnommée en 1899.

Un été agréable et productif à tous.

2 Traduction libre : « Preuve de la place de l'Homme dans la nature »

3 Traduction libre : « Preuves géologiques de l'ancienneté de l'Homme »

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Société d'entomologie du Canada, 2012-2013

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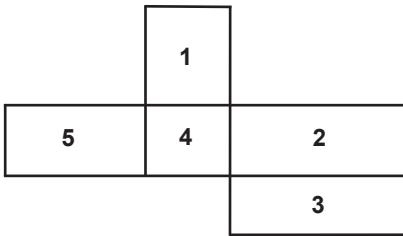
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Images

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

Beneath the title: Nymphs of *Pachycoris klugii* on *Jatropha 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.