

# Bulletin

Entomological Society of Canada  
Soci t  d'entomologie du Canada

Volume 41  
Number / num ro 1



March / mars 2009

Published quarterly by the  
Entomological Society of Canada

Publication trimestrielle par la  
Soci t  d'entomologie du Canada



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## Images

**Sur le dos :** La coccinelle *Anatis labiculata* (Coleoptera: Coccinellidae) se nourrissant d'un adulte d'*Uroleucon rudbeckiae* (Hemiptera: Aphididae). Photo: Pat MacKay

**Sous le titre :** L'urophore des chardons, *Urophora cardui* (Diptera: Tephritidae), originaire d'Europe et introduit en Amérique du Nord pour le contrôle du cirse des champs, *Cirsium arvense*. Photo: Steve Marshall

1. Mâle chalcis du sapin de Douglas, *Megastigmus spermotrophus* (Hymenoptera: Torymidae). Photo: Dion Manastyrski

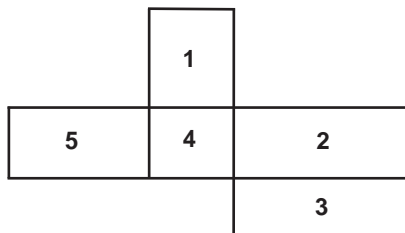
2. Une guêpe maçonner, probablement *Ancistrocerus* sp. (Hymenoptera: Vespidae: Eumeninae). Photo: Joanne Bovee

3. Une zygène, *Zygaena* sp. (Lepidoptera: Zygaenidae) sur une centaurée. Photo: Alicia Leroux

4. Vérification des pièges à charançons dans les fraisiers. Photo: Kenna MacKenzie

5. Accouplement de *Misumena vatia* (Araneae: Thomisidae) et souper d'empidide (Diptera: Empididae). Photo: Brian Klinkenberg

**Couverture arrière :** Une libellule tropicale, *Neurothemis* sp. (Odonata: Libellulidae), se rafraîchissant par thermorégulation, Thaïlande. Photo : Jeremy McNeil





When I think of what is going on in scientific publishing over the last few years, I think of the Chinese blessing/curse “May you live in interesting times”. *The Canadian Entomologist* has been published since 1868. I believe *TCE* will go through more changes in the next 10 years than it has in the last 140. Never before have scientists had so much to read, and also so many journals publish their work. NRC Press is revamping all their affiliate journals making them more user friendly and more electronically accessible. *TCE* will be one of the first to be converted. This will allow for viewing the papers as a web page (xml) which allows for linking of references, automatic downloads (RSS feeds), and searching the journal contents.

Hand in hand with this updating of the *TCE* web site is the digitization of the back issues. This year will see all the issues of *TCE* and the *Memoirs* available online. The digitization is well under way and by this summer members will have full access to past issues of *TCE*. Also, you will be able to do Boolean searches on past issues, so you can data mine the back issues for information that is not obvious from the title. Looking for something as specific

Quand je pense à ce qui se passe dans le domaine des publications scientifiques depuis les quelques dernières années, je pense à ce dicton chinois (qui représente à la fois une bénédiction et une malédiction) «Puisses-tu vivre une époque intéressante». *The Canadian Entomologist* est publié depuis 1868. Je crois que *TCE* va subir plus de changements dans les 10 prochaines années qu’il n’en a subi depuis 140 ans. Jamais auparavant les scientifiques ont tant eu à lire, et jamais tant de revues ont publié leurs travaux. Les Presses du CNRC sont en train de remanier toutes ses revues affiliées en les rendant plus conviviales et plus accessibles électroniquement. *TCE* sera l’une des premières revues à être converties. Cela permettra de visualiser les articles en pages web (xml) qui permettent aux références d’être accédées par lien électronique, de télécharger automatiquement (format RSS), et de sonder rapidement le contenu des revues par des mots-clés.

En parallèle avec cette mise à jour du site web de *TCE*, est la numérisation des numéros antérieurs. Cette année verra tous les numéros de *TCE* et des *Memoirs* disponibles en ligne. La numérisation est bien avancée et dès l’été les membres auront accès absolu aux numéros antérieurs de *TCE*. Aussi, vous serez capable de faire des recherches booléennes dans les publications antérieures, donc de les sonder pour de l’information qui n’est pas exprimée dans le titre. Nous sommes à quelques clics de souris d’être capable de chercher une information aussi spécifique que ‘tous les coléoptères récoltés au Manitoba entre 1910 et 1950’. En plus, nous allons assigner un ‘identificateur d’objet numérique’ pour tous les articles. Cela permettra à ces articles d’être cités électroniquement, facilitant ainsi la citation de cette littérature dans des publications électroniques.

Quand j’ai visité le Siège social l’an dernier, j’ai parcouru les numéros antérieurs et me suis arrêté au premier numéro. Le premier article était intitulé «A Luminous Larva» par le Rév.

as all beetles collected in Manitoba between 1910 and 1950, is just a few clicks away. In addition, we will be assigning a Digital Object Identifier (DOI) to all papers. This will allow these papers to be cited electronically, making it easier for this literature to be cited as electronic publications.

When I visited the Headquarters last year, I browsed through the past issues and pulled out the first volume of *TCE*. The first paper was entitled “A Luminous Larva” by Rev. C.J.S. Bethune. One hundred and forty years later, the reader interface is a bit yellow, but it works. I had no problem downloading (reading) the information written so long ago, the formatting was conserved, all the table columns were aligned and the graphics were intact. There are, however, concerns that the new electronic formatting of journals is a disaster waiting to happen. Have you ever tried to use a 5 ¼-inch diskette lately, or pulling out an old manuscript that was typed up in WordStar 10 years ago? What if a particularly virulent virus paralyzes the Internet or worse corrupts the files on the NRC Press server? NRC Press has an offsite electronic archive of all current and past issues, in case such events occur. Yes, electronic formats will change. For instance, the acronym PDF will eventually revert to Post Doctoral Fellow from Portable Document File, as this format is fades away. However, I am confident that the ESC will continue to invest in maintaining *TCE* in its new electronic form as it did in its paper format.

C.J.S. Bethune. Cent quarante ans plus tard, l’interface du lecteur est un peu jaune, mais fonctionne. Je n’ai eu aucun problème à télécharger (et lire) cette information écrite il y a si longtemps ; la mise en page est conservée, toutes les colonnes des tableaux sont alignés et les graphiques sont intacts. Nous avons toutefois certaines craintes à propos de la mise en page électronique des revues et qu’un désastre arrive. Avez-vous déjà essayé d’utiliser une disquette de 5 ¼ pouces dernièrement, ou tiré un vieux manuscrit du tiroir qui a été tapé avec WordStar il y a dix ans ? Et si in virus particulièrement virulent paralysait l’internet ou pire, altérerait les fichiers du serveur des Presses du CRNC ? Les Presses du CRNC ont un système d’archives électroniques hors site pour tous les numéros courants et passés, pour faire face à une telle éventualité. Oui, la mise en page électronique va évoluer. La signification de l’acronyme PDF (pour *Portable Document File*) retournera éventuellement à *Post Doctoral Fellow*, puisque ce format devient plus rare. Toutefois, je suis confiant que la SEC continuera d’investir dans le maintien de *TCE* dans son nouveau format électronique, comme elle l’a fait pour son format papier.



Max Larrivière

*Ampedus* sp. (Elateridae)



## On a Wing and a Prayer: Identification of Insects from Photos in the Field

Regular readers (all three of you) will notice that I have changed my photograph for this issue's column. This was predicated by disparaging comments from at least one colleague who noted that the previous image would have been more complete if pennies had been placed over my eyes. Accustomed as I am to seeing a quite similar visage each morning when I shave, I suppose I didn't really see any problem with the photo. (As the wise orthopteran once said – you're always your own worse cricket). And anyway, I definitely received some benefits from the old photo, for example:

a) Starting the column with it may have fooled readers into believing that the quality improved as they began to read.

b) Chances of securing an unsolicited offer

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to work as an extra for the next re-make of Night of the Living Dead were exceedingly more likely.

c) People might have been less disappointed when they met me in person.

I will admit, however, that not all bad photos are good. I speak from personal experience in this matter because as a taxonomist, I am quite regularly requested to identify specimens from photographs taken in the field that are – how can I put this delicately – not exactly prime candidates for the cover of *Ichneumonids Illustrated*. Now that's not to say that all of the photos I receive are bad. But there are definitely some that leave me shaking my head (and often rubbing my poor, strained eyes). Because I'm not an expert at photographing insects in the field, I will not attempt to provide a "how to" guide for this activity. For this, the reader is directed to the latest issue of *American Entomologist*: Vol. 54(4), which has 12 articles on all aspects of insect photography including several on photography in the field (for all budgets). Instead, I will do what I do best – dwell on the negative. *Moth Balls* hereby presents the five best ways to ensure that no entomologist (living, dead or imaginary) will ever be able to identify your photographs below the level of phylum.

### 1) Focus

What better way to annoy your friendly, neighbourhood entomologist than by asking them to identify a poorly focused photograph? Care must be taken not to make your photographs too out of focus lest they be dismissed entirely. If your entomologist uses phrases such as, "That could be a leg" or "I think the head is on the right side of the photograph", then you have probably found the correct position along the "in-focus, out-of-focus" continuum. Whatever you do, don't EVER bracket your photos (i.e., take photographs at multiple levels of focus) lest you feel obliged



to surrender to a whimpering entomologist who requests a photograph focused on the insect itself, rather than the condominium complex in the background.

**2) Aspect**

It's curious. People generally don't expect doctors to make diagnoses of their stomach ailments by showing them only the bottoms of their feet and yet the same rational expectations are not accorded to entomologists. (What do you mean, you can't identify it? You're an entomologist!) So how can you exasperate an entomologist by showing them a view with the least possible taxonomic information? If you have a choice of dorsal, ventral or lateral view, definitely choose the ventral view. Taxonomic entomologists are notoriously lazy when it comes to finding all diagnostic characters of a species and the hassle of turning a specimen over on its back to look underneath is generally enough to ensure that few or no characters of taxonomic importance have been documented on the underside. If you have to show a lateral view, make sure that the majority of the insect is obscured by interwoven legs and/or crumpled wings and NEVER EVER show an anterior view of the head or a clear view of the wings. Posterior views of insects are generally safe as long as they are taken at a great distance because many entomologists have a fascination (and therefore an in depth knowledge) of the minute details of insect genitalia. Finally, if you really want to provide maximum annoyance, do some research and find out what the diagnostic characters are for the insect group you have photographed. Some judicious cropping and/or use of the smudge feature in Photoshop will help maintain the mystery in all but the most obvious photographs.

**3) Magnification**

You can really make identifications more difficult by choosing a completely inappropriate level of magnification. One trick is to make sure that the entire object on which the insect

is situated is visible in the photo. This works well when taking photos of thrips on rose bushes and even better with bark beetles on old growth Sitka spruce trees. Including such objects as bushes or trees can be justified on the basis of composition or because you wish to show habitat as an aid to identification (but see 4a, below). Of course, allied with magnification are the concepts of resolution and image size. You may have the unfortunate luck to submit your photograph to one of the few technologically informed entomologists who have mastered the advanced skill of enlarging digital images. For this reason, always shoot at the lowest possible resolution. In terms of image size, 100 KB per photo is more than adequate and will guarantee that your photos blur beyond recognition if any amount of enlargement is attempted. Shooting at such low resolution has the added advantage of allowing you to attach dozens of photos to each email. This will maintain interest in your images by providing the entomologist with a faint glimmer of hope that somewhere among the attached collage of visual diarrhoea is a photo that will show them a view that will unlock the mystery of a specimen's identity. The best way to prevent this from happening is to ensure you never send more than one photo of any particular specimen.

**4) Supplemental information**

Many times, identifications of specimens can be greatly facilitated by providing additional information such as where and when the specimens were collected, whether they were reared from a particular plant or insect host, etc. In some cases, giving an entomologist this kind of information with a photo makes identifications positively easy (e.g., some caterpillars on their host plants). In order to increase the level of challenge during photo identifications, several guidelines are suggested:

a) if possible, avoid photographing insects in their natural habitats. Petri dishes, countertops or the dashboard of cars offer far more challenging venues. If you feel that inclusion

of a plant in your photo is essential to its composition, then choose one that is completely removed from nature such as a blue carnation or a cauliflower.

b) try not to make the foolish mistake of including supplemental information in the file name of the photograph. It is usually much better to leave the original file name (e.g., DSCN 9763) on a photograph rather than attempt to change it so that it describes the insect or where it was collected (but see 4c., below).

c) if you ever make the mistake of photographing a specimen multiple times, then be careful not to attach these images to an email in consecutive order. Note also that even if you mix up the order of your photos, leaving your DSCN numbers on the files will make it possible for all but the most incompetent entomologist to arrange the photographs by number, and hence by specimen as well. In these cases, changing the titles of your photos is recommended, but be sure to limit your titles to vague descriptors (e.g., small black bug, large brown thingy, etc.) and use completely different file names for each photo if they are photographs of the same specimen (e.g., tiny brown beastie, little off-black critter).

## 5) Subject

Whereas most insect photographing trips provide the enthusiast with a plethora of bad photos to spread around to unsuspecting entomologists, not all trips end in such success, especially when targeting specific groups that are difficult to find and/or photograph. In some cases, certain groups of insects are so difficult to find or photograph that entomologists have devised clever ways to identify their presence without actually seeing the insects themselves (e.g., gall makers, bark beetles). Not all rare or concealed groups, however, have been researched to the same extent. This opens up an entirely new field of photography that can provide almost limitless photographic opportunities with little or no chance of actual correct identification. As a way of suggesting examples of potential, unexploited opportunities,

below are three books that, to my knowledge, have not yet been written. However, this fact should not stop you from compiling numerous photos of these and similar insect-related evidence for possible future publications:

a) Handbook of the footprints of the jumping bristletails of Ontario.

b) Guide to spittle patterns of the spittle bugs of the Maritimes.

c) Compendium of fecal pellet morphology of the snakeflies of Alberta.

Join *Moth Balls* next issue for more distorted images of the world of insects.



A *Paederus* rove beetle (Staphylinidae)

Steve Marshall

## Norman Criddle Award 2008 / Le Prix Norman Criddle 2008

The Entomological Society of Canada's Norman Criddle Award recognizes the contribution of an outstanding non-professional entomologist to the furtherance of entomology in Canada. The award may be given for outstanding work in teaching or research, community projects, publicity, popular writing, preparation of slide sets or films, or any other activity that enhances the visibility of entomology. The recipient is selected by the affiliate society that hosts the annual meeting of the Entomological Society of Canada.

This year the award goes to **Jay Cossey**.

For as long as he can remember, Jay has been obsessed with insects — he chased butterflies as soon as he could walk and devoured every field guide, bug book and magazine article he could find. No opportunity to be in the field was squandered. As a teenager, Jay turned toward photographing insects, a passion that continues to this day.

Without university training, Jay has become a knowledgeable naturalist, a true amateur entomologist and an accomplished nature photographer. His photographs were mostly languishing in file cabinets until, at the insistence of a colleague, he launched his first web gallery in 1999: [www.PhotographsFromNature.com](http://www.PhotographsFromNature.com).

Jay's photographs have been published in numerous field guides, textbooks and periodicals including: *2004 National Geographic Butterfly Calendar*, *2004 and 2005 Lupus Canada Butterfly Calendars*, *The Butterflies of Canada*, *Audubon Society Pocket Guide to Familiar Insects and Spiders*, *Kaufman Focus Guide to Butterflies of North America*, *Kaufman Field Guide to Insects of North America*, *National Wildlife Federation Guide to Insects and Spiders*, *Butterflies of Ohio*, *Butterflies of Michigan*, *Butterflies of the White Mountains of New Hampshire* (Audubon).

Most recently, Jay contributed dozens of photographs and served as photo editor for the *Dragonflies and Damselflies of Northeast Ohio*, 2<sup>nd</sup> Edition (2008), for the Natural Areas Division of the Cleveland Museum of Natural History.

In 2008, after many years as a commercial photographer and graphic designer, Jay Cossey was given an opportunity to pursue his true passion full time. In February 2008 he joined the Biodiversity Institute of Ontario in Guelph as nature photographer and graphic designer.



Martin Schwalbe

Jay Cossey

For more information about Jay, please check this article:

<http://www.uoguelph.ca/atguelph/08-10-08/profile.shtml>



Le prix Norman Criddle de la Société d'entomologie du Canada souligne la contribution d'un entomologiste amateur remarquable en entomologie au Canada. Ce prix peut être accordé pour un apport exceptionnel en enseignement ou en recherche, pour des projets communautaires, en publicité, pour des ouvrages de vulgarisation, pour la préparation de diapositives ou de films, ou pour n'importe quelle autre activité qui met en valeur l'entomologie. Le donataire est sélectionné par la société affiliée qui organise la réunion annuelle de la Société d'entomologie du Canada.

Cette année, le prix est décerné à **Jay Cossey**.

D'aussi loin qu'il puisse se souvenir, Jay a été obsédé par les insectes – il chassa les papillons aussitôt qu'il pût courir et dévora chaque guide de terrain, livre de bibittes et article de revue qu'il pouvait trouver. Il ne manqua aucune occasion d'être sur le terrain. En tant qu'adolescent, Jay se tourna vers la photographie des insectes, une passion qui continue à ce jour.

Sans formation universitaire, Jay est devenu un naturaliste averti, un véritable entomologiste amateur et un photographe accompli. Ses photographies dépérissaient dans des classeurs jusqu'à ce qu'il lanca, sous l'insistance d'un collègue, sa première galerie web en 1999 : [www.PhotographsfromNature.com](http://www.PhotographsfromNature.com)

Les photographies de Jay ont été publiées dans de nombreux guides de terrain, manuels et revues y compris : *National Geographic Butterfly Calendar* (2004), *Lupus Canada Butterfly Calendars* (de 2004 et 2005), *The Butterflies of Canada*, *Audubon Society Pocket Guide to Familiar Insects and Spiders*, *Kaufman Focus Guide to Butterflies of North America*, *Kaufman Field Guide to Insects of North America*, *National Wildlife Federation Guide to Insects and Spiders*, *Butterflies of Ohio*, *Butterflies of Michigan*, *Butterflies of the White Mountains of New Hampshire* (Audubon).

Tout dernièrement, Jay a produit des douzaines de photographies et a servi comme rédacteur de photos pour la 2<sup>ème</sup> édition (2008) de *Dragonflies and Damselflies of Northeast Ohio*, pour la division des aires naturelles du Cleveland Museum of Natural History.

En 2008, après un grand nombre d'années comme photographe commercial et concepteur graphique, Jay Cossey a eu l'opportunité reçue l'occasion de poursuivre sa véritable passion à plein temps. En février 2008, il se joint au Biodiversity Institute of Ontario à Guelph comme photographe de la nature et concepteur graphique.

Pour plus de renseignements sur Jay, veuillez consulter cet article :

<http://www.uoguelph.ca/atguelph/08-10-08/profile/shtml>



Martin Schwalbe

During the summer of 2008, Jay led an expedition to collect invertebrates in Canada's National Parks in "BIObus", the Biodiversity Institute of Ontario's mobile lab/field vehicle.

## The Lalonde Lab

It's a wonderful life in the Lalonde Lab. We operate out of the Okanagan campus of the University of British Columbia in Kelowna. We have ties with the UBC Okanagan Centre for Species at Risk and Habitat Studies, the Agriculture and Agri-Food Canada (AAFC) research station in Lethbridge and the Evolutionary Ecology Research Group at Simon Fraser University (SFU). Not your ordinary gang of entomologists, we deal with the bugs of major significance: parasitoids, weed bio-control agents, gall formers and bark beetles. More specifically our work deals with insects' use of information and how it affects their population and community dynamics. You can find more information on the Lalonde Lab at <http://people.ok.ubc.ca/blalonde/Bobspage.html>.

### Jordan Bannerman

Jordan completed an Honours project looking at landscape effects on the composition of *Diplolepis* gall communities. An avid fly fisherman, Jordan's intimate knowledge of every back road in the Okanagan came in handy when Haley Catton (below) went looking for field sites. Really, the lab anchorman, Jordan also helped out in a number of other lab projects. Jordan is now pursuing his MPM (Masters of Pest Management) at SFU with



Morgan



Jordan

Bernie Roitberg. He is looking at parasitoids of the green peach aphid in greenhouse systems. Specifically he is looking at the community dynamics of the green peach aphid and two of its parasitoids.

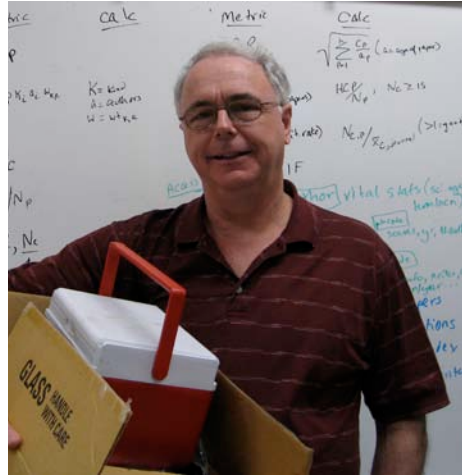
### Morgan Hoffman

Morgan is interested in pteromalid parasitoids, specifically *Nasonia* spp. This parasitoid is an important model organism for behavioural ecologists. Morgan is evaluating the foraging dynamics of larvae during development within the host, analyzing how relatedness affects competition during superparasitism. Morgan is using advanced molecular techniques to identify different individuals' offspring within host. Like Nanook of the North, she braved summer blizzards to catch parasitoids and their hosts around BC. Her cultures continue to be a source of both pride and anxiety for her, as maintaining live insects is always interesting to say the least. Overall, Morgan's MSc research will enhance our understanding of how parasitoid competition is affected by

social factors.

**Haley Catton**

Does non-target attack by a biological control insect affect native plant populations? Haley’s PhD research is co-supervised by Rose De Clerck-Floate from AAFC in Lethbridge. She explores population level non-target attack using the biocontrol system of an introduced root-feeding weevil *Mogulones cruciger*, its target host/troublesome weed houndstongue (*Cynoglossum officinale*) and native non-target bluebur (*Hackelia* spp.). Field research begins in spring 2009 on a ranch near Cardston, Alberta where high numbers of *M. cruciger* will be released onto sites containing naturally occurring *Hackelia* plants and varying levels of houndstongue. The response of the insects to varying levels of host and non-target plants will help us understand the “Risky Business”



Haley Catton

Bob

he will be analyzing gall structures to supplement Jordan’s previous work.

**Bob Lalonde**

...generally Bob just sits back and lets the others do the work in this little shop of horrors... but back in his productive days he obtained his PhD at Simon Fraser University with Dr. Bernie Roitberg studying seed predation of Canada Thistle (*Cirsium arvense*). Over the years Bob has studied plant-insect interactions, behaviour and life history strategies and



Morgan Hoffman

Haley

(...a freebie!) of weed biological control.

**Eric Alexis**

Eric is the new kid in town. He has been brought into the lab, as an undergraduate researcher, to address some of our gang’s important lingering questions. Eric will be quantifying fat reserve loss from the beetlejuice as a function of migration distance. Furthermore



Haley Catton

Eric

recently became Head of the Unit of Biology and Physical Geography at UBC Okanagan.

**Cassidy Dahl and Rebecca Tyson**

Mountain pine beetles are massing on the borders of the city of Kelowna like an army of darkness. Cassidy worked this summer on pine beetle migration. She looked at distribution and abundance of these pests throughout the city of Kelowna in an attempt to visualize how the insects move through urban landscapes. Rebecca will use Cassidy's data in order to develop a mathematical model for beetle movement in urban areas. The modeling study will enhance our understanding of pine beetle movement in urban landscapes and may be used as a predictive tool for management of the pine beetle epidemic.



Bob Lalonde

Cassidy

**Quiz time!**

Answers: It's a Wonderful Life; Anghorman; Nanook of the North; Risky Business; Our Gang; Beetlejuice; Little Shop of Horrors; Army of Darkness



Max Larnivee

*Saperda puncticollis* (Cerambycidae)





*Dear Buggy,*

*Help! My committee just passed back my proposal and said my literature review was bad! I don't understand, I read everything that I could find on the web. What do I do?*

*Googling in Gainsborough*

Hi GIG. To paraphrase Shakespeare: **there** are more things in the literature, dear student, than are returned on your screen. Here's the dirty little secret about your favourite search engine when it comes to the scientific literature. Not everything that exists is available in digital form, and not everything that is available digitally can be found.

I'm guessing that you're a member of the generation that has grown up with easy access

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*Chris MacQuarrie is a Postdoctoral Fellow with the Canadian Forest Service in Edmonton, Alberta, where he studies the ecology and population dynamics of invasive species.*

*Contact Chris with your questions or suggestions for future columns of 'Dear Buggy' (e-mail: [cjkmacquarrie@gmail.com](mailto:cjkmacquarrie@gmail.com), tel: (780) 435-7362), or post them to the ESC's student Facebook page at <https://www.facebook.com/group.php?gid=13552445022>*

to literature on the web. And, like me, you're used to being able to access anything you want from the comfort of your office. Some of my more learned colleagues ('learned' of course is a euphemism for 'graduated prior to 1990') speak fondly of a time when they would actually visit the library to peruse the new journals when they came in. I'm somewhat included in this crowd as I'm one of the last that had to go to the library to read the book version of Current Abstracts to find papers for essays during my undergrad. I remember when CA came out on CD it was quite a big deal, but you still had to go to the library as my University only had a site license for a few sets of discs. It all sounds quite quaint when you consider that most of us now search for and access literature in digital form via the web. In fact it is probable that there is some student out there right now who will never visit the library to get a journal article. But hey, what's wrong with having the world at our fingertips? No more time spent in dusty stacks only to find the book you're looking for is gone, no more having to scrounge money for the photocopier. Sounds great, right?

Well, only if you're looking for material published within your own lifetime. Almost anything published after 1998 can be found in electronic form, either from the journal itself, or a secondary source like JSTOR. Depending on the journal, articles published as long ago as the 1980s or even earlier can now be found. There are few large and well known journals such as *Science* and *Nature* that have their full run available in digital form, but these are the exceptions, not the rule. This is changing though as more journal publishers and societies recognize the value of having their catalogues online [as I submit this in February 2009 the Entomological Society of America just announced their full catalogue is available online, and soon will be *The Canadian Entomologist*]. However, it is still the case in 2009 that older papers published in smaller and more field-specific journals are not available in digital form.



But let's assume for a minute that at some point in the near future everything will be made available on the web. Will we still be able to find it?

When running an internet query we all follow the same pattern. Think up some key words, punch them into that little box and hope for the best. We hope that: a) we've picked the right search terms and b) those terms can be found in the search engine's database. For modern digital papers in PDF format the database is quite large because the software can scan the title, the abstract, the key words and the body of an article. Having access to this much material maximizes the probability of your search terms being found. If you're in luck, your search engine also possess the ability to suggest similar terms and help you refine your search. However, searching becomes harder with older papers because anything from the mid 1970s till the early 1990s may only be indexed by the title and abstract, and works older than that may only be indexed by the title. And that's only assuming some poor soul has been paid to do the unfortunate job of keying in all those old abstract books that I used to have to search through as an undergraduate. Moreover, this situation is unlikely to change even as more old papers are scanned and put on the web as it's unlikely that article text will be made searchable (Optical character recognition is still hard and expensive). So unless you're a search engine 'ninja' or very lucky, you're probably not going to find everything published on your particular organism by just relying on a simple web search.

Oh, and just to make it interesting, up until now I've only been considering the peer-reviewed literature. I haven't even talked about the 'grey' literature put out by government agencies which are rarely indexed anywhere on the web. These often contain an abundance of valuable technical and methodological information. We also haven't discussed the technological limitations of the various searching software. Free, public search engines (Google, Yahoo, etc...) are only able to return that material which is posted to the 'search-

able' web. However, lots of scientific material may be hidden in protected sites that aren't indexed. Moreover, the 'filter' on these sites can be fairly coarse, and while it may return good leads to papers, you'll also get a lot of trash that needs to be filtered by you. When we consider the more specific literature database searching tools (e.g., Web of Science), your searching success may also hinge upon which databases your university or agency subscribes to. For instance, the organization I belong to only purchases access to the last 5-10 years of published works. Other libraries may only buy certain databases that reflect the perceived research strengths of their university. Lastly, not all journals are catalogued by all literature databases, so even current material may not show up in your searches.

So...what's a student to do?

- Learn to search efficiently and effectively. Check out your library and see if they offer workshops in searching the scientific literature. Spending the time to learn some good strategies will save you time and headache later on. At the same time, get to know your library and how to navigate the stacks so you can find those old journals when the time comes.
- Be aware of where you're searching. The next time you log into your literature search tool, read the description of the database that you're searching in. What time period does it cover? What journals are indexed? Can you add other databases (or remove irrelevant ones) to focus your search?
- Read everything. As you go through papers, note which articles are being cited. Are these papers (especially the older ones) showing up when you search? If not, it may be time to refine your search terms and for a trip to the library to pull some old papers.
- If all else fails and you're still looking for old material the best place to go is an old entomologist. If you know of a researcher who has worked on your system in the past, it's worth asking if you can have a look through their

files. However, don't use this as a shortcut for your own literature review – get an appreciation of what's in the literature first, and then seek out someone with a bigger library.

Well GIG, I hope that helps. It is likely that as more and more material becomes available in digital form we will be able to search and access the bulk of the scientific literature online. However we're not there yet. Until that time, we still need to work on those old search skills.

Cheers

Buggy



Olivier Lalonde, MAPAQ

A not so well camouflaged *Phyllium* sp. (Phasmatodea: Phylliidae) from the Phillipines. This photo was awarded the 2<sup>nd</sup> price of the 2007 photo contest of the Entomological Society of Quebec.

## The student wing / L'aile étudiante



Aynsley Thielman

**H**ello! My name is Aynsley Thielman and I am the new Chair of the Student Affairs Committee for the Entomological Society of Canada. I am a PhD student at Brock University in St. Catharines, Ontario and my research involves the ecology and systematics of the mosquito genus *Anopheles* (Diptera: Culicidae) in Canada.

First, I would like to thank the outgoing Chairs of the Student Affairs Committee, Chris Borkent and Greg Smith, for representing the ESC students so well over the past three years. They did a fantastic job of organizing the Graduate Student Symposiums and Silent Auctions and initiated the Student Facebook group for entomology students across our great country to stay in touch. They also worked on updating the Directory of Entomology Education document (available on the ESC website), arranged for President's Prize competitors to receive the judge's sheets to learn how they can improve their oral and poster presentations, and kept us all informed of ESC affairs through the Student of Wing of the ESC Bulletin. Great job, Chris and Greg!

As the new Chair of the Student Affairs Committee, I am looking forward to representing the student members of the ESC. Governing Board meetings are generally held during the Annual Meetings in the Fall. If you have

**B**onjour! Mon nom est Aynsley Thielman et je suis la nouvelle présidente du comité des affaires étudiantes de la Société d'entomologie du Canada. Je suis étudiante au doctorat à Brock University, à St. Catharines en Ontario, et mon projet de recherche concerne l'écologie et la systématique des moustiques du genre *Anopheles* (Diptera : Culicidae) au Canada.

Tout d'abord, je voudrais remercier les présidents sortants du comité des affaires étudiantes, Chris Borkent et Greg Smith, pour avoir si bien représenté les étudiants de la SEC durant les trois dernières années. Ils ont fait un travail formidable en organisant les symposiums d'étudiants gradués et les enchères silencieuses et ont également créé la page étudiante sur Facebook afin de permettre aux étudiants en entomologie de notre grand pays de rester en contact. Ils ont également travaillé à la mise à jour du répertoire des formations en entomologie au Canada (disponible sur le site Internet de la SEC), ont permis aux étudiants participant au prix du président de recevoir les feuilles d'évaluations des juges afin de leur permettre d'améliorer leurs présentations, et nous ont tenu informés des affaires de la SEC par le biais de l'Aile étudiante dans le Bulletin de la SEC. Excellent boulot Chris et Greg!

En tant que nouvelle présidente du comité des affaires étudiantes, j'ai bien hâte de représenter les membres étudiants de la SEC. Les réunions du conseil d'administration se tiennent généralement durant la réunion annuelle en automne. Si vous avez des questions ou des sujets que vous aimeriez présenter au comité, vous pouvez me contacter à tout moment pour en discuter. Puisque mon rôle de présidente du comité des affaires étudiantes est d'agir en tant que lien entre les membres étudiants et la société, je recevrai toutes vos suggestions ou idées concernant les affaires étudiantes. Un des changements que j'ai déjà effectué est d'ajouter sur le site Internet un lien « Opportunités d'emplois/recherche » afin d'informer les étudiants sur les opportunités entomologiques. Si vous entendez parler d'une opportunité qui pourrait intéresser les étudi-

any concerns or issues you would like brought before the Board, please feel free to contact me anytime to discuss them. As my role as Chair of the Student Affairs Committee is to act as a liaison between the student members and the society, I welcome any suggestions or ideas you may have regarding student affairs and improving communication. One of the changes we've made already is to add a "Job Postings/Training Opportunities" link in the Student Affairs section of the ESC website to help keep students informed about entomological opportunities. If you know of any opportunities in which students might be interested that I have missed, please let me know so they can be added to the website. Also, if you or someone you know has recently completed a thesis, please let us know so we can be sure to include them in the Thesis Roundup section of the next ESC *Bulletin*.

I wish you all the best of luck with your research this spring and summer. Don't forget to keep checking the Student Affairs section of the ESC website for entomological activities and opportunities!

Sincerely,

Aynsley

ants, veuillez me le faire savoir afin que je l'ajoute sur le site Internet. Également, si vous connaissez quelqu'un qui a récemment terminé son doctorat ou sa maîtrise, faites-moi le savoir afin que je puisse inclure leur nom et le titre de leur thèse dans la section Foisonnement de thèses du *Bulletin* de la SEC.

Je vous souhaite à tous la meilleure chance avec vos recherches ce printemps et cet été. N'oubliez pas de consulter la section des affaires étudiantes du site Internet de la SEC afin d'y voir les activités et opportunités entomologiques!

Sincèrement,

Aynsley



Max Larivière

A reduviid bug looking at you.

## ESC Graduate Student Symposium 2009: Call for Submissions – Deadline extended

Graduate students are invited to present at the 2009 Graduate Student Symposium. The symposium will be held at the Joint Annual Meeting of the Entomological Societies of Canada and Manitoba, Winnipeg, Manitoba, 19 October 2009. The Graduate Student Symposium provides an opportunity for six graduate students who are finishing up their thesis to discuss their research in more detail by allowing them a longer time slot than the President's Prize or Regular Paper sessions.

As the goal of the symposium is to give a higher profile to graduate students finishing up their thesis, students must have either defended their thesis in the past year or be planning to defend within one year of the meeting. Presentations will be 25 minutes in length with an additional 5 minutes for questions. Papers that are included in the Graduate Student Symposium will not be eligible for the President's Prize. However, speakers may also submit a paper on a more specific topic to the President's Prize Competition. Eligible candidates that would like to be considered for the symposium should submit the following information **by 1 May 2009**:

- 1) **An expanded abstract** (250 words) describing the proposed presentation.
- 2) **A letter of support** from the principal supervisor that confirms the anticipated or actual date of graduation, and comments on your proposed presentation.

Submission of abstracts and letters of support for the graduate student symposium should be sent by email to: Aynsley Thielman ([athielman@brocku.ca](mailto:athielman@brocku.ca)).

The Department of Biology, University of Winnipeg and the Department of Entomology, University of Manitoba, will cover the costs of registration for the graduate student speakers at the symposium. In addition, the Joint Annual Meeting will provide each student symposium speaker with an honorarium of \$100. Unlike other presentations at the meeting, abstracts from the symposium are published in the ESC *Bulletin*, an open access publication, received by all ESC members and by over 300 libraries around the world.

I encourage all eligible students to apply for the Graduate Symposium this year. Supervisors, please encourage your students as well. Students who have been selected to speak will be contacted by 15 May 2009. If you have any questions, please feel free to contact me.

Aynsley Thielman  
ESC Student Affairs Committee, Chair  
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## Symposium des étudiants gradués de la SEC 2009: Invitation générale – date limite repoussée

Les étudiants gradués sont invités à présenter au Symposium des étudiants gradués de 2009. Le symposium aura lieu à la réunion annuelle conjointe des Sociétés d'entomologie du Canada et du Manitoba, qui aura lieu à Winnipeg, le 19 octobre 2009. Le Symposium des étudiants gradués donne une opportunité à six étudiants gradués qui terminent leur thèse de discuter de leur recherche en plus de détails en leur allouant une période de temps supérieure à celle donnée aux présentations régulières ou du Prix du président. Puisque le but du symposium est de donner plus de visibilité aux étudiants qui terminent leur thèse, les étudiants doivent soit avoir soutenu leur thèse au cours de la dernière année ou planifier de le faire durant les douze mois suivant la réunion. Les présentations seront de 25 minutes et suivies d'une période de questions de 5 minutes. Les présentations incluses dans le Symposium des étudiants gradués ne seront pas éligibles pour le Prix du président. Toutefois, les présentateurs peuvent aussi soumettre un résumé différent pour la compétition du Prix du président. Les candidats éligibles qui voudraient être considérés pour le symposium doivent soumettre les informations suivantes au plus tard le **1<sup>er</sup> mai 2009** :

1) **Un résumé détaillé** (250 mots) décrivant la présentation proposée.

2) **Une lettre de soutien** de votre directeur de thèse confirmant la date prévue ou réelle de graduation, et commentant la présentation proposée.

Les résumés et les lettres de soutien pour le Symposium des étudiants gradués doivent être envoyés par courriel à : Aynsley Thielman ([athielman@brocku.ca](mailto:athielman@brocku.ca)).

Le Département de biologie de l'Université de Winnipeg et le Département d'entomologie de l'Université du Manitoba couvriront les frais d'inscription pour les présentateurs du symposium. En plus, la réunion conjointe récompensera les présentateurs du symposium d'un montant de 100\$. Contrairement à ceux des autres présentations de la réunion, les résumés du symposium sont publiés dans le *Bulletin* de la SEC, qui est une publication accessible à tous, reçue par tous les membres de la SEC et par plus de 300 bibliothèques à travers le monde.

J'encourage tous les étudiants éligibles à appliquer pour le symposium de cette année. Directeurs de recherche, prière d'encourager vos étudiants. Les étudiants sélectionnés seront contactés avant le 15 mai 2009. Veuillez me contacter pour toute question.

Aynsley Thielman

Comité des affaires étudiantes, Présidente

Tél: 905-688-5550 x3408

Courriel: [athielman@brocku.ca](mailto:athielman@brocku.ca)

## Theses Roundup / Un foisonnement de thèses

**Bouchard, Anne-Marie.** MSc, décembre 2008. *Potential d'infestation des populations sauvages de lis indigènes* (*Lilium canadense* et *L. philadelphicum*) par le criocère du lis (*Lilio-ceris lili*). Directeurs de thèse: J.N. McNeil (Université of Western Ontario), Jacques Brodeur (Université de Montréal). [annemariebouchard@hotmail.com](mailto:annemariebouchard@hotmail.com)

**Camara, Aïssata.** PhD, janvier 2009. *Lutte contre Sitophilus oryzae L. (Coleoptera : Curculionidae) et Tribolium castaneum Herbst (Coleoptera : Tenebrinidae) dans les stocks de riz par la technique d'étuvage traditionnelle pratiquée en Basse-Guinée et l'utilisation des huiles essentielles végétales.* Directeurs de thèse : Michel Raymond (Université du Québec à Montréal), Charles Vincent (Agriculture et agro-alimentaire Canada, Saint-Jean-sur-Richelieu). [mstell2002@yahoo.fr](mailto:mstell2002@yahoo.fr)

**Caswell, Wade.** MSc, August 2008. *Reproductive biology and nectary structure of Lythrum in central Saskatchewan.* Supervisor: Arthur Davis, University of Saskatchewan. [wade.caswell@usask.ca](mailto:wade.caswell@usask.ca)

**Charbonneau, Carole.** Maîtrise en sciences de l'environnement, janvier 2007. *Effets in vivo et in vitro de l'azadirachtine et de molécules époxy-alcool simples sur coléoptères, diptères et lépidoptères.* Directeur : Guy Charpentier (UQTR).

**Charbonneau, Daniel.** MSc, 2008. *Influence des caractéristiques des milieux forestiers sur les dynamiques de défoliation par la livrée des forêts* (*Malacosoma disstria Hübner*) en Abitibi lors de l'épidémie 1999-2002. Directeurs de thèse: François Lorenzetti, Yves Mauffette (Université du Québec à Montréal). [charbonneau.daniel@courrier.uqam.ca](mailto:charbonneau.daniel@courrier.uqam.ca)

**Déchêne, Andrea.** MSc, winter 2008. *The effects of forest harvesting on oribatid mite assemblages in Quebec's boreal mixedwood.* Supervisor: Chris Buddle (McGill University). [andredechene@gmail.com](mailto:andredechene@gmail.com).

**Gosselin, Marie-Ève.** MSc, septembre 2008. *Potential du spinosad et de Beauveria bassiana comme agents de lutte contre le ver gris* (*Agrotis ipsilon*). Directeurs de thèse: Guy Bélair (Agriculture et agro-alimentaire Canada, Saint-Jean-sur-Richelieu), Jacques Brodeur (Université de Montréal). [mgosselin80@hotmail.com](mailto:mgosselin80@hotmail.com)

**Giannoulis, Paschalis.** PhD, 2008. *Interactions between larval Malacosoma disstria (Lepidoptera: Lasiocampidae) hemolymph and selected antigens.* Supervisor: Gary Dunphy (McGill University). [paschalis.giannoulis@mail.mcgill.ca](mailto:paschalis.giannoulis@mail.mcgill.ca)

**Flaherty, Leah.** MScF, December 2007. *Effect of plant module size and fundatrix and gallicolae density on the performance of Adelges abietis.* Supervisors: Dan Quiring and Krista Ryall, University of New Brunswick. [r57ex@unb.ca](mailto:r57ex@unb.ca)

**Fry, Heidi.** MSc, October 2007. *Applying the intra-tree distribution and foraging behaviour of the elm spanworm, Ennomos subsignaria, on mature sycamore maple to management practices during an urban outbreak.* Supervisors: Dan Quiring and Krista Ryall, University of New Brunswick. [drownviolet@hotmail.com](mailto:drownviolet@hotmail.com)

**Gaudreau, Christine.** Maîtrise en sciences de l'environnement, septembre 2005. *Identification moléculaire des simulies (Diptera : Simuliidae) du Québec.* Directeur : Guy Charpentier (UQTR).

**Meilleur, Lise.** Maîtrise en sciences de l'environnement, septembre 2007. *Potential synergique entre différents larvicides bactériologiques sur les larves de simulies.* Directeur : Guy Charpentier (UQTR).

**Nelson, Karen, L.** MSc, October 2008. *Assessment of changes in soil health throughout organic potato (*Solanum tuberosum* L. ) rotation sequences and potential use of the bioindicator, *Fol-somia candida*.* Supervisors: Drs Derek Lynch and Gilles Boiteau, Nova Scotia Agricultural

College, Dalhousie University. [klnelson@nsac.ca](mailto:klnelson@nsac.ca)

**Nguyen, Thi Thuy An.** PhD, 2008. *Étude des réponses des insectes aux stress environnementaux par une approche protéomique*. Directeur de thèse : Conrad Cloutier (Université Laval). [thi-thuy-an.nguyen.1@ulaval.ca](mailto:thi-thuy-an.nguyen.1@ulaval.ca)

**Peso, Marianne.** MSc, 2008. *Nestmate recognition in the large carpenter bee, Xylocopa virginica*. Supervisor: Miriam Richards, Brock University. [mariannepeso@hotmail.com](mailto:mariannepeso@hotmail.com)

**Pinault, Lauren.** MScF, sept. 2007. *Population ecology and management of the pale-winged gray moth, Iridopsis ephyraria wlk. (Lepidoptera: Geometridae)*. Supervisors: Dan Quiring and Graham Thurston, University of New Brunswick. [lauren.pinault@gmail.com](mailto:lauren.pinault@gmail.com)

**Prager, Sean.** PhD, 2008. *Behaviour and Life History of a Large Carpenter Bee (Xylocopa virginica) in the Northern Extent of its Range*. Supervisor: Fiona Hunter, Brock University. [seanprager@gmail.com](mailto:seanprager@gmail.com)

**Rivera, Julio.** MSc, fall 2008. *Utility of the cytochrome oxidase I gene (COI) for species identification and Phylogeographic analysis in blackflies (Diptera: Simuliidae)*. Supervisor: Dr. Doug Currie, University of Toronto (Royal Ontario Museum). [uniramia@hotmail.com](mailto:uniramia@hotmail.com)

**St-Onge, Mylène.** Maîtrise en sciences de l'environnement, septembre 2007. *Étude écologique et moléculaire des mermithides parasites de mouches noires (Diptera : Simuliidae) du Québec*. Directeur : Guy Charpentier (UQTR).

**Sylvain, Zachary.** MSc, fall 2007. *Oribatid mite (Acari: Oribatida) assemblage response to changes in litter depth and stand type in a beech-maple forest in southwestern Quebec*. Supervisor: Chris Buddle (McGill University). [zsylvain@nrel.colostate.edu](mailto:zsylvain@nrel.colostate.edu)

**Tremblay, Jacinthe.** (décembre 2008). *La tordeuse à bandes obliques dans le Sud du Québec: Abondance des populations, parasitoïdes associés et influence de divers facteurs biotiques et abiotiques*. Directeurs de thèse: Éric Lucas (Université du Québec à Montréal), Jacques Brodeur (Université de Montréal). [smartou2001@yahoo.fr](mailto:smartou2001@yahoo.fr)

**Walter, Ndonkeu Tita.** PhD, 2008. *Effect of the axenic nematode Steinernema carpocapsae on the immune responses of two lepidopteran larvae, Galleria mellonella and Malacosoma disstria*. Supervisor: Gary Dunphy (McGill University).

If you or someone you know has been overlooked, please let me know and I will make sure to include them in the next Roundup. We are looking for volunteers at each university that can help provide us with information on recent graduates from their institutions. If you are interested in helping us with this, or know someone (professor or student) else that might be, please let me know.

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 Tel: 905-688-5550 x3408

## 2008 scholarships and awards

### The Biological Survey of Canada Award

In 2008 we had 14 applicants for the Biological Survey of Canada Award. The winner is **Marla Schwarzfeld** of the University of Alberta. Marla is a MSc student who plans to transfer to a Ph.D. program soon. She works on ichneumonid parasitoids and is doing a comparative community study at the Ecosystem Management Emulating Natural Disturbance (EMEND) research site in Alberta. The communities of parasitoids that Marla will compare are from uncut, partial-cut and clearcut forest treatments. She plans to make user-friendly, interactive keys to the ichneumonids as her work continues. After transferring to a Ph.D. program, Marla plans to use molecular and morphological techniques to analyze the genus *Ophion* in the family Ichneumonidae in Alberta.



Rick West

Marla Schwarzfeld with Andrew Smith.

### The John Borden Scholarship

The winner of the John Borden Scholarship in 2008 is **Melanie Hart** from Simon Fraser University. Melanie is studying sound communication in the peach twig borer moth *Anarsia lineatella*. She has shown for the first time that sound communication is used by this species. By identifying sound and pheromone communication in the reproductive biology of the peach twig borer, Melanie has been able to devise an Integrated Pest Management strategy that has been patented. This work is an excellent example of the application of insect behaviour to IPM.

### The Ed Becker Award

The Ed Becker Award for travel to the ESC meeting went to **Norman Lee** from the University of Toronto. Norman presented a talk on his research titled “Misdirected phonotaxis to a phantom source: responses to multiple sound sources in the acoustic parasitoid fly *Ormia ochracea*.”

### The ESC post-graduate awards

**Amanda Brown** from UBC is the winner of the Masters level ESC post-graduate award. Amanda is working in organic apple orchards in the Similkameen Valley of British Columbia to develop an integrated pest management strategy for the Rosy Apple Aphid. The densities of this introduced pest of apples vary greatly from orchard to orchard and Amanda is working with orchardists to discover the cause of this variation in aphid density. In addition, Amanda is attempting to predict when is the best time in the autumn for spraying reproductive aphids that are returning to the apple trees. She is testing several types of sprays that are acceptable to organic farming to reduce the aphid populations before the next spring.



Rick West

Amanda Brown with Paul Fields.

The Ph.D. level ESC post-graduate award went to **Michelle Franklin**, also of UBC. Michelle has been studying the development of resistance to *Bt* in green house populations of cabbage loopers. She has found that heavy use of *Bt* followed by successful overwintering of moths leads to the development of *Bt* resistance and that resistant moths can move among greenhouses carrying the genes for resistance with them. Michelle is also studying the genetic structure of looper populations in greenhouse and field populations from California to British Columbia.



Michelle Franklin with Paul Fields.

Rick West

### President's Prize winners of the 2008 JAM

The President's Prize for best oral presentations at the Joint Annual Meeting of the ESC and ESO (October 2008) were awarded to:

•**Matthew Pyper** (University of Toronto): "Aggregated retention patches and beetle conservation in the mixed wood forests of Alberta, Canada", co-authored with John Spence and David Langor.

•**Jason Dombroskie** (University of Alberta): "Quantifying gestalt: towards an interactive matrix-based key to Canadian lepidopteran subfamilies".

•**Michelle Franklin** (University of BC): "Influence of local and long-distance dispersal in determining *Bt* resistance in cabbage looper populations: a molecular analysis", co-authored with Judy Myers.

The President's Prize for best poster was awarded to **Jennifer Perry** (University of Toronto): "Correlated evolution of male and female morphology across populations of water striders (*Gerris* spp.)", co-authored with Locke Rowe.



President's Prize winners: Jennifer Perry, Michelle Franklin, Matthew Pyper, Jason Dombroskie, flanked by Rebecca Hallett and Paul Fields.

Rick West

Congratulations to these award winners and thanks to all other applicants.

Judy Myers, Chair  
ESC Scholarship Committee.



# Joint Annual Meeting / Réunion conjointe

## JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA AND THE ENTOMOLOGICAL SOCIETY OF MANITOBA

Hotel Fort Garry, Winnipeg, Manitoba

Noon Sunday 18 October – Noon Wednesday 21 October 2009

On behalf of the Entomological Societies of Manitoba and Canada we are pleased to invite you to attend the 2009 Joint Annual Meeting. The meeting will be held at the historic Hotel Fort Garry, a full service hotel that is a short walk from The Forks Markets and Entertainment Complex located in downtown Winnipeg. The hotel is approximately 20 minutes by cab from the airport and 5 minutes by foot from the train station.

We encourage you to stay at the Hotel to be close to the meeting location and to help keep our meeting costs down. The local organizing committee has negotiated an excellent guestroom rate: \$129 per night plus taxes, double occupancy. Each additional adult is \$10 (maximum two additional adults).

Registration rates remain unchanged from 2008 with early registration being the wisest choice. Rates are \$265/365 (early/late) for regular members, \$100/160 for student and retired members. One day registration and guest tickets for the banquet are also available.

### Program Highlights

#### **Plenary symposium: Climate Change: from Geology to Ecology**

- *History of glacial Lake Agassiz and climate since the last Ice Age, as reflected in lake sediments*  
Dr James Teller, University of Manitoba
- *Evolution and Climate Change: potentials and pitfalls*  
Dr Camille Parmesan, University of Texas
- *Future shock: invasive insects, climate change, and Canada's forest ecosystems*  
Dr Shelley Hunt, University of Guelph

#### **Symposia:**

- *Apiculture: Bee - Virus Interactions*
- *Arthropod Host-symbiont Relationships: Diversity, Distribution and Ecology*
- *Biological Survey of Canada Symposium*
- *Canadian Forum on Biological Control Symposium: Putting the 'I' Back Into IPM – How To Integrate Biological Control Effectively In IPM Programs*
- *Entomological Issues in Potato Production*
- *Graduate Student Symposium*
- *Pollination Biology*
- *Protecting Urban Forests and Structures from Insects*
- *Wood to Soil: the Role of Arthropods in Forest Nutrient Cycling*

#### **Heritage lecture: History of Beekeeping Research in Western Canada.**

Donald Dixon

#### **Student paper competition (presented paper and poster sessions)**

##### **Poster session**

##### **Presented papers sessions**

	<b>Important Dates</b>
31 March 2009	<i>Registration website opens</i>
01 June 2009	<i>Paper submission website opens</i>
15 July 2009	<i>Deadline for paper submissions</i>
15 August 2009	<i>Early registration deadline</i>
15 September 2009	<i>Hotel booking deadline</i>

Entomological Societies of Canada & Manitoba

**ES<sup>C</sup>M<sup>2009</sup>**  
Winnipeg, 18-21 October

For further information, see  
Or contact the meeting chair at

<http://home.cc.umanitoba.ca/~fieldspg/ESC2009.html>  
[Brent.Elliott@gov.mb.ca](mailto:Brent.Elliott@gov.mb.ca)

## RÉUNION CONJOINTE ANNUELLE DE LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA ET LA SOCIÉTÉ D'ENTOMOLOGIE DU MANITOBA

Hôtel Fort Garry, Winnipeg, Manitoba

Dimanche 18 octobre midi – mercredi 21 octobre midi 2009

Au nom des Sociétés d'entomologie du Manitoba et du Canada, nous avons le plaisir de vous inviter à assister à la réunion annuelle conjointe de 2009. La réunion se tiendra sur le site historique de l'hôtel Fort Garry, un hôtel situé à une courte distance de marche du marché Forks et du complexe de divertissement situés au centre-ville de Winnipeg. L'hôtel se situe à environ 20 minutes en taxi de l'aéroport, et 5 minutes à pied de la gare de train.

Nous vous encourageons à loger à l'hôtel afin d'être à proximité de la réunion et de nous aider à maintenir des coûts minimaux. Le comité organisateur a su négocier un excellent prix: 129\$ (+ tx) par chambre en occupation double. Des frais de 10\$ s'ajoutent pour chaque adulte supplémentaire (maximum de 2 adultes supplémentaires).

Les frais d'inscription sont inchangés depuis 2008, les inscriptions hâtives étant le meilleur choix. Les taux sont de 265\$/365\$ (hâtive/tardive) pour les membres réguliers, 100\$/160\$ pour les étudiants et les membres retraités. Des inscriptions d'une journée et des billets de banquet pour les invités sont également disponibles.

### Aperçu du programme

#### Session plénière: *Changements climatiques : de la géologie à l'écologie*

- *Histoire du lac glaciaire Agassiz et du climat depuis la dernière ère glaciaire, montrée par les sédiments*  
Dr James Teller, University of Manitoba
- *Évolution et changements climatiques: potentiel et pièges*  
Dr Camille Parmesan, University of Texas
- *Choc futur: insectes invasifs, changements climatiques et les écosystèmes forestiers du Canada*  
Dr Shelley Hunt, University of Guelph

#### Symposia:

- *Apiculture: interactions abeilles - virus*
- *Relations arthropode hôte – symbionte: diversité, distribution et écologie*
- *Symposium de la Commission biologique du Canada*
- *Symposium du Forum canadien sur la lutte biologique : comment intégrer efficacement la lutte biologique dans les programmes de lutte intégrée*
- *Problèmes entomologiques dans la production de la pomme de terre*
- *Symposium des étudiants gradués*
- *Biologie de la pollinisation*
- *Protéger les forêts et structures urbaines contre les insectes*
- *Du bois au sol: le rôle des arthropodes dans le cycle des nutriments dans les forêts*

**Allocution du patrimoine: Histoire de la recherche en apiculture dans l'Ouest du Canada.**

Donald Dixon

#### Compétition étudiante (présentations orales et affiches)

##### Session d'affiches

##### Session de présentations orales

#### Dates importantes

31 mars 2009 *Début des inscriptions en ligne*  
 01 juin 2009 *Début des soumissions en ligne*  
 15 juillet 2009 *Date limite pour les soumissions*  
 15 août 2009 *Date limite des inscriptions hâtives*  
 15 septembre 2009 *Date limite de réservation à l'hôtel*

Entomological Societies of Canada & Manitoba

**ESM<sup>2009</sup>**  
 Winnipeg, 18-21 October

Pour plus d'information, visitez :

<http://home.cc.umanitoba.ca/~fieldspg/ESC2009.html>

Ou contactez le président du comité :

[Brent.Elliott@gov.mb.ca](mailto:Brent.Elliott@gov.mb.ca)

# Application for membership (new members only) Demande d'adhésion (nouveaux membres seulement)

BIN: 10730 6003

## ENTOMOLOGICAL SOCIETY OF CANADA

Tel: 613-725-2619  
Fax: 613-725-9349

393 WINSTON AVENUE, OTTAWA, ON K2A 1Y8

entsoc.can@bellnet.ca  
www.esc-sec.ca

**2009 MEMBERSHIP #**  (= online password)

Name & Address (please print)

(CORRECTIONS, please)

\_\_\_\_\_  
telephone

\_\_\_\_\_  
fax

\_\_\_\_\_  
email

Dans le futur, je préfère recevoir ma correspondance en français

*Membership is a personal affiliation and publications are the personal property of the individual member. Membership includes online access to The Canadian Entomologist and Bulletin, print versions include additional charges to cover postage.*

\* In Canada: fees include 13% HST for New Brunswick, Newfoundland-Labrador and Nova Scotia or 5% GST for rest of country

Membership	<i>The Canadian Entomologist</i>	*Canada (see above) (GST) or (HST)		USA	International	Fees
Regular (select either online or print)	online	\$ 84.00	\$ 90.40	\$ 100.00	\$ 100.00	\$
	print	\$ 111.00	\$ 119.00	\$ 155.00	\$ 179.00 surface \$ 228.00 air	\$
Student (select either online, print or no access)	online	\$ 42.00	\$ 45.20	\$ 45.00	\$ 45.00	\$
	print	\$ 69.00	\$ 73.45	\$ 100.00	\$ 124.00 surface \$ 173.00 air	\$
	no access	\$ 21.00	\$ 22.60	\$ 25.00	\$ 25.00	\$
Emeritus (select either online or print)	online	\$ FREE	\$ FREE	\$ FREE	\$ FREE	\$ FREE
	print	\$ 27.00	\$ 45.00	\$ 55.00	\$ 79.00 surface \$ 128.00 air	\$

Bulletin: Online \$ FREE

Bulletin: Print – \*Canada \$ 8.50 (GST) or \$ 9.00 (HST) / USA \$ 12.00 / International \$ 16.00 \$ \_\_\_\_\_

Endorsement of student status..... (Professor to sign here.)

**LATE RENEWAL FEE** (AFTER JANUARY 31, 2009, ADD \$10.00) \$ \_\_\_\_\_

**DONATION TO THE SCHOLARSHIP FUND** (receipt for income tax purposes in Canada issued)

For: Annual Scholarship Fund  or John Borden Fund  or Keith Kevan Fund  or Biological Fund  \$ \_\_\_\_\_  
Name may be listed as a contributor to Scholarship Fund in Bulletin? Yes  No

**ANNUAL REVIEW (postage incl.)**

Entomology, Vol. 54 (Jan. 2009)..... Cdn \$82.00 (GST\*) or \$88.00 (HST\*) \$ \_\_\_\_\_

Ecology, Evolution & Systematics, Vol. 40 (Dec. 2009) ...Cdn \$82.00 (GST\*) or \$88.00 (HST\*) \$ \_\_\_\_\_

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I agree to have my name and contact information appear on the ESC Web Membership Directory (directory will be password protected and accessible only by ESC members on ESC Web site). Yes...  No...

Cheque/money order payable in Canadian or US Funds as detailed above, through Cdn or US Institution to the Entomological Society of Canada.  
**Credit Card payments will be processed using the Canadian dollar amounts indicated above for each item.**

MASTERCARD  AMEX  or VISA

# ..... EXP. DATE ...../..... SIGNATURE.....

## **1<sup>st</sup> International Entomophagous Insects Conference**

University of Minnesota campus, Minneapolis, MN, 27-31 July 2009

[www.cce.umn.edu/entomophagous](http://www.cce.umn.edu/entomophagous)

## **Royal Entomological Society International Symposium on Insect, Infection and Immunity: Evolution, Ecology and Mechanisms**

Sheffield, UK, 15-17 July 2009

<http://www.royensoc.co.uk>

## **Joint Meeting of the Entomological Societies of Canada and Manitoba**

Winnipeg, Manitoba, 18-21 October 2009

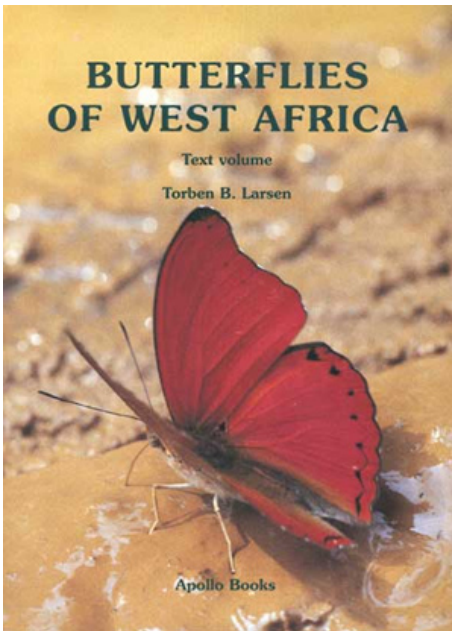
<http://home.cc.umanitoba.ca/~fieldspg/ESC2009.html>

## **57<sup>th</sup> Annual Meeting of the Entomological Society of America**

Indianapolis, Indiana, 13-16 December 2009

<http://www.entsoc.org/am/fm/2009/index.htm>





*Butterflies of West Africa, vol.1-2.* Torben B. Larsen. 2005. Apollo Books (In North America, available from International Specialized Book Services, Inc., Portland, Oregon [www.isbs.com](http://www.isbs.com)). 900 pages including 130 colour plates. (Hardcover) \$256.00 US. ISBN 87-88757-43-9

*Butterflies of West Africa* by Torben Larsen is a monumental and exceptional work. This two volume set stands as the definitive taxonomic treatment currently existing for butterflies of western West Africa and will undoubtedly continue in this respect far into the future. Its publication has already had considerable impact judging by the plethora of recent interest and activity in the region.

Dr. Larsen "...attempts to summarize all that is known about the nearly 1500 butterfly species known from West Africa, the fifteen countries that stretch from Senegal and Mauritania on the Atlantic to Nigeria and Niger in the east..." and bordered by the Sahara Desert in the north. Included are the nearly 400 species that have been added to the checklist since

Carcasson's African Butterflies (Ackery et al. 1995) and 18 newly described species. Over 10 years of research went into making this book, including substantial in-country field collecting, an exhaustive review of existing literature, broad-scale examination of materials in museums and private collections, and extensive consultation with those working within the region and discipline.

The text volume provides a lucid, insightful introductory section that discusses evolution, biogeography, and conservation of West African butterflies and includes 12 informative data tables. The bulk of this 600 page volume consists of species accounts well-organized into subsections on identification, taxonomic notes, early stages, habits, and distributions. Illustrated identification aids are largely restricted to line drawings of genitalia for a number of difficult-to-identify species. This systematic section also includes a helpful gazetteer and glossary of technical terms, and an informative table of global range distributions for all Afrotropical genera. This table additionally summarizes the taxonomic framework used by the author. The newly described species and summary of Dr. Larsen's suggested taxonomic changes are added as Appendices. The plate volume consists of 125 full-color plates, each of which has a facing, cross-reference text page. Plates depict 3900 individual butterfly photos shown at actual size. Nearly all 1500 species are represented, the large majority by multiple photos that show dorsal and ventral views and sexual or seasonal polymorphism. The unique number assigned to each species allows for easy cross-referencing between the text and plate volumes. Both volumes end with an index of species names.

The author has made a valiant effort to produce an authoritative taxonomic treatment that also could be used as an on-the-ground butterfly identification guide. The decision to split the material into separate text and plate volumes resulted from polling of likely users who thought two volumes would facilitate field activities. But given the sheer magnitude of the taxonomic coverage and need to balance

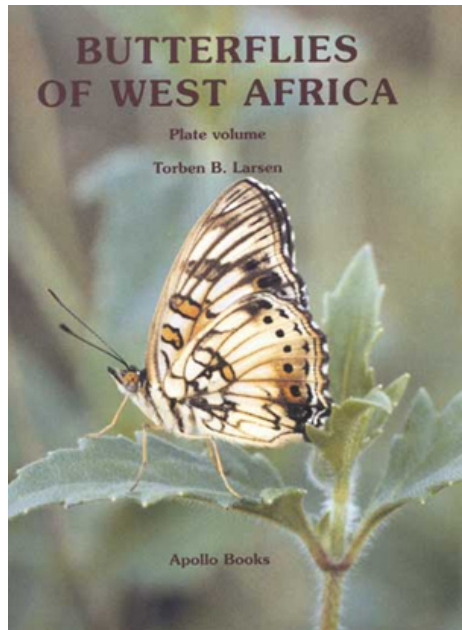


production costs with affordability, it's not surprising that its usefulness in this regard is restricted. The volumes are relatively large and heavy, the binding doesn't seem to hold up well under serious use, many photos aren't true to color, and intraspecific variation, which can cause significant confusion, could not be adequately represented.

*Butterflies of West Africa* is a must have for all professional Lepidopterists and serious avocational experts and should be on the library shelves of all major museums and research institutions. General enthusiasts of tropical butterflies and their biogeography will also want to add it to their collection. The author has a neat writing style that interweaves humor and anecdotal accounts with well-researched natural history and scientific information. Many enjoyable hours will be spent perusing the vast wealth of information contained in these two volumes and dreaming of butterfly field studies in West Africa.

Ackerly, P.R., Smith, C.R., and Vane-Wright, R.I. 1995. Carcasson's African Butterflies: An Annotated Catalogue of the Papilionoidea and Hesperioidea of the Afrotropical Region. CSIRO. Australia.

Janice Bossart  
Department of Biological Sciences  
Southeastern Louisiana University  
Hammond, LA  
December 28, 2008




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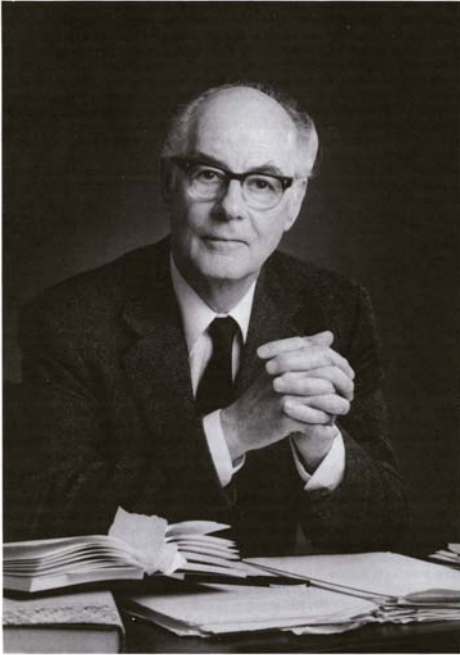
### Books available for review:

*The Encyclopedia of Entomology* (4 volumes).  
Capinera, J. L. (ed.). 2008. Springer, New  
York, NJ.

Please send correspondence regarding book reviews to the Chair of the Publications Committee.

Kenna MacKenzie, Chair  
ESC Publications Committee  
Agriculture and Agri-Food Canada  
32 Main St.  
Kentville, NS B4N 1J5 Canada  
Tel: (902) 679-5731 Fax: (902) 679-2311  
E-mail: [mackenziek@agr.gc.ca](mailto:mackenziek@agr.gc.ca)





Schiffer Photography Ltd.

### William Wellington 1920-2008

**D**r. William (Bill) Wellington passed away peacefully on November 25, 2008, at the age of 88, in his birth city of Vancouver, British Columbia, Canada. Bill was a respected and honoured entomologist, zoologist and biometeorologist. He received his Bachelor's degree in Honours Zoology at the University of British Columbia during World War II. His interest in insects was sparked and mentored by UBC Professor George J. Spencer, who instructed his students to explore the biology and behaviour of every organism they studied. After graduation, Bill joined the Canadian Meteorological Service, where he studied synoptic and dynamic meteorology to become, in 1942, a forecaster for navigational training schools of the Royal Canadian Air Force. During his tenure with the

Met. Service, he spent hours in an upper-air calibration laboratory in Ontario, checking the accuracy of air-temperature gauges used on aircraft flying to Europe. On summer evenings, he was often the target of black flies (Simuliidae) and, as a retaliatory measure, released several of them into the calibration lab at conditions equivalent to 10,000 metres of altitude. The flies survived, and Bill's interest in insect responses to high-altitude conditions and transport in the upper atmosphere was piqued. His experiments led to a Master's degree and ten papers, including one in *Nature* and a series of four on conditions governing insect distribution in the free atmosphere, published in *The Canadian Entomologist*.

At the end of World War II, Bill left the Met. Service and, at the invitation of Professor Carl Atwood, began a doctorate in entomology at the University of Toronto. Bill's doctoral work on the federal-provincial spruce budworm project at the Canada Agriculture Forest Insect Laboratory in Sault Ste. Marie led to a thesis on behaviour of spruce budworm larvae in response to meteorological variables and to a series of papers that included another in *Nature*, this one on temperature measurements in ecological entomology. During his tenure at Sault Ste. Marie, Bill generated new insights into the cascading influences of large- and small-scale weather phenomena on insect movement, behaviour and survival. He and colleagues Walt Henson and Ron Stark demonstrated that polar continental air could cause catastrophic winter mortality of lodgepole needle miner in the Rocky Mountains. Bill studied orientation and movement of insects in response to polarized light (published in *Nature*). He became known for his generous collaborative and mentoring spirit. Henson and Stark wrote that everyone who worked closely with him "experienced great and lasting changes in their habits of thought and methods of investigation", and that "his enthusiasm, his way of thinking, his open-mindedness, and his intellectual generosity always leave their mark" (*Memoir of the Entomological Society of Canada* #146).

Bill's career took him to Victoria, British Columbia, to lead the bioclimatological unit in forest biology from 1953 to 1968; to the University of Toronto, as professor of ecology, from 1968 to 1970; and back to the University of British Columbia from 1970 until 1988. At UBC, he was Director of the Institute of Resource Ecology from 1973 to 1979. Honours along the way included: Gold Medal for Outstanding Achievement in Canadian Entomology (ESC, 1968); Award for Outstanding Achievement in Biometeorology (American Meteorological Society, 1969); C.J. Woodworth Award for Outstanding Scientific Achievement (Entomological Society of America, 1979); Undergraduate Professor of the Year (Agriculture, UBC, 1978); Killam Senior Research Fellow (UBC, 1980); Professor Emeritus (UBC, 1986 -); and Fellowship in the ESC, the Explorer's Club and the Royal Society of Canada. He was especially proud of being in the Explorer's Club with all his boyhood heroes.

In 1988, Bill's colleagues and students honoured him with the publication of *Memoir #146* (ESC), "*Paths from a Viewpoint: The Wellington Festschrift on Insect Ecology*". The following are excerpts from that Memoir:

"I believe that the stature of Wellington in ecology will continue to grow for many years, as the real significance of [his] papers becomes more widely appreciated and the work becomes incorporated in popular textbooks." (Sir Richard Southwood)

"He turns old and tired problems into fresh intellectual challenges. I know of no one who so powerfully combines theory, deep knowledge and stunning revelations. His is a truly original mind." (C.S. Holling)

Bill was a gifted illustrator. He used this gift to great effect in lectures, switching the chalk from his right hand, where it had been writing words, to his left, which he used for drawing.

Here are several tributes from former students and colleagues.

"Bill Wellington taught that chance favoured the mind prepared with the deepest powers of

observation, that no detail was inconsequential or less beautiful, and that there were no liabilities that were not actually opportunities of great advantage ..." (C.D. Rollo)

"I remember Bill as a very kind, gentle man who, when he had an interesting point to make, did so with a wonderful subtle smile and twinkling eyes. And he did the same when someone else was making an interesting point. I remember when I gave a seminar on pattern, process, and scale in Bill's graduate class on weather. It gave me a real boost to see my professor at the back of the room, grinning, and nodding, through the seminar! He really enjoyed the play of ideas." (David A. Raworth)

"Bill Wellington was a very generous, compassionate and insightful human being, who encouraged me to enter the graduate program and study my favourite insect, the honey bee. In the summer of 1976, he actually invited me to carry out part of my field work in their magnificent garden on Adera St in Kerrisdale. The family took the presence of a beehive completely in their stride; since then, they have always made me feel welcome, for which I am deeply grateful. Of course, all of Bill's students were blessed with a wonderful "mother hen" in disguise, who kept us all on track with various academic deadlines and away from any potential pitfalls." (Daniela Bates (Cmiralova))

"Bill Wellington is perhaps best known in population circles for his work on the cyclic dynamics of tent caterpillars. His most cited paper, 84 times, is on maternal influences on tent caterpillar larvae (*The Canadian Entomologist* 1965). Earlier papers on tent caterpillars that precede Citation Index are likely to have received even more citations. Bill's contribution was to recognize that both the quality and quantity of caterpillars change over the population cycles. This behavioural and physiological variation can strongly influence the impact that the environment has on insects and therefore, counting numbers is not sufficient for understanding population cycles. His strong message was to keep the insect in insect ecology." (Judith Myers)

“Bill was probably my most important mentor. What a wonderful supportive supervisor he was – even when he gave you bad news, it felt positive. I was fortunate to stay in Vancouver and see Bill and Margret from time to time. He was always interested in my career, offering encouragement and unfailing confidence in my abilities. At the christening of our second daughter, Bill shared an analogy that he said could only be appreciated after the birth of a second child. Humans, he observed, had not evolved much beyond the salmon; they reproduced and then they died. With humans it just took longer. Besides enjoying this characteristic and distinctive wry humor, I could truly empathize with salmon at that point.” (Deborah Henderson)

Bill will be remembered by his wife Margret (nee Reiss), daughter Katherine (Roy) Lepik, son Stephen (Cheryl) Wellington, grandchildren Veronica and Matthew, brother-in-law Frank (Nell) Reiss, niece Jennifer (Peter) and their children Braeden, Evan and Joel as a loving husband, father, uncle and grandfather. He had a penchant for teaching through storytelling and annual pilgrimages to Banff during the summer. His legacy includes imparting a lasting appreciation for the power of the spoken and written word, the value of careful observation and attention to detail, an enjoyment of history, the importance of hugs, and the delight of Monty Python.

*Obituary prepared by Katherine Lepik, Stephen Wellington, Margret Wellington and Sheila Fitzpatrick.*

**List of puns dedicated to Alwyn Ewen**  
(presented by Robin Leech)

Al Ewen died on 25 September 2008, and an obituary was written in the December issue of the *Bulletin*. Al was a lover of puns.

- A Good Pun Is Its Own Reward
- A pessimist’s blood type is always b-negative.
- Practice safe eating – always use condiments.
- A shotgun wedding is a case of wife or death.
- I used to work in a blanket factory, but it folded.
- A hangover is the wrath of grapes.
- Is a book voyeurism a peeping tome?
- Sea captains don’t like crew cuts.
- Does the name Pavlov ring a bell?
- ‘Khaki’ is what you need to start a car in Boston.



Alicia Leroux



### 59<sup>th</sup> Annual General and Governing Board Meetings

The Annual General Meeting of the Entomological Society of Canada will be held at Fort Garry Hotel, Winnipeg Manitoba on Tuesday, 20 October 2009, 17:00-17:45. The Governing Board Meeting will be held at the same location on Saturday, 17 October 2009 from 8:30 to 17:00. Matters for consideration at either of the above meetings should be sent to Annabelle Firlej, Secretary of the ESC.

### 59<sup>e</sup> Assemblée générale annuelle et la réunion du conseil d'administration

L'assemblée générale annuelle de la Société d'entomologie du Canada aura lieu à l'Hôtel Fort Garry, Winnipeg Manitoba, le mardi, 20 octobre 2009 à 17:00-17:45. La réunion du conseil d'administration aura lieu au même endroit le samedi, 17 octobre 2009 de 8:30 à 17:00. Veuillez faire part à la secrétaire, Annabelle Firlej, de tout sujet pouvant faire l'objet de discussion à ces réunions.

### Call for Nominations: Second Vice-President, Director-at-Large.

Nominations for the Second Vice President and Director-at-Large must be signed by three members of the society in good standing, and received by the Secretary of the Entomological Society of Canada, Annabelle Firlej (see inside back cover for contact details), by 30 April 2009.

### Appel de Nominations: Deuxième vice-président, Conseiller

Les nominations pour deuxième vice-président et conseiller doivent être signées par trois membres en règle de la Société, et envoyées à la Secrétaire de la Société d'entomologie du Canada, Annabelle Firlej (voir intérieur de la couverture arrière pour coordonnées détaillées), avant le 30 avril 2009.

### About absurdity and making mistakes

*“Only those who attempt the absurd... will achieve the impossible... I think it's in my basement... Let me go upstairs and check” — M.C. Escher*

*“The man who makes no mistakes does not usually make anything.” — Bishop W. C. Magee*



## Committees / Comités 2009

### Achievement Awards / Prix d'excellence

M. Evenden, Chair, Edmonton  
J. McNeil, London  
M. Smirle, Summerland  
P. Fields, ex officio, Winnipeg

### Annual Meeting / Réunion annuelle

T. Shore, Chair, Victoria  
W. Riel, Victoria  
B. Elliot, Winnipeg  
J. Huber, Ottawa  
A. Thielman, St-Catharines  
P. Fields, ex officio, Winnipeg

### Bilingualism / Bilinguisme

V. Martel, Chair, Alnarp  
M. Wu, St.-Jean-sur-Richelieu  
M.-P. Mignault, Ottawa  
M. Barette, St.-Jean-sur-Richelieu  
P. Fields, ex officio, Winnipeg

### Bylaws, Rules and Regulations / Règlements

W. Riel, Chair, Victoria  
P. MacKay, Winnipeg  
P. Fields, ex officio, Winnipeg

### Elections / Élections

T. Chapman, Chair, St. John's  
R. Auld, St. John's  
P. Fields, ex officio, Winnipeg

### Finance / Finance

G. Gibson, Chair, Ottawa  
B. Broadbent, London  
S. Brooks, Ottawa  
M. Erlandson, Saskatoon  
P. Bouchard, ex officio, Ottawa  
P. Fields, ex officio, Winnipeg

### Headquarters / Siège social

V. Behan-Pelletier, Chair, Ottawa  
J. Cumming, Ottawa  
P. Bouchard, ex officio, Ottawa  
P. Fields, ex officio, Winnipeg  
Chris Schmidt, Ottawa

### Heritage / Patrimoine

C. Gillott, Chair, Saskatoon  
R. Lamb, Winnipeg  
J.-P. Bourassa, Trois-Rivières  
P. Fields, ex officio, Winnipeg

### Insect Common Names / Noms communs d'insectes

M. Roy, Chair, Ste.-Foy  
H. Goulet, Ottawa  
M.-P. Mignault, Ottawa  
J.-F. Landry, Ottawa  
P. Fields, ex officio, Winnipeg  
B. Haack, ex officio, East Lansing, MI  
(Chair, Ent. Soc. of America Common Names  
Committee)

### Marketing / Comité du marketing

K. Hillier, Wolfville, NS  
C. Olivier, Saskatoon  
P. Fields, ex officio, Winnipeg

### Membership / Adhésion

G. Moreau, Chair, Moncton  
W. Riel, ESBC, Victoria  
L. Dosdall, ESA, Edmonton  
C. Olivier, ESS, Saskatoon  
T. Galloway, ESM, Winnipeg  
H. Douglas, ESO, Ottawa  
S. Rochefort, SEQ, Lac-Beauport  
K. MacKenzie, AES, Kentville  
A. Thielman, St. Catharines  
P. Fields, ex officio, Winnipeg

### Nominations / Nominations

T. Shore, Chair, Victoria  
R. Hallett, Guelph  
M.-P. Mignault, Ottawa  
P. Fields, ex officio, Winnipeg

**Publications / Publications**

K. MacKenzie, Chair, Kentville  
 G. Boivin, St.-Jean-sur-Richelieu  
 P. de Groot, Sault Ste. Marie  
 P. Kevan, Guelph  
 R. Bennett, ex officio, Victoria  
 K. Floate, ex officio, Lethbridge  
 R. West, ex officio, Portugal Cove  
 P. Fields, ex officio, Winnipeg

**Science Policy and Education /  
Politique scientifique et éducation**

P. Mason, Chair, Ottawa  
 M. Evenden, Edmonton  
 W. Riel, ESBC, Victoria  
 L. Dosdall, ESA, Edmonton  
 C. Olivier, ESS, Saskatoon  
 T. Galloway, ESM, Winnipeg  
 H. Douglas, ESO, Ottawa  
 S. Rochefort, SEQ, Québec  
 K. MacKenzie, AES, Kentville  
 T. Shore, ex officio, Victoria  
 G. Zilahi-Balogh, Kelowna  
 D. Huber, Prince George  
 P. Fields, ex officio, Winnipeg  
 A. Bennett, Ottawa

**Student Affairs / Affaires étudiantes**

A. Thielman, St. Catharines  
 L. Pinault, St. Catharines  
 J. Forrest, Toronto  
 L. Andreassen, Winnipeg  
 T. Wist, Edmonton  
 J. Renkema, Dalhousie  
 J. Myers, ex officio, Vancouver  
 P. Fields, ex officio, Winnipeg

**Student Awards / Prix aux étudiants**

J. Myers, Chair, Vancouver  
 N. Holliday, Winnipeg  
 T. Wheeler, Ste.-Anne-de-Bellevue  
 D. Currie, Toronto  
 C. Cloutier, Laval  
 F. Sperling, Edmonton  
 D. Giberson, Charlottetown  
 P. Fields, ex officio, Winnipeg

**Ad hoc Strategic Review / Revue  
stratégique**

R. Lamb, Chair, Winnipeg  
 P. Dixon, St. John's  
 G. Gerber, Winnipeg  
 R. West, Portugal Cove  
 P. Fields, ex officio, Winnipeg

**Ad hoc ESC Business Plan /  
Plan d'affaires de la SEC**

P. Fields, Chair, Winnipeg  
 G. Ball, Edmonton  
 C. Buddle, Montreal  
 R. Lamb, Winnipeg  
 G. Moreau, Moncton  
 D. Shorthouse, Wood's Hole

**Ad Hoc Web Content /  
Contenu internet**

M. Cusson, Chair Ste. Foy  
 D. Shorthouse, Wood's hole  
 R. West, Portugal Cove  
 K. Rondeau, Lethbridge  
 T. Poiré, Ottawa  
 P. Fields, ex officio, Winnipeg

### Seeking new *Bulletin* Editor

The Entomological Society of Canada is looking to fill the position of *Bulletin* Editor beginning in January 2010. The main duties of the Editor are to solicit material to be published in the *Bulletin*, arrange the material, proof-read galleys, and to arrange printing and mailing of the *Bulletin*, with the help of the Assistant Editor. This position provides an excellent opportunity to become fluent with desktop publishing, and allows the incumbent to become familiar with all aspects of the Society.

The *Bulletin* Editor is appointed by the Governing Board, is a Trustee of the Society and an ex officio member of the Publication Committee. He or she is encouraged to attend the Annual General Meeting and Governing Board Meetings. Currently, the Editor receives an honorarium of \$500/ year and can be provided some funds to attend the AGM. If you are interested in serving the Society in this important position, please contact by 1 June 2009:

Paul Fields  
President of the ESC  
Tel: (204) 983-1468  
E-mail: [paul.fields@agr.gc.ca](mailto:paul.fields@agr.gc.ca)

### À la recherche d'un nouveau rédacteur du *Bulletin*

La Société d'entomologie du Canada cherche à combler le poste de rédacteur du *Bulletin* à compter de janvier 2010. Les tâches principales du rédacteur sont de trouver des contributions à être publiées dans le *Bulletin* comme des articles, des photos, ou tout autre matériel, d'organiser ce matériel, de corriger les épreuves, et d'organiser le tirage et la distribution du *Bulletin*, avec l'aide du rédacteur adjoint. Remplir ce poste est une excellente opportunité pour se familiariser avec les techniques de mise en page et avec les multiples facettes de la Société.

Le rédacteur du *Bulletin* est nommé par le conseil d'administration, est un fiduciaire de la Société et un membre de droit du Comité des publications. Il ou elle est encouragé(e) à assister à l'Assemblée générale annuelle et aux réunions du conseil d'administration. Le rédacteur reçoit actuellement un honoraire de 500\$ par an et peut bénéficier de fonds pour assister aux assemblées générales annuelles. Si vous êtes intéressés à contribuer à la Société en remplissant ce poste important, veuillez contacter, avant le 1er juin 2009 :

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### Eyes, muscles, and beetles on slides – any taker?

Dr. Les Safranyik has inherited a large number of glass slides of insect eyes and flight muscles from the late Dr John A. Chapman, insect ecologist, who worked at the Pacific Forestry Centre during the 1950s and 1960s on various aspects of bark beetle ecology and behaviour. There are six slide boxes containing 300+ slides of eyes, mainly of various species of Cerambycidae, but there are also numerous slides of bark beetle (Curculionidae, Scolytinae) and ant eyes. The sides of flight muscles (one box of ca. 75 slides) are mainly of an ambrosia beetle (*Trypodendron lineatum*). Dr. Safranyik is unaware whether or not Dr Chapman published on any of this material. Any institution or individual interested in all or parts of this material are welcome to it. Please contact Dr. Safranyik at 250-363-0617 or [lsafrany@pfc.forestry.ca](mailto:lsafrany@pfc.forestry.ca) for more information.

## Canadian Forum for Biological Control

### We need your help!

The Canadian Forum for Biological Control (CFBC) is a national, non-profit organization with a mandate to study, advance and promote/advocate biological control in Canada. To raise the profile of biological control within the broader research community, the CFBC sponsors symposia on biological control each year at national scientific meetings. You can view the program for the 2008 symposium, held in Charlottetown in June at <http://www.biocontrol.ca/cfbc/CFBC-Symposium20081.pdf>. The CFBC relies on annual membership dues of \$15 to support this activity.

If you have an interest in biological control [of arthropods, diseases or weeds] and would like to become a member of this national group, or are already a member but have not paid your dues for this year, please contact CFBC secretary James Coupland ([couplandj@hotmail.com](mailto:couplandj@hotmail.com)) to obtain a membership/dues payment form. Your dues will directly support the next biological control symposium planned for the Entomological Society of Canada meeting in Winnipeg, October 2009. See you there!

## Forum canadien pour la lutte biologique

### Nous avons besoin de votre aide!

Le Forum canadien pour la lutte biologique (FCLB) est un organisme national, à but non lucratif, dont le mandat est d'étudier, de faire progresser, de promouvoir et de défendre la lutte biologique au Canada. Afin d'accroître la visibilité de la lutte biologique au sein de la communauté scientifique, le FCLB parraine chaque année des symposiums sur la lutte biologique lors de réunions scientifiques d'envergure nationale. Le programme du symposium 2008, tenu en juin à Charlottetown, peut être consulté sur: <http://www.biocontrol.ca/cfbc/CFBC-Symposium20081.pdf>. Le FCLB finance ce type d'activité à même les cotisations annuelles de ses membres (soit 15 \$ par membre).

Si la lutte biologique [arthropodes, maladies ou plantes nuisibles] vous intéresse et que vous souhaitez devenir membre de ce groupe national, ou si vous êtes déjà membre mais n'avez pas encore payé votre cotisation cette année, veuillez communiquer avec le secrétaire du FCLB, James Coupland ([couplandj@hotmail.com](mailto:couplandj@hotmail.com)), afin d'obtenir un formulaire de cotisation. Cette dernière permettra de financer directement le prochain symposium sur la lutte biologique, qui se tiendra lors de la réunion de la Société d'entomologie du Canada, à Winnipeg, en octobre 2009. En espérant vous y voir!



## Annual Photo Contest

### Seeking a Few Good Photos!

The Fifth Annual Photo Contest to select images for the 2010 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 '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 may be used on the ESC website.

#### Contest rules are as follows:

1. Photos can be submitted as an electronic file (preferred), a slide or a print (negative will be required if chosen). Digital images must have a resolution of at least 50 pixels/cm.
2. Entrants can submit more than one photo. A brief description (i.e. caption) should be provided with each photo submitted.
3. Photos must be taken by the entrant, or the entrant must own the copyright.
4. The copyright of the photo remains with the entrant, but use must be granted to the Entomological Society of Canada for inclusion on the cover of one volume (i.e. 6 issues) of *The Canadian Entomologist*, one volume (i.e. 4 issues) of the *Bulletin of the Entomological Society of Canada*, and on the ESC website.
5. The entrant must be a member in good standing of the Entomological Society of Canada.
6. The judging committee will be chosen by the Chair of the Publications Committee of ESC.
7. Photos are not restricted to insect "portraits". To represent the scope of entomological research we encourage photos of field plots, laboratory experiments, insect impacts, sampling equipment, non-insect arthropods, etc.
8. A selection of the entries may be exhibited and the winners announced at the Annual Meeting of the Entomological Society of Canada or in the *Bulletin*.
9. There is no cash award for the winners, but photographers will be acknowledged in each issue the photos are printed.
10. Submissions should be sent by **July 31, 2009** to:

Kenna MacKenzie,  
Chair, ESC Publications Committee  
Agriculture and Agri-Food Canada  
32 Main St.  
Kentville, NS  
CANADA B4N 1J5  
Tel: 902-679-5731 Fax: 902-679-2311  
E-mail: [mackenziek@agr.gc.ca](mailto:mackenziek@agr.gc.ca)



## Concours annuel de photographie

### À la recherche de quelques bons clichés!

La cinquième édition du 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* de 2009 est présentement en cours. Les images des couvertures doivent représenter l'étendue de l'entomologie couverte par les publications de la Société. Des photos représentant des insectes et d'autres arthropodes forestiers, urbains ou agricoles, des paysages, du travail de terrain ou de laboratoire, des gros plans, ainsi que des activités associées à la physiologie, au comportement, à la taxonomie ou à la lutte intégrée seraient souhaitées. Nous avons également besoin de quelques «insectes vedettes» (pour le dos et sous le titre). Si vos photographies sont sélectionnées, elles seront utilisées pour la couverture des deux publications pour l'année entière.

#### Les règlements du concours sont les suivants :

1. Les photos peuvent être soumises sous forme de fichiers électroniques (de préférence), de diapositives ou imprimées (le négatif sera requis si la photo est choisie). Les images numériques doivent avoir une résolution minimale de 50 pixels/cm.
2. Les concurrents peuvent soumettre plus d'une photo. Une brève description doit être fournie avec chaque photographie soumise.
3. Les photos doivent avoir été prises par le concurrent, ou ce dernier doit en posséder les droits d'auteur.
4. Les droits d'auteur de la photo appartiennent au concurrent, mais l'utilisation doit être accordée à la Société d'entomologie du Canada pour son utilisation sur la couverture d'un volume (i.e. 6 numéros) dans *The Canadian Entomologist* et un volume (i.e. 4 numéros) dans le *Bulletin de la Société d'entomologie du Canada*.
5. Le concurrent doit être un membre en règle de la Société d'entomologie du Canada.
6. Le jury d'évaluation sera choisi par le président du Comité des publications de la SEC.
7. Les photos n'ont pas à être restreintes à des « portraits » d'insectes. Afin de représenter l'étendue des recherches en entomologie, nous encourageons les photographies de terrain, d'expériences de laboratoires, d'impacts des insectes, d'équipement d'échantillonnage, d'arthropodes autres qu'insectes, etc.
8. Une sélection des candidats sera exposée et les gagnants seront annoncés à la réunion annuelle de la Société d'entomologie du Canada.
9. Il n'y a pas de récompense monétaire pour les gagnants, mais les photographes seront remerciés dans chacun des numéros où les photos apparaîtront.
10. Les soumissions doivent être envoyées avant le **31 juillet 2009** à :

Kenna MacKenzie,  
Présidente, Comité des publications de la SEC  
Agriculture et Agroalimentaire Canada  
32 Main St.  
Kentville, Nouvelle-Écosse,  
CANADA B4N 1J5  
Tél: 902-679-5731 Fax: 902-679-2311  
Courriel: [mackenziel@agr.gc.ca](mailto:mackenziel@agr.gc.ca)

## Postdoctoral Fellow Positions

### 1) Honey Bee Disease Research

A three-year position is available for a postdoctoral fellow to study *Nosema ceranae* infections of honey bees. *Nosema ceranae* is an emergent world-wide pathogen, and it, in combination with *Nosema apis*, have been linked to wide scale depopulation of bee colonies in North America and Europe.

The project proposes to examine effective therapeutic control for these parasites and generate a modern antibiotic residue dataset for fumagillin-based therapies. The objectives are to: 1) Develop optimal application methods and dosages for fumagillin against *N. apis* and *N. ceranae*; 2) Document residues associated with different methods of fumagillin application; 3) Screen novel chemical therapies for *Nosema*; and 4) Examine the seasonal phenology of *N. apis* and *N. ceranae* in Canada. The successful candidate will work as part of an interdisciplinary team, towards the solution of objectives 1, 2 and 4.

This position will be located at the Agriculture & Agri-Food Canada Research Farm in Beaverlodge, Alberta, Canada. Field work will primarily be conducted in northern Alberta, but may also include limited periods of work in adjacent provinces or the U.S.

A PhD in entomology, or related discipline, from a recognized university is required. Candidates must have completed their PhD within the last 5 years. Previous experience with honey bees or social insects, as well as basic PCR skills, are highly desirable.

Salary for the position is commensurate with the Visiting Fellowships in Canadian Government Laboratories Program administered by the Natural Sciences and Engineering Research Council of Canada. Currently this rate is \$43,724 per year. A limited relocation allowance will also be provided. For eligibility criteria and more information about this program refer to: [http://www.nserc-crsng.gc.ca/Students-Etudiants/PD-NP/Laboratories-Laboratoires/index\\_eng.asp](http://www.nserc-crsng.gc.ca/Students-Etudiants/PD-NP/Laboratories-Laboratoires/index_eng.asp)

This position is available to start on 1 April 2009.

Interested parties should contact:

Dr. Stephen Pernal  
Agriculture & Agri-Food Canada  
Beaverlodge Research Farm  
P.O. Box 29, 1 Research Road  
Beaverlodge, AB  
Canada T0H 0C0  
Tel: (780) 354-5135  
E-mail: [Steve.Pernal@agr.gc.ca](mailto:Steve.Pernal@agr.gc.ca)

## 2) Population Genomics of the Mountain Pine Beetle System

Department of Biological Sciences - University of Alberta

Position duration – until Dec 31, 2009 with a strong possibility of extension.

Closing date – open until filled

The Department of Biological Sciences has an opening for a Post Doctoral Fellow in the area of Population Genomics. You will become an integral member of a fast moving, multidisciplinary team researching the Mountain Pine Beetle (MPB) infestation in Western Canada. This research will be conducted in the laboratory of Dr. Felix Sperling and will involve collaboration with other project researchers. The successful candidate will possess a doctoral degree in molecular biology, quantitative genetics, bioinformatics, or a closely related field. Knowledge and experience in single nucleotide polymorphism (SNP) identification, re-sequencing and typing, or association and QTL analysis is required. Related experience with insects and/or plants is preferred.

You will be responsible for:

- 1) Identification of candidate genes with potential adaptive significance for interacting biological organisms in the MPB infestation from project EST libraries;
- 2) In silico identification and validation of SNPs within candidate genes;
- 3) Genotyping and association and QTL analysis of interacting biological organisms using identified SNPs
- 4) Supervising research personnel in a laboratory setting.

Interested individuals should submit an application package (cover letter and curriculum vitae) and arrange to have three sealed letters of reference forwarded to the address below.

In accordance with University of Alberta Policy, applicants should have no more than three years' post doctoral experience. Salary is commensurate with experience. Electronic applications are preferred.

Matt Bryman

Project Manager

The Tria Project: Mountain Pine Beetle System Genomics

CW 405 Biological Sciences Building

University of Alberta

Edmonton, AB T6G 2E9

Email: [mbryman@ualberta.ca](mailto:mbryman@ualberta.ca)

We thank all applicants for their time and effort, but only those selected for an interview will be contacted.

# Photo gallery / Galerie d'images

By Dave K. B. Cheung



*Chetogena tachinomoides* (Tachinidae)



Ebony Jewelwings *Calopteryx maculata* (Calopterygidae)



*Ceresini* sp. (Membracidae)



*Ochthera* sp. (Ephydriidae)



*Polistes fuscatus* (Vespidae)



*Ptenothrix atra* (Sminthuridae)



*Zeugomantispa* sp. (Mantispidae)



*Osoriinae* sp. (Staphylinidae)

Dave Cheung completed his undergraduate degree in Biological Sciences at the University of Guelph while working for Dr. Steve Marshall in the Insect Systematics lab. Dave's main interests are entomological education and research via the integration of digital technology and design. His skills and unique approach have been in demand by the University of Guelph and outside contractors such as the Frost Center Institute and the University of Georgia's Research Station in Costa Rica.

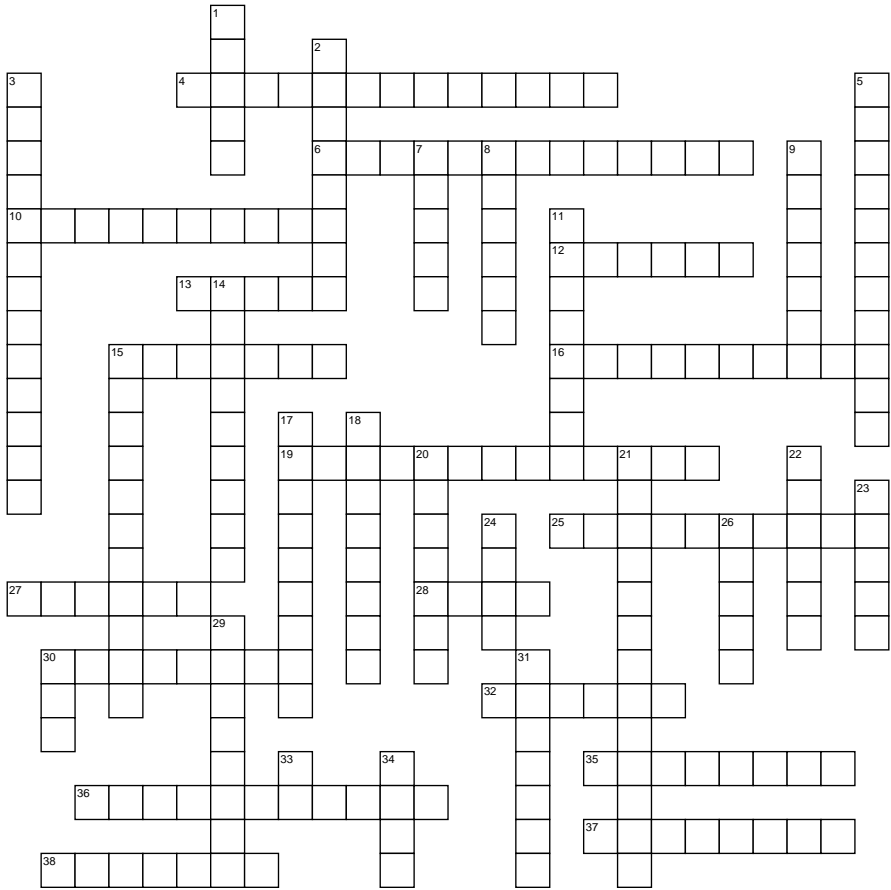
Dave is the founding technical editor for the Canadian Journal of Arthropod Identification. His primary role is to work with authors to facilitate the transformation of original research into effective, interactive web publications. He has developed a key template using Microsoft PowerPoint that allows authors to quickly and easily publish their research by dragging and dropping text and photos.

Dave is currently applying his skills to a Masters Degree by developing a visual identification key for landscape and nursery insect pests. He continues to refine his artistic and technical skills through self-study and inspiration from the natural world.

For more information visit [dkbdigitaldesigns.com](http://dkbdigitaldesigns.com)



# Entomological Crossword / Mot croisé entomologique



www.CrosswordWeaver.com

## ACROSS

- 4 fruit fly homeotic mutant  
 6 respiratory structures of immature Plecoptera & Ephemeroptera (2)  
 10 egg-laying structure of female insects  
 12 odonate nymphs have greatly modified this mouthpart structure  
 13 male dung beetle 'weapons'  
 15 head, thorax and abdomen of insects  
 16 outermost protective layer of insect cuticle  
 19 sex determining system in eusocial Hymenoptera  
 25 one of the most diverse families of parasitoid wasps  
 27 major constituent of insect cuticle  
 28 genus of leaf cutter ant  
 30 neuropeptide hormone controlling sclerotization of cuticle after molting  
 32 \_\_\_\_\_ dance of honey bees  
 35 state of arrested development enabling insects

- to survive unfavourable conditions  
 36 dung beetle genus  
 37 release of adult insect from previous instar  
 38 tubular elements of insect gas exchange system

## DOWN

- 1 Cynipid wasps produce these  
 2 reduced hindwings of Diptera  
 3 endocrine glands producing juvenile hormone (2)  
 5 female reservoir for sperm deposited after mating  
 7 morphologically distinguishable groups of individuals in eusocial insect colony  
 8 hardened forewings of Coleoptera  
 9 temporary nest of army ants  
 11 supercooling compound in hemolymph of mountain pine beetles  
 14 single elements of the insect compound eye  
 15 aquatic insect order in which larvae produce

- cases  
 17 chemical used in communication between individuals of same species  
 18 separation of old from new cuticle during molting  
 20 insect order renowned for elaborate penis morphologies  
 21 building blocks in insect development (2)  
 22 peritrophic envelope is found here  
 23 royal \_\_\_\_\_  
 24 terrestrial 'ecosystem engineers'  
 26 immature stage of aquatic hemimetabolous insects  
 29 molting hormone  
 30 \_\_\_\_\_ fly maggot - can cause myiasis  
 31 loose aggregation of cells suspended in hemolymph, functioning in energy storage (2)  
 33 abbreviation for hormone regulating many aspects of insect development & reproduction  
 34 transitional, metamorphic stage in holometabolous insects

This crossword has been created by Tim Goater for an entomology course exam. Tim is a professor in the Dept of Biology at Vancouver Island University: E-mail: [Tim.Goater@viu.ca](mailto:Tim.Goater@viu.ca). The answers appear on p. 47.

## Summary of the meeting of the Scientific Committee

October 2008

The Scientific Committee met in Ottawa on October 22-23, 2008. A more detailed account of the meeting appears in the Newsletter of the Biological Survey of Canada (Terrestrial Arthropods) 28(1), 2009, which is also on the BSC web site at <http://www.biology.ualberta.ca/bsc/english/newsletters.htm>

### **Future of the BSC**

The Canadian Museum Nature has committed enough funds to pay Dr. Andrew Smith's salary through the summer of 2009 as well as provide a small operating budget for 2009/2010. There is no commitment for funding from the CMN beyond March 31, 2010.

Dr. Smith and Dr. Shorthouse made a presentation to the Federal Biodiversity Information Partnership (FBIP) management board in September. The FBIP board is in agreement that the BSC is a relevant and critical player in Canadian biodiversity that could be funded as part of the FBIP strategy. A letter of agreement between the BSC and FBIP has been drafted. Developments in the federal government will delay any potential acceptance and implementation of FBIP's biodiversity plan.

An interim plan will be put in place to keep certain activities going if the Secretariat ceases to exist or is significantly reduced. Some duties may fall to the Chair of the Scientific Committee, while other Committee members may be recruited for more specific tasks such as producing the newsletter.

In response to the interest in seeing the BSC expand into a more comprehensive biological survey that encompasses all taxonomic groups, the Committee discussed the potential structure of an expanded BSC. For now the BSC will focus on and promote selected key projects, such as the Northern Insect Survey and the *Canadian Journal of Arthropod Identification*.

Alternative funding strategies were considered such as approaching individual government departments and/or foundations. Another suggested approach is to exist on funding on a project by project basis, that would also help pay for the BSC administration.

### **BSC Incorporation**

The BSC will be forming a not-for-profit corporation to facilitate fundraising and other activities. The Committee discussed some of the outstanding issues required to formulate the bylaws such as membership, quorum, and so on. How this new BSC not-for-profit corporation will affect the relationship with the Entomological Society of Canada was also discussed. Dr. Fields will discuss this issue with the Entomological Society's executive committee.

### **Scientific projects and priorities**

#### **Northern Insect Survey project**

The subcommittee is working on a detailed formal proposal that will be submitted to granting agencies such as NSERC. The main objective of this project is to inventory arthropod diversity in numerous arctic and subarctic localities and to curate and database relevant specimens from collections. Some of the main themes that will be highlighted in the proposal, depending on the recipient, will be global climate change, arctic sovereignty, and employment and training for First Nations people.

#### **Grasslands project**

The first grasslands publication (Arthropods of Canadian grasslands: ecology and interactions in grassland habitats) has been submitted to NRC Press for publication consideration as part of their monograph series. Some chapters for the second volume on Arthropods and Altered Grassland Ecosystems have been submitted. The editor, Dr. Kevin Floate, esti-

mates that there will be 12 to 15 chapters in the second volume.

### Canadian Journal of Arthropod Identification

A key to Heptageniidae of the World was published in October. There have been many other promised submissions. Discussions for linkages with the Encyclopedia of Life and Discover Life are ongoing. Dr. Steve Marshall is also discussing the possibility of a network of journals of arthropod identification from other countries.

### Terrestrial arthropods of Newfoundland and Labrador

A key to the Curculionoidea of Newfoundland should be submitted to the *Canadian Journal of Arthropod Identification* in 2009. All specimens of Carabidae in the Memorial University of Newfoundland collection and Canadian National Collection of Insects have been databased along with many literature records. Production of distribution maps is planned. Work on the Staphylinidae continues with a full key expected by late 2009. Work on compiling a checklist of Lepidoptera is ongoing. Several manuscripts have been submitted or published, which include treatments of NL fauna for several beetle families. Work on a comprehensive bibliography of works dealing with Newfoundland entomology continues at a good pace. Plans for a major collecting expedition throughout Newfoundland in 2010 or 2011, to repeat the Lindroth's 1948 and 1951 expeditions, is proceeding. This project is an open initiative and any/all participation is welcome.

### Forest arthropods

Volume 4 of the *Arthropods of Canadian Forests* newsletter was issued in January and will likely be the last issue. The seven synthesis papers stemming from a BSC-sponsored symposium, entitled "Maintaining Arthropods in Northern Forest Ecosystems,"

were published in the July/August issue of *The Canadian Entomologist*. Good progress continues on a handbook to the Cerambycidae (Coleoptera) of Canada and Alaska.

### Invasions and reductions

The proceedings of the symposium on Ecological Impacts of Non-Native Insects and Fungi on Terrestrial Ecosystems held at the 2006 Joint Annual Meeting have been published online in the journal *Biological Invasions*. The hard copy will be out in January 2009. Databasing for the coccinellid project continues. COSEWIC has expressed interest in compiling available information. Work on developing a comprehensive list of the non-native terrestrial arthropods of Canada continues at a good pace and a publication is planned for 2009. Another related activity is the capture of label data associated with archived specimens of non-native arthropod fauna and fungal flora on trees. This activity is complete for collections at the Canadian Forest Service and the Canadian National Collection of Insects. Collections at the Lyman Entomological Museum and at the University of Guelph will also be databased. These data will be used to develop distribution maps and for analysis of rates and patterns of range expansion.

### BioBlitzes

The 2008 BioBlitz was held at Bruce Peninsula National Park. A report can be found in the fall *Newsletter of the Biological Survey of Canada (Terrestrial Arthropods)*. The BioBlitz resulted in some important contributions to the Bruce Peninsula database. There was some discussion of possible locations for a 2009 BioBlitz.

Anybody who participated in the 2001 Bioblitz at Onefour, Alberta is urged to send information on the species collected to Kevin Floate: [kevin.floate@agr.gc.ca](mailto:kevin.floate@agr.gc.ca).

### **Curation Blitzes**

A good number of people gathered at the Canadian Museum of Nature for the 2008 Curation Blitz. There are plans to hold another Curation Blitz in Winnipeg at the JB Wallis Museum during the 2009 ESC/ESM Joint Annual Meeting.

### **Databasing**

The BSC plans to start compiling a list of databases initiated because of a BSC project or interest. Initially, the goal will be to show a track record to groups such as FBIP.

The database of common and historical collecting localities that is on the BSC web site has generated positive response. A file with some corrections will be posted soon.

### **BSC Symposia**

The BSC Symposium held at the 2008 ESC/ESO JAM went well and there are plans to hold another symposium in Winnipeg in 2009. Committee members were in favour of continuing to invite students to make presentations.

## ***Liaison and exchange of information***

### **Canadian Museum of Nature**

Mr. Roger Baird, Director, Collection Services reported that the Canadian Museum of Nature and eight other institutions from around the world have been approached to form a Global Task Force for the Mobilization of Natural History Collections. Through the GBIF web site they have been able to make accessible 160 million records, 40% of which are specimen based. Over the next 12-15 months, the task force will be looking at what would be needed to make 1 billion records.

### **Entomological Society of Canada**

Dr. Paul Fields, President of the Entomological Society of Canada, reported that the

Board of the Entomological Society of Canada continues to be ready to provide whatever non-monetary support that they can to the Biological Survey during this difficult period.

### **Agriculture and Agri-Food Canada**

Dr. Jean-François Landry reported that Mr. Jim Troubridge, the former collection manager has retired. Mr. Eric Rickey, who manages the national identification service, will act as a temporary replacement.

### **Barcode of Life**

Dr. Alex Smith, Research Scientist, Canadian Centre for DNA Barcoding, provided an overview of the Canadian DNA Centre for Barcoding which is located in the new Biodiversity Institute of Ontario building at the University of Guelph and answered a number of questions about their processes and procedures.

### **Canadian University Biodiversity Consortium**

Dr. Anne Bruneau, Université de Montréal, provided an overview of the Canadian University Biodiversity Consortium which was funded by the Canadian Foundation for Innovation in 2007 to set up a database infrastructure across the country. Currently 11 universities, 6 botanical gardens, and 2 collections from the Royal Ontario Museum are participating. She advised contacting participating universities with entomology collections for collaboration possibilities or for suggestions on which groups to focus.

### **Encyclopedia of Life**

Mr. David Shorthouse, WorkBench Project Leader - Encyclopedia of Life, shared some information about activities at the Encyclopedia of Life (EOL) project. It is hoped that there might be some sort of collaboration with EOL and the *Canadian Journal of Arthropod Identification*.

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## Reports on regional development of potential interest

Members of the Committee summarized information of interest to the Survey from various parts of the country. Among other items it was reported that in the Maritimes Dr. Reggie Webster continues his prolific collecting in New Brunswick and Mr. Chris Majka and many others continue much work on beetles. In Alberta, a curator has been hired by the University of Calgary to curate their invertebrate collections. The University of Alberta and Olds College will offer entomology courses in a new Bachelor of Science agricultural program. The Entomological Society of Alberta prepared a submission regarding the Joint Panel Review of EnCana Corporation's proposal to drill an additional 1275 natural gas well in the Suffield National Wildlife area. In Quebec, at McGill University, a program with an entomological specialization will start in the fall of 2009.

## Other matters

The Committee briefly discussed other matters such as the BSC web site, the BSC newsletter, the BSC scholarship, BSC publicity, a brief on the importance of insect collecting, the faunal analysis project, endangered species, and Scientific Committee membership.

Prepared by Susan Goods, Biological Survey of Canada. BSC email: [bsc@mus-nature.ca](mailto:bsc@mus-nature.ca)

## People in the news / Gens qui font les manchettes

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### Congratulations to Owen Olfert, Murray Braun and Ross Weiss of Saskatoon.

**A**s members of the 'Alternative Cropping System Team', they received an Agriculture and Agri-Food Canada **Gold Harvest Award** for 2008. Their entomological expertise contributes to an 18-yr project designed to evaluate the long term sustainability of nine arable crop production systems. This project, now entering Year 13, provides a unique opportunity to address agronomic, food safety and quality as well as environmental concerns related to sustainable production systems. (<http://agrisource1.agr.gc.ca/Intranet/BasicTemplateAction.do?action=entity&entityId=20673&lang=e>)



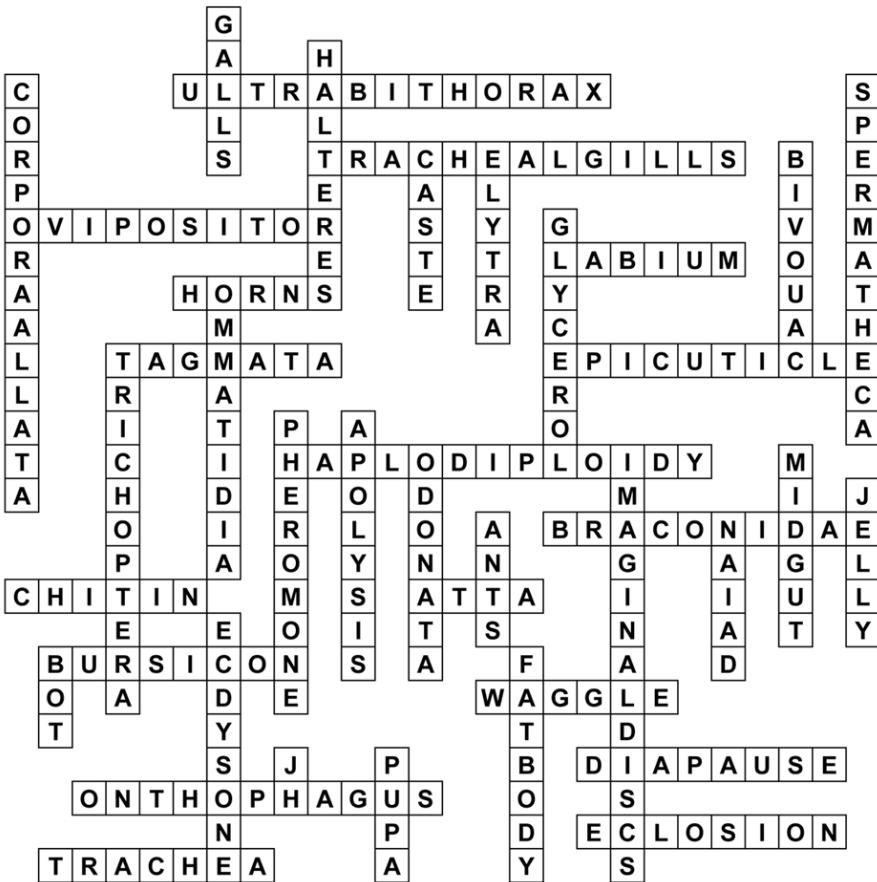
## Saving one tree at a time

Keen-eyed Bulletin readers may have spotted the FSC logo on the back of the December issue. What is this FSC and who cares anyway?

For reasons of convenience and cost, the Bulletin now is being printed by the Lowe-Martin Group. The FSC logo indicates that LMG has been independently certified by the Forest Stewardship Council ([www.fsccanada.org](http://www.fsccanada.org)) as using paper from forests that are managed to meet the social, economic and ecological needs of present and future generations.

The Bulletin and you, saving the world one tree at a time.

### Solution of the crossword puzzle on p. 42:





Fred Beaulieu

Jeff Cumming and Scott Brooks in full action, emptying their pan traps in search for empidoid flies on the shore of Cowichan Lake.

**(continued from p. 52)**

work a few doors away from my office (see photo above)!

Indeed, BC has breath-taking mountains, valleys, lakes, mossy rainforests, and majestic trees...and bears, and cougars. I didn't actually see either; however, I did come across a large fresh scat, almost certainly of a bear, on a trail in Botanical Beach Provincial Park, on Vancouver Island. In Mount Revelstoke National Park, the rangers told me there were two teenage grizzlies roaming the meadows near the summit, as well as a black bear near one of the trails lower on the mountain. So, I sampled only nearby the ranger post until there were enough visitors to ensure my safety on the summit trails. Of course, I was armed with my trusty can of pepper spray, which could eject a powerful 5 meter jet of a cayenne solution (though in theory for only 13 seconds before it is empty)! I've tried it! Not in the forest though, because I was told this could, paradoxically, attract the bears. I've never had a close encounter with a large predator, besides a cassowary that chased me out of an Australian rainforest in 2001. When I went back into the forest, the curious big-clawed bird visited me again, but this time I played cool—thinking

very hard of my mommy—and barely moved. The cassowary soon got bored and left within a minute. Anyway, back to BC. So, what have I got other than pepper spray to avoid trouble during my mostly solo-trip? Bear bells attached to my jeans, a whistle, and mostly me talking a lot to myself, to keep the bears aware of my presence. No matter how charming you are, it's far more disconcerting than interesting to talk aloud to yourself when you are scared and you have...nothing to say, except that you're planning to get off the trail and collect a hemlock branch, or the leaves of that strange flower. For a talkative guy, I thought I was pretty boring...No wonder the bears stayed away. Anyway, for info on how to play it cool with bears in the wild, visit <http://www.env.gov.bc.ca/bcparks/conserv/bearsandcougars.pdf>.

This summer I'm off to the tundra of Churchill, Manitoba, to collect mites, polar bear glimpses, and black fly itches, with my girlfriend and my (by then) four month-old son.

I invite you to send your field trip stories, info on soon-to-be famous collecting sites and methods, or any other entomological experiences to the *Bulletin*, by contacting Kevin Floate or myself.

(suite de la page 52)

échantillonné près de la station des gardes forestiers jusqu'à ce qu'il y ait assez de visiteurs pour assurer ma sécurité sur les sentiers menant au sommet. Bien sûr, j'étais armé de mon fidèle vaporisateur de poivre, pouvant projeter la solution de Cayenne jusqu'à environ 5 m (mais théoriquement pendant seulement 13 secondes avant qu'elle soit vide)! Je l'ai essayé! Pas dans la forêt par contre, parce qu'on m'a dit que ça pouvait, paradoxalement, attirer les ours. Je n'ai jamais eu de rencontre rapprochée avec un gros prédateur, à part quand un casoar m'a chassé hors d'une forêt pluviale australienne en 2001. Quand je suis retourné dans la forêt, l'oiseau à grosses griffes est revenu me voir, mais cette fois je l'ai joué décontracté—mais j'ai pensé très fort à ma mère—et je suis resté quasi-immobile. Le casoar s'est ennuyé rapidement et m'a laissé tranquille au bout d'une minute. De retour en C.-B. Donc, qu'ai-je d'autre que le poivre de Cayenne pour éviter le trouble durant mon voyage surtout solitaire? Des petites cloches

attachées à mes jeans, un sifflet, et surtout moi qui me parle beaucoup, pour prévenir les ours de ma présence. Mais aussi charmant que tu puisses être, c'est davantage déconcertant de parler fort tout seul quand t'as peur et que t'as...rien à dire sauf que tu planifies de récolter cette branche de pruche ou ces feuilles de cette fleur étrange. Pour quelqu'un de volubile, je me suis trouvé pas mal plate... Pas étonnant que les ours n'ont pas bronché. En tout cas, pour de l'information sur comment rester cool avec les ours en nature, allez voir <http://www.env.gov.bc.ca/bcparks/conservation/bearsand-cougars.pdf>. Cet été, je pars vers la toundra de Churchill, au Manitoba, pour récolter des acariens, des aperçus d'ours polaires, et des piqûres de mouches noires, avec ma blonde et mon fils qui aura alors quatre mois.

Je vous invite à envoyer vos récits de terrain, votre savoir sur des techniques ou des sites de récoltes célèbres-en-devenir, ou d'autres expériences entomologiques au Bulletin, en contactant Kevin Floate ou moi-même.



Jennifer Heron

Jenny Heron, Suzie Lavallée, Karen Needham and Fred Beaulieu near the Beaver Lake of Stanley Park in Vancouver.

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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.*

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Assistant Editor: Fred Beaulieu

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

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

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ISSN: 0071-0741  
Customer Account No. 3975533  
Publications Mail Agreement No. 40033986  
Printed in Canada  
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**Submission deadline for the  
next issue: 30 April 2009**



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

Publié par la  
Société d'entomologie du Canada  
393 Winston Ave.  
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ISSN: 0071-0741  
Numéro de client : 3975533  
Numéro de convention : 40033986  
Imprimé au Canada  
Droits d'auteur 2009 Société d'entomologie du Canada

**Date de tombée pour  
le prochain numéro :  
30 avril 2009**



## The Buzz / Bourdonnements

By Fred Beaulieu, Assistant Editor / Rédacteur adjoint



Marie-Pierre Mignaut

### The weapon of choice when sampling alone in BC: pepper spray or...talking to yourself

Last August I visited southern BC and Vancouver Island to collect plant-feeding mites and really enjoyed it. Thanks to British Columbian entomologists such as Robb Bennett and Andy Bennett for their helpful advice (are they cousins? No. Robb is native to Ontario and moved to BC, and vice versa for Andy), Jennifer Heron's trio (with Suzie Lavallée & Karen Needham, see photo p. 49) who made my visit of Vancouver's Stanley Park a social event, and to Neville Winchester, who let me sample in his superb 'backyard' of arbutus on Vancouver Island. I also discovered the Okanagan Valley, ending my late days of work in Howard Thistlewood's lab (Pacific Agri-Food Research Center in Summerland) with a local red wine in my campsite near the shore of Skaha Lake. My visit to the Cowichan Lake Research Station was also memorable, especially when Tony Painter, the station caretaker, introduced me to the only other visitors at that time—I had no idea they were going to be there—Jeff Cumming and Scott Brooks, two dipterists from the CNC, who

(continued on p. 48)

### L'arme de choix en échantillonnant seul en C.-B.: Le poivre de Cayenne ou...me parler tout seul

En août dernier, j'ai visité le sud de la C.-B. et l'Île de Vancouver pour récolter des acariens phytophages, et j'ai vraiment aimé. Grâce à des entomologistes britanno-colombiens tels que Robb Bennett et Andy Bennett pour leurs conseils judicieux (sont-ils cousins? Non. Robb est originaire de l'Ontario et a déménagé en C.-B., et vice versa pour Andy), au trio de Jennifer Heron (avec Suzie Lavallée & Karen Needham, voir photo page 49) qui ont fait de ma visite au Parc Stanley de Vancouver un événement social, et à Neville Winchester qui m'a laissé échantillonner dans sa superbe 'cour' d'arbusier sur l'Île de Vancouver. J'ai aussi découvert la vallée de l'Okanagan, en terminant mes longues journées de travail au labo de Howard Thistlewood (Centre de recherches agroalimentaires à Summerland) avec un vin rouge local, à côté de ma tente près du Lac Skaha. Ma visite de la Station de recherche de Cowichan Lake était aussi mémorable, en particulier lorsque Tony Painter, le gardien de la station, m'a présenté aux deux seuls autres visiteurs du moment—je n'avais aucune idée qu'ils allaient être là—Jeff Cumming et Scott Brooks, deux dipteristes de la CNC qui travaillent à deux portes de mon bureau (voir photo page 48)!

La C.-B. a en effet des montagnes, des vallées, des lacs, des forêts pluviales, et des arbres majestueux à couper le souffle... Et des ours, et des cougars. Je n'en ai point vu en fait; toutefois, j'ai passé à côté d'une grosse bouse bien fraîche, presque assurément d'un ours, sur un sentier dans le Parc provincial Botanical Beach, sur l'Île de Vancouver. Dans le Parc national du Mont Revelstoke, les gardes forestiers m'ont prévenu que deux grizzlis adolescents erraient dans les prés près du sommet, ainsi qu'un ours noir sur un des sentiers plus bas dans la montagne. J'ai donc

(suite à la page 49)



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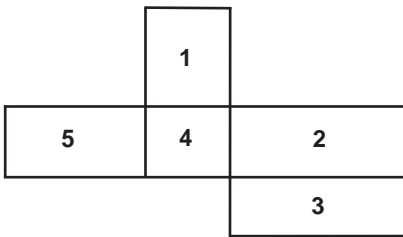
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## Images

**On the spine:** The lady beetle *Anatis labiculata* (Coleoptera: Coccinellidae) feeding on an adult *Uroleucon rudbeckiae* (Hemiptera: Aphididae). Photo: Pat MacKay

**Beneath the title:** The thistle gall fly, *Urophora cardui* (Diptera: Tephritidae), was introduced from Europe to North America for the control of Canada thistle, *Cirsium arvense*. Photo: Steve Marshall

**1.** Male Douglas-fir seed chalcid, *Megastigmus spermotrophus* (Hymenoptera: Torymidae). Photo: Dion Manastyrski

**2.** A mason wasp, probably *Ancistrocerus* sp. (Hymenoptera: Vespidae: Eumeninae). Photo: Joanne Bovee

**3.** A burnet moth, *Zygaena* sp. (Lepidoptera: Zygaenidae) on knapweed. Photo: Alicia Leroux

**4.** Checking weevil traps in strawberries. Photo: Kenna MacKenzie

**5.** *Misumena vatia* (Araneae: Thomisidae) mating and dining on a dance fly (Diptera: Empididae). Photo: Brian Klinkenberg

**Back cover:** A tropical dragonfly, *Neurothemis* sp. (Odonata: Libellulidae), cooling by thermoregulation, Thailand. Photo : Jeremy McNeil

Français à l'intérieur de la couverture avant

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Publications Mail Agreement No. 40033986  
Date of issue: March 2009

ISSN: 0071-0741