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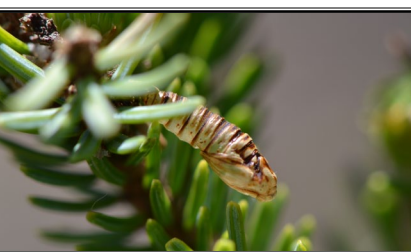


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La légende des photos de la couverture se situe sur la couverture arrière.



Calliphoridae (Diptera), Oyama, BC. Sitting on a bright chrysanthemum, this blow fly seems to be making up in aesthetics what it lacks in personal hygiene. Photo: Ward Strong

Calliphoridé (Diptère), Oyama, C.-B. Posée sur un chrysanthème coloré, cette mouche semble compenser ses lacunes en hygiène personnelle par l'esthétique. Photo : Ward Strong.



Réunion conjointe annuelle des Sociétés d'entomologie du Canada et du Manitoba

Hôtel Fairmont, Winnipeg (Manitoba)
22-25 octobre 2017

Petit, c'est beau

Tous les entomologistes savent bien que ce qui est petit est beau. Et bien que les réunions ICE 2016 et ESA-ESC Vancouver 2018 seront formidables, il est aussi agréable de ne pas être perdu dans une foule de plusieurs milliers de délégués. Au nom des Sociétés d'entomologie du Manitoba et du Canada, nous avons donc le plaisir de vous inviter à la **Réunion conjointe annuelle ESC-ESM de 2017 : Petit, c'est beau**.

Notre site, le magnifique hôtel Fairmont, est relié aux boutiques et aux restaurants du centre-ville par une série de passages couverts. De plus, la Fourche, lieu historique au confluent des rivières Assiniboine et Rouge, est à deux pas de l'hôtel. Les dates choisies pour la réunion coïncident avec les migrations spectaculaires d'oiseaux dans la vallée de la rivière Rouge et sont favorables à la collection d'insectes en fin de saison.

Les frais de l'inscription anticipée seront de 350 \$ pour les membres réguliers, 450 \$ pour les non membres, 175 \$ pour les étudiants, et l'inscription d'une seule journée se fera à 200 \$.

Oratrice principale :

- Angela Douglas
- Cornell University
- L'interface entre les insectes et les bactéries

Colloques :

- Pollinisation
- Ectoparasites
- Foresterie
- Dynamique des populations
- Commission biologique du Canada
- Étudiants des cycles supérieurs

Réunions conjointes :

Le 20 octobre Agriculture et Agroalimentaire Canada, le groupe de travail sur la lutte biologique

Les 26 et 27 octobre Forum de l'Ouest sur la lutte antiparasitaire

Si vous aimeriez organiser un colloque ou un atelier, veuillez communiquer avec :

Paul Fields, Président du comité scientifique, paul.fields@agr.gc.ca

Pour tout autre renseignement, veuillez communiquer avec :

Rhéal Lafrenière, Président général, Rheal.Lafreniere@gov.mb.ca

Site Web de la réunion : <http://home.cc.umanitoba.ca/esm/>



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

**Fairmont Hotel, Winnipeg, Manitoba,
22-25 October 2017**

Small is beautiful

All entomologists know small is beautiful. Yes ICE 2016 and ESA-ESC Vancouver 2018 will be good meetings, but it is also great not to get lost in a crowd of thousands of delegates. On behalf of the Entomological Societies of Manitoba and Canada, we are pleased to invite you to the **2017 Joint Annual Meeting ESC-ESM: Small is Beautiful.**

The beautiful Fairmont Hotel is connected through a series of walkways to shops and restaurants in downtown Winnipeg. The historic The Forks, at the junction of the Assiniboine and Red Rivers, is a short walk from the hotel. The meeting is scheduled to coincide with the spectacular bird migration along the Red River Valley and the possibility of late season insect collecting.

Early registration fees will be set at \$350 for regular members, \$450 for non-members, \$175 for students and a single day registration of \$200.

Keynote speaker:

- Angela Douglas
- Cornell University
- Interface between insects and bacteria

Symposia:

- Pollination
- Ectoparasites
- Forestry
- Population Dynamics
- Biological Survey of Canada
- Graduate Students

Associated Meetings:

October 20 Agriculture & Agri-Food Canada Working Group on Biocontrol
October 26-27 Western Forum on Pest Management

If you are interested in organizing a symposium or a workshop contact:

Paul Fields, Scientific Chair, paul.fields@agr.gc.ca

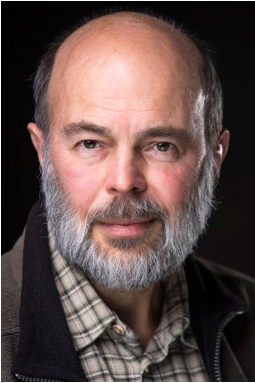
For all other inquires contact:

Rhéal Lafrenière, General Chair, Rheal.Lafreniere@gov.mb.ca

Meeting website: <http://home.cc.umanitoba.ca/esm/>

Simon Fraser University 'stars' (again!)

Greg Ehlers, SFU Creative Studio



Gerhard Gries receives Entomological Society of America Recognition Award

Simon Fraser University's Gerhard Gries is the recipient of the Entomological Society of America's 2016 Recognition Award in Insect Physiology, Biochemistry, and Toxicology. The Award, sponsored by Apex Bait Technologies, Inc., recognizes outstanding extension, research, and teaching contributions in urban entomology.

Gerhard, currently a professor in SFU's Department of Biological Sciences, is in his 13th year of an Industrial Research Chair in Multimodal Animal Communication Ecology, supported by Scotts Miracle-GRO and the Natural Sciences and Engineering Research Council of Canada. His research includes work on most sensory modalities (olfaction, vision, hearing, vibration, magneto-reception, and infra-red sensing), with a recent highlight being the identification of the bed bug aggregation pheromone (*Angew. Chem. Int. Ed.* **2015**, 54, 135–1138). Steps to commercialise this finding to facilitate detection and control of bed bugs are now underway.

Although most of Gerhard's research subjects have been of the six-legged kind, he is now also applying his expertise to mammals, specifically, to one of the world's major vertebrate pests, the brown rat (*Rattus norvegicus*), an animal with an inherent tendency to avoid new objects (viz. traps) in its territory. With the research associates in his lab, he has identified a sex attractant pheromone in the urine of male rats which, when applied to traps, increased the capture rate of females tenfold (see *Angew. Chem. Int. Ed.* **2016**, 55, 6062–6066).

Gerhard has graduated 39 Master's and 11 PhD students, published 240 peer-reviewed research articles (including 41 with undergraduate students as co-authors), filed 24 patent applications, and produced 13 scientific films in collaboration with the Institute of Scientific Film in Germany. Currently, his laboratory has 13 graduate students, 3 research associates, and many undergraduate students, often recruited from his Insect Biology class. His passion for teaching was recognized by SFU in 1994 through an Excellence in Teaching Award.

Dave Gillespie receives honorary degree

Dave Gillespie, recipient of the Society's Gold Medal in 2014 (see *Bulletin* **46**[3]: 116) and appointee as a Member of the Order of Canada in 2015 (*Bulletin* **47**[3]: 88), has received yet another accolade. At the Simon Fraser University Convocation on 7 June 2016, he received the degree of Doctor of Science, *honoris causa*, for his groundbreaking scientific achievements in the field of entomology. With over 200 publications to his name, Dave is considered the single most productive researcher in biological pest control in Canada for over the last 30 years. His pioneering contributions to this field of research have led to dramatic improvements in global agricultural practice. For the full citation and Dave's remarks to Convocation, see <http://www.sfu.ca/video-library/video/1629/view.html?jsessionid=4C9F58DBB5EEC269AF9DFA7FA4D05268>



Dave in all his splendor flanked by Chancellor Anne Giardini and President Andrew Petter

Greg Ehlers, SFU Creative Studio

STEP Corner / Le coin de la relève

Joanna Konopka and Miles Zhang



Photo LENS contest

Attention all students and early professionals,

Have you ever taken entomology-inspired pictures? Were you too shy to submit them for a photo contest or simply missed the deadline? We have a solution: **Photo LENS (Lucky ENTomology Snapshot) contest**. This is a

contest for all Students and Early Professionals to submit photos of their research and field work with no deadlines (it will run all year long). The winning photos will be featured in STEP Corner, and on the ESC blog and student

Facebook page.

Send us your photos and we will post them on Facebook for everyone to vote on. The pictures with the most votes under each category will be selected and featured each month (each month

will have a different category). Check the ESC Student/Early Professional Facebook page for the most recent category and information on where to submit your photos.

No need for fancy equipment- we want to see your creativity and how you capture your love of entomology. We look forward to seeing all your great pictures.

Research Roundup

We continue to publicize graduate student publications to the wider entomological

Concours photo LENS

Attention à tous les étudiants et jeunes professionnels.

Avez-vous déjà pris des photos inspirées de l'entomologie? Étiez-vous trop timide pour les soumettre pour un concours de photos ou avez-vous simplement manqué la date limite? Nous avons une solution : le concours **photo LENS (de l'anglais « Lucky ENTomology Snapshot »)**. Il s'agit d'un concours permettant à tous les étudiants et jeunes professionnels de soumettre des photos de leurs recherches et travaux de terrain sans date limite (à l'année longue). Les photos gagnantes seront présentées dans le coin de la relève, sur le blogue de la SEC et sur la page Facebook des étudiants.

Envoyez-nous vos photos et nous les afficherons sur Facebook pour que les gens votent. Les photos avec le plus de votes dans chaque catégorie seront sélectionnées et mise en vedette chaque mois (chaque mois aura

une catégorie différente).

Consultez la page Facebook des étudiants et jeunes professionnels de la SEC pour connaître la dernière catégorie et la façon de soumettre vos photos.



Aperçu de la recherche

Nous continuons à faire la publicité des publications des étudiants gradués auprès de la communauté entomologique via notre initiative Aperçu de la recherche. Consultez le blogue de la SEC pour les plus récents articles. Si vous voulez que votre plus récent article soit mis en vedette (ou si nous l'avons manqué le mois dernier!), envoyez-nous un courriel à entsoccan_students@gmail.com. Pour des mises à jour régulières sur la recherche

community through our Research Roundup initiative. Check out the ESC blog for most recent featured articles. If you want your recently published article featured (or we missed yours last month!), send us an email at entsoccan.students@gmail.com. For regular updates on new Canadian entomological research, you can join the ESC Students Facebook page or follow us on Twitter @esc_students.

Getting involved with the ESC

The Student and Early Professional Affairs Committee (SEPAC) is looking for new members (especially Early Professionals). Volunteering for the SEPAC is a great way to get involved with the Society and promote entomology to students across Canada. If you are interested in joining or just have suggestions for new initiatives in the coming year, email us at students@esc-sec.ca

We look forward to hearing from you,
Joanna and Miles

entomologique canadienne, adhérez à la page Facebook des étudiants de la SEC ou suivez-nous sur Twitter @esc_students.

S'impliquer au sein de la SEC

Le comité des affaires étudiantes et des jeunes professionnels cherche de nouveaux membres (particulièrement des jeunes professionnels). S'impliquer bénévolement pour le comité est une excellente façon de s'impliquer avec la Société et promouvoir l'entomologie auprès des étudiants au Canada. Si vous êtes intéressés à joindre le comité, ou si vous avez des suggestions pour de nouvelles initiatives pour la prochaine année, écrivez-nous à students@esc-sec.ca.

Au plaisir d'avoir de vos nouvelles,
Joanna et Miles

Thesis Roundup / Foisonnement de thèses

If you or a student you know has recently defended an entomology-related thesis at a Canadian University, and would like notice of this accomplishment published here and on the ESC website, please email students@esc-sec.ca with the relevant information (name, date, degree, thesis title, supervisor[s], and university).

Si vous, ou un étudiant que vous connaissez, a récemment soutenu sa thèse dans un domaine lié à l'entomologie dans une université canadienne, et que vous voulez publier l'avis de cette réalisation ici et sur le site web de la SEC, merci d'envoyer les informations pertinentes (nom, date, diplôme, titre de la thèse, directeur[s] et université) à students@esc-sec.ca.



Médaille d'or de la Société d'entomologie du Canada

Dr Guy Boivin

Dr Guy Boivin est le récipiendaire 2016 de la Médaille d'or de la Société d'entomologie du Canada. Ce prix a été créé en 1962 afin de reconnaître un accomplissement extraordinaire en entomologie canadienne. Les règles de ce prix stipulent qu'il est dédié à un accomplissement de haut niveau plutôt qu'à un niveau normal de compétence, et les domaines d'accomplissement incluent la recherche, l'éducation, le transfert de connaissance et le service envers la Société. Les accomplissements de Guy Boivin dans tous ces domaines sont définitivement supérieurs.

Guy a grandi à Montréal et son intérêt pour la biologie s'est développé à la fin des années 50 dans les Laurentides où son père avait construit une résidence d'été près d'un petit lac. Guy a obtenu son baccalauréat en biologie à l'Université de Montréal. Il est resté au même établissement pour sa maîtrise, durant laquelle il a étudié les invertébrés benthiques des rivières à l'est de la Baie James dans le nord du Québec. Pour son doctorat, Guy a changé pour l'Université McGill où il a étudié la biologie des punaises de la famille des Miridés dans les vergers de pommiers sous la supervision de Dr Robin Stewart. Guy a complété son doctorat en 1981, la même année où il a débuté son seul emploi permanent à temps plein : chercheur scientifique à Saint-Jean-sur-Richelieu au Centre de recherche et développement d'Agriculture et agroalimentaire Canada (AAC). Presqu'immédiatement après sa nomination, Guy est devenu professeur associé en entomologie à l'Université McGill, lui permettant d'offrir du mentorat aux étudiants inscrits dans ce département. Des nominations similaires ont suivies au département des sciences biologiques de l'Université de Montréal, au département de phytologie

Entomological Society of Canada Gold Medal

Dr Guy Boivin

Dr Guy Boivin is the 2016 recipient of the Entomological Society of Canada's Gold Medal. This award was established in 1962 to recognize outstanding achievement in Canadian entomology. The rules of the award stress that it is for superior accomplishment, rather than normal levels of competence, and the areas of accomplishment include research, education, extension, and service to the Society. Guy Boivin's accomplishments in all these areas are most definitely superior.

Guy grew up in Montreal, and his interest in biology developed in the late fifties in the Laurentides where his father built a summerhouse beside a small lake. For his bachelor's degree, Guy majored in biology at the Université de Montréal. He stayed at the same institution for his MSc, for which he studied the benthic invertebrates in rivers east of James Bay in northern Quebec. For his PhD, Guy moved to McGill University where he studied the biology of mirid bugs in apple orchards under the supervision of Dr Robin Stewart. Guy completed his PhD in 1981,

the same year that he began his only full-time permanent position: Research Scientist at the Saint-Jean-sur-Richelieu Research and Development Centre of Agriculture and Agri-food Canada (AAFC). Almost immediately after this appointment, Guy became an Auxillary Professor in Entomology at McGill University, allowing him to provide mentorship to students enrolled in that department. Similar appointments followed in the Department of Biological Sciences, Université de Montréal; Department of Phytology, Université Laval and Department of Biological Sciences, Université du Québec à Montréal. All four of these mentoring positions continue to this day and have provided the framework within which Guy has excelled as an educator, in addition to his exceptional research output.

A constant theme of Guy's research career has been studies of the biology and management of insect pests of fruit and vegetable crops, particularly phytophagous mirid bugs, carrot weevil, *Listronotus oregonensis* (Le Conte), and root maggots of brassicas and onions (*Delia* spp.). Many of his studies on pest insects have been designed to aid producers in decision making through providing information on monitoring techniques and criteria for management actions. Other studies address the use of natural enemies — including nematodes, pathogens, predators and parasitoids — as biological control agents within the framework of integrated pest management. Guy has effectively converted the research results into producer-friendly form and communicated them, so that they can be adopted in the real world of horticultural production. That these efforts are viewed as valuable by the horticultural producers is evidenced by awards Guy has received from them. These include the Méritas Frédéric-Trudel from the Association of Vegetable Growers in Quebec, and the Prix des Producteurs du PRISME, a consortium of producers and researchers of which Guy was a founding member.

In the late 1980s, Guy published three

de l'Université Laval, et au département de sciences biologiques de l'Université du Québec à Montréal. Ces quatre postes se poursuivent encore aujourd'hui et ont fourni un cadre dans lequel Guy a excellé comme éducateur, en plus de ses apports exceptionnels en recherche.

Une thématique constante dans la carrière en recherche de Guy est l'étude de la biologie et de la gestion des insectes ravageurs des fruits et légumes, particulièrement les punaises phytophages de la famille des Miridés, le charançon de la carotte, *Listronotus oregonensis* (Le Conte), et les mouches du chou et de l'oignon (*Delia* spp.). Plusieurs de ses études sur les insectes ravageurs ont été menées afin d'aider les producteurs dans la prise de décision en fournissant de l'information sur les techniques de surveillance et des critères pour les actions de gestion. D'autres études ont abordés l'utilisation des ennemis naturels — incluant les nématodes, pathogènes, prédateurs et parasitoïdes — comme agents de lutte biologique dans le contexte de la lutte intégrée contre les ravageurs. Guy a converti de façon efficace les résultats de recherche dans un format accessible pour les producteurs et les a communiqués, afin qu'ils puissent être adoptés dans le vrai monde de la production horticole. Que ces efforts soient vus de façon aussi importante par les producteurs horticoles est évident par les prix que Guy a reçu de leur part. Ceux-ci incluent le Méritas Frédéric-Trudel de la Fédération des producteurs maraîchers du Québec et le Prix des producteurs du PRISME, un consortium de producteurs et chercheurs dont Guy a été un membre fondateur.

À la fin des années 1980, Guy a publié trois articles sur la biologie des parasitoïdes des œufs, et ceux-ci ont été précurseurs de plus de 100 publications sur la biologie des parasitoïdes. Guy est une autorité mondiale en écologie et physiologie des parasitoïdes des œufs. Il a apporté des contributions importantes dans plusieurs domaines de recherche, incluant mais ne se limitant pas à :

papers on the biology of egg parasitoids, and these were precursors of more than a 100 publications on parasitoid biology. Guy is a world authority in egg parasitoid ecology and physiology. He has made important contributions in several different research areas, including but not limited to: patch exploitation by parasitoids, male reproductive strategies in parasitoids, and physiological ecology (especially temperature-driven processes). Guy's work is meticulous and precise. His empirical studies are not opportunistic: he has a solid conceptual foundation that is reflected in his research approach. Of significance, his work on the behavioural ecology of male parasitoids is ground-breaking and brings important new insights to 'the forgotten sex'. This has led him to rethink some of the current evolutionary concepts concerning reproductive strategies of insects. An impressive aspect of Guy's work is his application of the concepts developed in these fundamental studies to his more applied endeavours in biological control of pests.

The enthusiasm, initiative and drive that have contributed to Guy's research success have been a positive influence on many others. Discussions with Guy are intellectually stimulating and refreshing. His intellectual brilliance and enthusiasm for science have led to collaborations with colleagues worldwide, and have attracted very good graduate students. Guy has made mentoring a key part of his research program, and he has supervised or co-supervised 40 graduate students and 6 post-doctoral fellows. His laboratory provides them with an excellent working environment from both scientific and personal perspectives, and is a hive of activity where students, post-doctoral fellows, technicians and visitors readily interact and exchange ideas on all manner of topics. A measure of the quality of Guy's supervision is that about 75% of his students and postdocs have made a career in the biological sciences, about half have obtained a position in research, and about a third have become principal investigators or professors. In addition to mentoring, Guy is

l'exploitation des agrégats par les parasitoïdes, les stratégies de reproduction des mâles parasitoïdes, et l'écologie physiologique (particulièrement les processus déterminés par la température). Le travail de Guy est méticuleux et précis. Ses études empiriques ne sont pas opportunistes : il a une base conceptuelle solide qui se reflète dans son approche en recherche. Son travail sur l'écologie comportementale des parasitoïdes mâles est pionnier et apporte de nouveaux aperçus importants sur le « sexe oublié ». Ceci l'a amené à repenser certains concepts évolutifs actuels concernant les stratégies de reproduction des insectes. Un aspect impressionnant du travail de Guy est son application des concepts développés dans ces domaines fondamentaux à des aspects plus appliqués en lutte biologique contre les ravageurs.

L'enthousiasme, l'initiative et l'énergie qui ont contribué au succès de Guy en recherche ont eu une influence positive sur plusieurs autres. Les discussions avec Guy sont intellectuellement stimulantes et rafraîchissantes. Ses capacités intellectuelles et son enthousiasme pour la science ont mené à des collaborations avec des collègues du monde entier, et ont attiré plusieurs très bons étudiants diplômés. Guy a fait du mentorat une partie clé de son programme de recherche, et il a supervisé ou co-supervisé 40 étudiants diplômés et 6 chercheurs postdoctoraux. Son laboratoire leur fournit un excellent environnement de travail d'un point de vue autant scientifique que personnel, et est une ruche bourdonnante d'activités où les étudiants, chercheurs postdoctoraux, techniciens et visiteurs interagissent et échangent des idées sur tous les sujets possibles. Une mesure de la qualité de la supervision de Guy est qu'environ 75% de ses étudiants et postdocs ont fait carrière dans les sciences biologiques, environ la moitié ayant obtenu un poste en recherche et le tiers étant chercheurs scientifiques ou professeurs. En plus du mentorat, Guy est en demande pour enseigner des cours. Il enseigne un

in demand for classroom teaching. He teaches a graduate course in parasitoid ecology at McGill University, and regularly lectures at the Université Catholique de Louvain, Belgium.

The productivity and impact of Guy and his laboratory are outstanding. He has published more than 230 peer-reviewed journal articles, many in top ranked international journals. Four of these articles have received more than 100 citations. He has co-authored three books, and is an author or co-author of 22 book chapters. In addition, more than 200 non-refereed publications and reports bear his name. Guy and members of his laboratory have made more than 400 presentations at scientific conferences and institutions that span 5 continents; among these are more than 70 presentations in European countries, and 65 at ESC meetings.

Despite his hectic schedule, Guy Boivin has taken the time to support the scientific community in many ways. He is a frequent participant in national and international granting agency panels. He has taken leadership in organizing international meetings, including the Conférence Internationale Francophone d'entomologie in Montreal in 2002, and the third International Entomophagous Insects Conference in Magog in 2013. He served as editor-in-chief of *Phytoprotection* from 1985–1990, and currently serves on the editorial boards of the *Annales de la Société Entomologique de France* and *Biological Control*. He has served the Société d'Entomologie du Québec (SEQ) as vice-president and president, lead the organizing committee for the 2009 SEQ annual meeting, and organized a symposium on the use of *Trichogramma* in forestry for the 2015 joint annual meeting of SEQ and ESC in Montreal. For ESC, Guy has been a member of the publications committee, served as director-at-large from 1990–1993, and was president of the Society in 1995–1996.

Both his employer, and the scientific societies to which Guy belongs, have recognized the outstanding contributions Guy has made during his career. In 1996, he

cours gradué en écologie des parasitoïdes à l'Université McGill et donne régulièrement des cours à l'Université catholique de Louvain en Belgique.

La productivité et l'impact de Guy et son laboratoire est remarquable. Il a publié plus de 230 articles dans des revues avec évaluation par les pairs, plusieurs dans des revues internationales de haut niveau. Quatre de ces articles ont reçu plus de 100 citations. Il a co-écrit trois livres, et est auteur ou co-auteur de 22 chapitres de livre. De plus, il a publié plus de 200 publications et rapports sans évaluation par les pairs. Guy et les membres de son laboratoire ont fait plus de 400 présentations dans des conférences scientifiques et des institutions sur cinq continents ; parmi celles-ci, plus de 70 présentations dans des pays européens et 65 dans des réunions de la SEC. Malgré son horaire chargé, Guy Boivin a pris le temps de soutenir la communauté scientifique de plusieurs façons. Il a souvent participé à des panels d'agences de financement nationales et internationales. Il a organisé des réunions internationales, incluant la Conférence internationale francophone d'entomologie à Montréal en 2002 et la troisième Conférence internationale sur les insectes entomophages à Magog en 2013. Il a servi comme éditeur-en-chef de *Phytoprotection* de 1985 à 1990 et est présentement sur le comité éditorial des *Annales de la Société Entomologique de France* et de *Biological Control*. Il a servi la Société d'entomologie du Québec (SEQ) comme vice-président et président, a présidé le comité organisateur de la réunion annuelle de la SEQ en 2009 et a organisé un symposium sur l'utilisation des trichogrammes en foresterie à la réunion conjointe annuelle de la SEQ et de la SEC à Montréal en 2015. Concernant la SEC, Guy a été membre du comité des publications, a servi comme conseiller de 1990 à 1993, et a été président en 1995-1996.

Autant son employeur que les sociétés scientifiques dont Guy est membre ont reconnu les contributions remarquables que Guy a

received an Agcellence Award from AAFC for exceptional achievement in the agrifood sector. In 2002, Guy's research to further sustainable vegetable production with reduced pesticide use was recognized by a Government of Canada 5NR Science Award for leadership in sustainable development. The SEQ recognized Guy's contributions to entomology with the Léon Provancher Award (1985) and with its highest award, the Distinction Entomologique (2007) for exceptional achievement in entomology in Québec. In 2008, Guy received the R.-O. Paradis/C. Ritchot Award of the Société de Protection des Plantes du Québec. In 1988, Guy received the ESC's C. Gordon Hewitt Award for outstanding achievement in Canadian entomology by a young entomologist, and 10 years later, Guy was named a Fellow of the Entomological Society of Canada. The ESC is pleased to recognize Guy's outstanding achievements with the 2016 ESC Gold Medal.

apportées durant sa carrière. En 1996, il a reçu le prix Agcellence de AAC pour une réalisation exceptionnelle dans le secteur agroalimentaire. En 2002, les recherches de Guy pour une production plus durable des légumes en utilisant moins de pesticides ont été reconnues par le Prix Science des 5RN du Gouvernement du Canada pour le leadership en développement durable. La SEQ a reconnu les contributions de Guy en entomologie avec le prix Léon Provancher (1985) et son prix le plus élevé, la distinction entomologique (2007) pour des accomplissements exceptionnels en entomologie au Québec. En 2008, Guy a reçu le prix R.-O. Paradis/C. Ritchot de la Société de protection des plantes du Québec. En 1988, Guy a reçu le prix C. Gordon Hewitt de la SEC pour ses accomplissements exceptionnels en entomologie canadienne par un jeune entomologiste, et 10 ans plus tard, Guy a été nommé Membre associé de la Société d'entomologie du Canada. La SEC est heureuse de reconnaître les accomplissements remarquables de Guy avec la médaille d'or 2016 de la SEC.



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Prix C. Gordon Hewitt

Dr Amro Zayed

Dr Amro Zayed, professeur agrégé et titulaire de la chaire de recherche York en génomique, Département de biologie, Université York, est le récipiendaire du prix C. Gordon Hewitt de la Société d'entomologie du Canada 2016 pour une contribution exceptionnelle à l'entomologie canadienne par un jeune scientifique. Le prix honore la mémoire de C. Gordon Hewitt qui était entomologiste du Dominion de son doctorat en 1909 à son décès en 1920, et qui a profondément influencé le développement de l'entomologie économique et la conservation de la faune au Canada.

Amro Zayed a reçu un BSc(Hons) en science de l'environnement de l'Université York, et son projet— sur la génétique des abeilles Halictidae de Floride — s'est fait dans le laboratoire de Dr Laurence Packer. Après son baccalauréat, Amro a immédiatement débuté un doctorat dans le laboratoire Packer, ses recherches portant sur l'application de la théorie et méthodologie génétiques à la conservation des abeilles. Ses recherches doctorales ont renversé l'hypothèse populaire que les insectes haplodiploïdes sont immunisés contre les sources d'extinction génétiques, et a mené à neuf publications, plusieurs d'entre elles dans des revues internationales prestigieuses. Deux publications auront probablement un impact à long terme. Dans un article dans *Proceedings of the National Academy of Sciences (PNAS)*, Amro a montré que le mécanisme de déterminisme du sexe à un locus complémentaire chez la plupart des hyménoptères résulterait en de hautes fréquences de mâles diploïdes stériles dans de petites populations. Le « vortex d'extinction des mâles diploïdes » implique que les populations d'abeilles sont beaucoup plus susceptibles d'extinction que les

C. Gordon Hewitt Award

Dr Amro Zayed

Dr Amro Zayed, Associate Professor and York Research Chair in Genomics, Department of Biology, York University, is the recipient of the 2016 Entomological Society of Canada's C. Gordon Hewitt Award for outstanding achievement in Canadian entomology by a young scientist. The award honours the memory of C. Gordon Hewitt who was Dominion Entomologist from the time of his doctorate in 1909 until his death in 1920, and who profoundly influenced the development of economic entomology and wildlife conservation in Canada.

Amro Zayed received a BSc (Hons) in Environmental Science from York University, and his honours thesis project — on the genetics of halictid bees from Florida— was in the laboratory of Dr Laurence Packer. Following his bachelor's degree, Amro proceeded immediately to a PhD in the Packer laboratory, with research focussing on the application of genetic theory and methodology to bee conservation. His PhD research overturned the popular hypothesis that haplodiploid insects are immune from

genetic sources of extinction, and yielded nine publications, several of them in prestigious international journals. Two publications are likely to have particularly long term impacts. In a paper in the *Proceedings of the National Academy of Sciences (PNAS)*, Amro showed that the single locus complementary sex determination mechanism in most Hymenoptera would result in high frequencies of sterile diploid males in small populations. The “diploid male extinction vortex” implies that bee populations are far more susceptible to extinction than are organisms with chromosomal sex determination. The paper drew immediate attention from the National Academy’s working group on pollinator decline, and sparked multimillion dollar research grants to European researchers to investigate the matter further. A second paper from Amro’s PhD work demonstrated that the solitary bee *Lasioglossum leucozonium* (Schrank), which was introduced to North America, most likely arrived as one, single mated female. The ramifications of this finding are enormous — especially in light of cutbacks to the agencies responsible for detecting potential invasive species.

Amro completed his doctorate in 2006 and, following post-doctoral studies at the University of Illinois, returned to his alma mater in 2009 as a faculty member. Since then, he has developed a world-leading research program on honey bee genomics. He began by elucidating fundamental relationships between genetic recombination, genome structure, and caste divergence in bees. He followed this with a large-scale study of the population genomics of honey bees, which involved sequencing the genomes of 50 different honey bee workers from across the globe. This study provided the first molecular evidence of kin selection by demonstrating that genes expressed in sterile honey bee workers evolve through positive selection, and was featured on the cover of *PNAS*. Amro’s group showed that managed honey bees have more genetic diversity than their wild progenitors, thus overturning the popular hypothesis that managed bees

organismes avec déterminisme chromosomal du sexe. L’article a immédiatement attiré l’attention du groupe de travail sur le déclin des pollinisateurs de l’académie nationale, et a mené à des subventions de recherches de plusieurs millions de dollars pour des chercheurs européens qui approfondissent le sujet. Un deuxième article du travail de doctorat d’Amro démontre que l’abeille solitaire *Lasioglossum leucozonium* (Schrank), qui a été introduit en Amérique du Nord, est probablement arrivée par une seule femelle accouplée. Les ramifications de cette trouvaille sont énormes – particulièrement à la lumière des compressions dans les agences responsables de détecter des espèces envahissantes potentielles.

Amro a complété son doctorat en 2006 et, après des études post-doctorales à l’Université de l’Illinois, est retourné à son alma mater en 2009 comme membre du corps professoral. Depuis, il a développé un programme de recherche de niveau mondial sur la génomique des abeilles à miel. Il a débuté en élucidant les relations fondamentales entre la recombinaison génétique, la structure du génome et la divergence de castes chez les abeilles. Il a continué avec une étude à grand échelle de la génomique des populations d’abeilles à miel, qui a impliqué le séquençage du génome de 50 abeilles ouvrières différentes à travers le monde. Cette étude a fourni les premières preuves moléculaires de sélection de parentèle en démontrant que les gènes exprimés chez les abeilles ouvrières stériles ont évolué par sélection positive, et a été mis de l’avant sur la page couverture de *PNAS*. Le groupe d’Amro a montré que les abeilles domestiques commerciales ont davantage de diversité génétique que leurs ancêtres sauvages, retournant ainsi l’hypothèse populaire que les abeilles commerciales ont une diversité génétique réduite. Son groupe a aussi joué un rôle majeur dans un consortium international qui a séquençé et analysé le génome de 10 espèces d’abeilles et a publié les résultats en 2015 dans la revue *Science*.

En plus de ses travaux fondamentaux,

have reduced genetic diversity. His group also played a major role in an international consortium that sequenced and analysed the genomes of 10 bee species and published the results in 2015 in the journal *Science*.

In addition to fundamental research, Amro's group carries out applied research on honey bee health. Early in 2015, he and Australian colleagues developed a genetic test for detecting Africanized honey bees that can greatly reduce the risk of accidentally introducing Africanized honey bees to Canada. He is currently pioneering the use of association mapping to identify specific mutations that are associated with the hygienic behaviour of honey bee colonies – a trait that enhances the resistance of honey bees to several pests and pathogens. He is co-leading a Genome Canada-funded project (\$7.3 million over 4 years) to develop marker-assisted breeding in honey bees. Finally, his group is carrying out a large-scale study on the effects of neonicotinoid insecticides on honey bee health in Ontario and Quebec.

Amro has attracted some of Canada's brightest students, and these students have flourished and excelled under his direction. He has graduated four MSc students and is now supervising four PhD students and two MSc students. In addition, his laboratory has hosted two post-doctoral fellows and two research associates. Amro has also mentored more than 71 undergraduate students, including 10 NSERC Undergraduate Student Research Awardees. He teaches undergraduate and graduate courses in genetics and genomics, and guest lectures in a wide range of courses.

Amro has 37 peer-reviewed publications published or in press. Many are very high impact papers on honey bee genomics in prestigious international journals such as *Science*, *PNAS*, *Proceedings of the Royal Society of London B* and *PLoS ONE*, or in top subject-oriented journals such as *Apidologie*, *Conservation Biology* and *Molecular Ecology*. He has authored or co-authored five invited reviews in major journals, including one in *Annual Review of Genetics*. He was guest

le groupe d'Amro mène des recherches appliquées sur la santé des abeilles à miel. Au début de 2015, lui et des collègues australiens ont développés un test génétique pour détecter les abeilles africanisées pouvant grandement réduire le risque d'introduire accidentellement les abeilles africanisées au Canada. Il est pionnier dans l'utilisation de la cartographie par analyse d'association pour identifier les mutations spécifiques qui sont associées avec le comportement hygiénique des colonies d'abeilles – un trait qui augmente la résistance des abeilles à plusieurs ravageurs et pathogènes. Il co-dirige un projet financé par Genome Canada (7.3 millions\$ sur 4 ans) pour développer la reproduction en utilisant des marqueurs chez les abeilles à miel. Finalement, son groupe mène une étude à grande échelle sur les effets des insecticides néonicotinoides sur la santé des abeilles en Ontario et au Québec.

Amro a attiré certains des étudiants les plus brillants du Canada, et ces étudiants ont prospéré et excellé sous sa supervision. Il a formé quatre étudiants à la maîtrise et supervise actuellement quatre étudiants au doctorat et deux à la maîtrise. De plus, son laboratoire a accueilli deux chercheurs postdoctoraux et deux associés de recherche. Amro a également dirigé plus de 71 étudiants de premier cycle, incluant dix détenteurs des bourses de recherche du 1^{er} cycle du CRSNG. Il enseigne des cours de premier cycle et cycles supérieurs en génétique et génomique, et donne des lectures invitées dans plusieurs cours.

Amro a 37 publications évaluées par les pairs publiées ou sous presse. Plusieurs sont des articles à très fort impact sur la génomique des abeilles dans des revues internationales prestigieuses telles que *PNAS*, *Proceedings of the Royal Society of London B* et *PLoS ONE*, ou dans des revues thématiques supérieures comme *Apidologie*, *Conservation Biology* et *Molecular Ecology*. Il est auteur ou co-auteur de cinq articles de synthèse invités dans des revues majeures, incluant une dans *Annual Review of Genetics*. Il a été éditeur invité sur

editor of a special volume of *Advances in Insect Physiology* on the genomics, physiology and behaviour of social insects. Amro has presented more than 50 invited seminars nationally and internationally, and his students have made almost 60 conference presentations, including 13 at Entomological Society of Canada or Entomological Society of Ontario meetings.

In service of the scholastic community, Amro is a very active member of the International Union for the Study of Social Insects and is one of two Canadians on the editorial board of *Insectes Sociaux*. He has organized five major scientific symposia including a symposium on the evolution of insect sociality at the 2016 International Congress of Entomology. He also devotes his expertise to the support of applied apiculture and pollinator conservation in Canada. He has advisory roles with the Canadian Association of Professional Apiculturists, the Ontario Animal Health Network, and the Ontario Apiculture and Pollination Research and Services Committee. He and his students have made many research and extension presentations to apiculturists and concerned members of the public. Public engagement with science is an important element of Amro's activities. He gives many media interviews with topics that have ranged from bee biology to the genetics of red hair. He participates in a range of programs designed to enhance scientific understanding by the media and the public — particularly young people.

In recognition of these outstanding achievements, the Entomological Society of Canada is pleased to bestow the 2016 C. Gordon Hewitt Award on Dr Amro Zayed.

un volume spécial dans *Advances in Insect Physiology* sur la génomique, la physiologie et le comportement des insectes sociaux. Amro a présenté plus de 50 séminaires invités nationalement et internationalement, et ses étudiants ont donné près de 60 présentations dans des conférences, incluant 13 aux réunions de la Société d'entomologie du Canada ou de l'Ontario.

En termes de service à la communauté académique, Amro est un membre très actif de l'Union internationale pour l'étude des insectes sociaux et est un des deux Canadiens sur le comité éditorial de *Insectes Sociaux*. Il a organisé cinq symposiums scientifiques majeurs incluant un symposium sur l'évolution de la socialité des insectes au congrès international d'entomologie 2016. Il a également dévoué son expertise au soutien de l'apiculture appliquée et la conservation des pollinisateurs au Canada. Il a des rôles de conseiller pour l'association canadienne des apiculteurs professionnels, le réseau de santé animale d'Ontario, et le comité de recherche et services pour l'apiculture et la pollinisation de l'Ontario. Lui et ses étudiants ont fait des nombreuses présentations de recherche et de vulgarisation aux apiculteurs et membres intéressés du public. L'engagement du public dans la science est un élément important des activités d'Amro. Il donne de nombreuses entrevues dans les médias sur des sujets allant de la biologie des abeilles à la génétique des cheveux roux. Il participe à divers programmes visant à améliorer la compréhension scientifique par les médias et le public — particulièrement les jeunes.

En reconnaissance de ces accomplissements remarquables, la Société d'entomologie du Canada est heureuse de remettre le prix C. Gordon Hewitt 2016 à Dr Amro Zayed.



Fellow of the Entomological Society of Canada

Dr Valerie Behan-Pelletier

Dr Valerie Behan-Pelletier is a nationally and internationally recognized expert on the systematics and ecology of oribatid mites (Acari: Oribatida). She has published over 140 publications on the systematics, faunistics, biogeography and ecology of this arthropod group. She has edited or coauthored several books, and one of the book chapters that she published is now the main reference for oribatid systematics (Norton and Behan-Pelletier 2009). She has essentially developed on her own the oribatid section of the Canadian National Collection of Insects, Arachnids and Nematodes, so that it is now one of the largest and best curated collections of oribatid mites in the world, and a reference and legacy for Canadians doing ecological and taxonomic research. Although her research has targeted the taxonomy of mites, she has made substantial contributions in biodiversity and ecological assessments of the Canadian Arctic, North American grasslands, and canopies of West Coast rainforests; the use of mites as indicators of soil health; and the role of soil biodiversity in human societies. As a distinguished visiting lecturer, Valerie taught at the Acarology Summer Program of The Ohio State University for 8 years. She has co-supervised and mentored a number of national and international graduate students, some of whom became professors or research

Membre associé de la Société d'entomologie du Canada

Dr Valerie Behan-Pelletier

Dr Valerie Behan-Pelletier est reconnue nationalement et internationalement comme experte de la systématique et de l'écologie des acariens oribates (Acari : Oribatida). Elle a publié plus de 140 publications sur la systématique, la faunistique, la biogéographie et l'écologie de ce groupe d'arthropodes. Elle a édité ou co-écrit plusieurs livres, et un des chapitres de livre qu'elle a publié est maintenant la référence principale pour la systématique des oribates (Norton et Behan-Pelletier 2009). Elle a essentiellement développé sa propre section sur les oribates dans la Collection nationale d'insectes, d'arachnides et de nématodes, si bien qu'il s'agit maintenant d'une des collections d'acariens oribates les plus grandes et les mieux entretenues au monde, et il s'agit d'une référence et d'un héritage pour les Canadiens qui font de la recherche en écologie et taxonomie. Bien que ses recherches aient abordées la taxonomie des acariens, elle a apporté des contributions substantielles pour : l'évaluation de la biodiversité et de l'écologie de l'Arctique canadien, des prairies nord-américaines et des canopées des forêts pluviales de la côte Ouest; l'utilisation des acariens comme indicateur de la santé du sol; et le rôle de la biodiversité du sol dans les sociétés humaines. En tant que conférencière invitée distinguée, Valerie a enseigné dans le programme d'acarologie d'été de l'Université de l'état d'Ohio pendant 8 ans. Elle a co-supervisé et guidé bon nombre d'étudiants diplômés nationaux et internationaux, certains étant devenus professeurs ou professionnels de recherche. Valerie a influencé la recherche de différentes autres façons : comme réviseuse pour beaucoup de manuscrit scientifique, dans un rôle éditorial pour des revues, comme secrétaire exécutive du congrès international d'acarologie, comme membre du comité scientifique de la Commission biologique du Canada, comme membre du comité de

professionals. Valerie has influenced research in several other capacities: as a reviewer for numerous scientific manuscripts, in an editorial role for journals, as Executive Secretary of the International Congress of Acarology, as member of the Scientific Committee of the Biological Survey of Canada, as a member of NSERC selection Committees, and in national and international research projects (e.g., Canadian Grasslands Project, Project ALAS, Costa Rica, ICSU-SCOPE Project on Soils and Sediment Biodiversity and Ecosystem Functioning, and the Global Soil Biodiversity Atlas).

Reference

Norton, R.A., and Behan-Pelletier, V. M. 2009. Oribatida. In *A Manual of Acarology*. 3rd ed. Edited by G.W. Krantz and D.E. Walter. Texas Tech. University Press, Lubbock, Texas. pp. 430–564.

sélection du CRSNG, et dans des projets de recherche nationaux et internationaux (p. ex. le projet Canadian Grasslands, le projet ALAS, Costa Rica, le projet ICSU-SCOPE sur la biodiversité et le fonctionnement des écosystèmes du sol et des sédiments, et Global Soil Biodiversity Atlas).

Référence

Norton, R.A., et Behan-Pelletier, V. M. 2009. Oribatida. In *A Manual of Acarology*. 3rd ed. Edited par G.W. Krantz and D.E. Walter. Texas Tech. University Press, Lubbock, Texas. pp. 430–564.



Membre honoraire

Dr Cedric Gillott

Dr Cedric Gillott, professeur émérite du département de biologie de l'Université de Saskatchewan, est un éminent scientifique, éducateur et supporteur de longue date de la SEC, ce qui lui a valu la médaille d'or en 2007. Bien que retraité de l'enseignement, Cedric continue sa brillante carrière en recherche, durant laquelle il a généré une quantité importante de connaissances sur la biologie reproductive de *Melanoplus sanguinipes*, et par ce biais, a grandement fait avancer la compréhension du rôle des glandes accessoires des mâles dans le succès reproducteur des insectes. Cedric a publié plus de 90 articles et chapitres de livre révisés par les pairs, incluant des articles de synthèses d'influence dans *Annual Reviews of Entomology* et une synthèse invitée C.P. Alexander dans *The Canadian Entomologist*. Son travail le plus connu est le livre «

Honorary Member

Dr Cedric Gillott

Dr Cedric Gillott, Professor Emeritus, Department of Biology, University of Saskatchewan, is an eminent scientist, educator, and long-standing supporter of ESC, which awarded him its Gold Medal in 2007. Although retired from teaching, Cedric continues his distinguished research career, in which he has generated a significant body of knowledge on the reproductive biology of *Melanoplus sanguinipes*, and through this, has greatly

advanced the understanding of the role of male accessory glands in the reproductive success of insects. Cedric has published over 90 peer reviewed papers and book chapters, including influential reviews in *Annual Reviews of Entomology* and a C.P. Alexander Invited Review in *The Canadian Entomologist*. His most generally known work is the text book “*Entomology*”, the third edition of which was published in 2005. Cedric has a distinguished career as an educator at the University of Saskatchewan where he taught general biology, general entomology and advanced courses in physiology. He has supervised 22 graduate students in research projects ranging from insect neuro-endocrine processes to economic entomology, and has supervised 8 post-doctoral fellows. Several of his former students are now prominent Canadian entomologists. He has received over 70 competitive research awards, totaling more than \$2 million, and including a nearly 30-year uninterrupted span of NSERC/NRC funding. Cedric has been an active member of regional, national and international entomological societies throughout his career. He has been a member of the Entomological Society of Saskatchewan (ESS) since 1965 and has served as President, Secretary-Treasurer and chair of several committees. He has served on the Scientific Program Committee for three joint meetings of ESS and ESC. He has been a member of ESC since 1968 and has served on the Scholarship Committee and the Governing Board (1993–1996). He is currently the Chair of the ESC Heritage Committee and Editor of the ESC *Bulletin*.

Entomology », la troisième édition ayant été publiée en 2005. Cedric a une brillante carrière comme éducateur à l’Université de Saskatchewan où il a enseigné la biologie générale, l’entomologie générale, et des cours avancés en physiologie. Il a supervisé 22 étudiants gradués dans des projets de recherche allant des processus neuro-endocriniens des insectes à l’entomologie économique, et a supervisé huit chercheurs postdoctoraux. Plusieurs de ses anciens étudiants sont maintenant d’éminents entomologistes canadiens. Il a reçu plus de 70 subventions de recherche, totalisant plus de 2 millions \$, incluant près de 30 ans sans interruption de financement CRSNG/CNR. Cedric a été un membre actif des sociétés entomologiques régionales, nationales et internationales durant sa carrière. Il est membre de la Société d’entomologie de Saskatchewan (SES) depuis 1965 et a servi comme président, secrétaire-trésorier et président de plusieurs comités. Il a servi sur le comité du programme scientifique pour trois réunions annuelles conjointes de la SES et la SEC. Il est membre de la SEC depuis 1968 et a servi sur le comité des bourses étudiantes et le conseil d’administration (1993-1996). Il est actuellement président du comité du patrimoine de la SEC et rédacteur-en-chef du *Bulletin* de la SEC.



Cueing in on the Earth's magnetic field – why and how honeybees are doing it

Veronika Lambinet

The Earth's magnetic field (EMF) is an obvious and reliable source of navigational information for long-distance migratory animals such as European robins (Wiltschko & Wiltschko 1972), salmon (Putman et al. 2013), and turtles (Lohmann 1991). There are also organisms that relate to the EMF for reasons other than migration. Magnetotactic bacteria, for example, use the inclination (dip angle) of the EMF to orient towards anaerobic conditions (Blakemore 1975). Honeybees, though non-migratory, are capable of sensing the EMF (Lindauer & Martin 1968; De Jong 1982; Walker & Bitterman 1985; Liang et al. 2016; and literature cited therein) but the underlying sensory mechanisms and biological function are largely unexplored. To date, we know only that magnetoreception takes place in the abdomen of bees (Liang et al., 2016) and that swarming honeybees relate to the EMF when they build combs in a new hive (or nest cavity) according to the comb alignment of their parent hive (De Jong, 1982).

We hypothesized that the EMF sensitivity of honeybees plays a functional role also in the context of the waggle dance, a body language bees perform on vertical combs inside their hives to inform nest mates about the location of a rich food source (Von Frisch 1948). A waggle-dancing bee repeatedly describes a figure 8 while shaking her abdomen at a certain frequency (Figure 1A). The directional information to the food source is encoded in the angle between two lines, the waggle run line (the straight portion of the dance) and a reference line (Figure 1A). Gravity was implicated as the reference line (Lindauer & Nedel 1959) but the bees' waggle dance was shown to be affected by experimental manipulation of the ambient magnetic field around a hive (Lindauer & Martin 1968; Martin & Lindauer 1977), indicating that the EMF may play a role. Because the inclination of the EMF, like gravity, represents a stable line of reference, we hypothesized that waggle-dancing bees make reference to the inclination of the EMF rather than to gravity.

To test our hypothesis, we built a tri-axial Helmholtz coil system (Figure 1B) and placed an observation hive in the centre of the system. The term Helmholtz coil refers to a pair of identically wound, current-conducting coils that generate a uniform magnetic field in the common central workspace of the coils. Our *tri*-axial Helmholtz coil system allowed us to manipulate the three axes of the EMF. During experimental treatment sessions (when coils are powered up), we used the system to either suppress the EMF (Figure 1C2) or rotate its declination (the deviation from true North) from North to East (Figure 1C3). We also trained bees to visit an experimental food source 200 m north of the hive. Bees returning to the hive and then waggle dancing typically communicate the location of a food source and thus recruit nest mates to it. If waggle-dancing bees were to use the inclination of the EMF as a reference, we predicted that they would fail during treatment sessions (when the EMF is suppressed or its declination is rotated), but not during control sessions, to convey the location of the experimental food source, where we

Veronika Lambinet (vlambinet@gmail.com) is a PhD candidate at Simon Fraser University. Her current research deals with the perception of the Earth's magnetic field in honeybees. In particular, she is interested in which features of the Earth's magnetic field are used and how therefore a picture of the honeybee magnetoreceptor can be drawn.

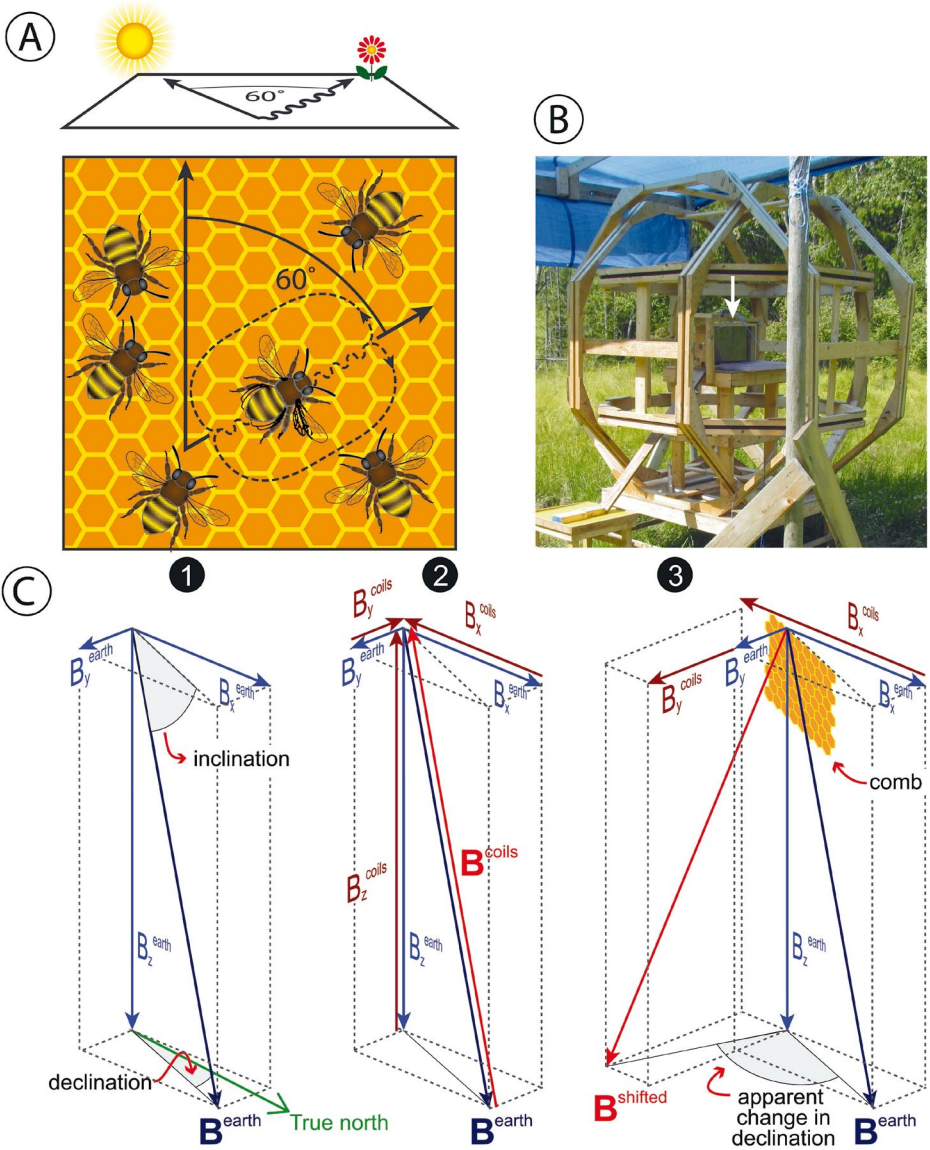


Figure 1. Experimental design to test the effect of the Earth's magnetic field on the recruitment success of waggle dancing honeybees. (A) Bottom: waggle dancing honeybee describing a figure 8 on the vertical comb in a hive; top: the angle of the waggle run relative to vertical correlates with the angle between the target food source and the azimuth of the sun (angular direction); (B) observation hive (see arrow) inside a tri-axial Helmholtz coil system capable of cancelling or arbitrarily modifying the local geomagnetic field; (C1) components (blue vectors) of the local (unmodified) geomagnetic field (B^{earth}); (C2 & C3) manipulation of field components (red vector) to cancel the local geomagnetic field (C2) or to rotate its declination to the East (C3). (From Lambinet et al. 2014).

recorded (photographed) the number of recruited nest mates. However, any manipulation of the EMF in our experiments had no significant effect on the number of bees recruited to the food source, indicating that bees do not use the EMF as a reference for aligning their waggle run, making gravity the only other plausible reference line (Lambinet et al. 2014).

Even though the bees' ability to detect the EMF has no bearing in the context of their waggle dance, this ability is likely important in other, as yet unknown, contexts of the bees' life history. We still remained interested in understanding the sensory mechanism of magnetoreception in bees and in locating their magnetoreceptor. This is challenging and comparable to searching for "the needle in the haystack" (Kirschvink et al. 1997) because the magnetoreceptor could be exceedingly small and spread over a large volume of body tissue (Kirschvink 1982).

Several models of magnetoreception have been proposed (reviewed by Johnsen & Lohmann 2008). The magnetite-based model, which may apply to honey bees, proposes that animals sense the geomagnetic field through magnetite crystals (Fe_3O_4) present in their bodies (Kirschvink et al. 2001). When tracking the direction of the geomagnetic field, the distribution of these crystals would change, thus affecting ion channels in cellular membranes and enabling signal transduction (Winklhofer & Kirschvink 2010). Magnetite-based magnetoreception has been shown, or suggested, to occur, in algae (De Araujo et al. 1986), ants (De Oliveira et al. 2010), sockeye salmon (Sakaki et al. 1990), and several species of migratory or homing birds (Hanzlik et al. 2000; Davila et al. 2003).

In our ongoing studies on magnetoreception in honeybees, we are searching for magnetite crystals in bees and investigating a functional linkage between these crystals and a magnetite-based magnetoreceptor. We are searching for crystals by subjecting samples of bee tagmata to analysis by a superconducting quantum interference device (SQUID; a very sensitive magnetometer capable of measuring magnetic responses of small amounts of magnetic material). We are investigating a functional linkage by testing in behavioral field experiments whether bees with an intact or experimentally impaired magnetoreceptor are able to sense a magnetic anomaly (15 Gauss) that stands out from the EMF (0.25 to 0.65 Gauss). Data on these intriguing laboratory and field experiments will be forthcoming when data collection and analyses are complete.

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I thank my supervisor Gerhard Gries, and my co-supervisor Michael Hayden, for valuable contributions and support; Marco Bieri, Katharina Reigel, Chloe Reid, Surath Gomis for help with data collections; Tristan Banwell, Lisa Stark, Michael Sivucha and Texas Creek Ranch residents for permission to run experiments on their land; and my parents Fritz Lambinet and Gitta Lambinet for supporting my education. The research was financially supported by an NSERC - Industrial Research Chair to Gerhard Gries, with Scotts Canada Ltd. as the industrial sponsor.

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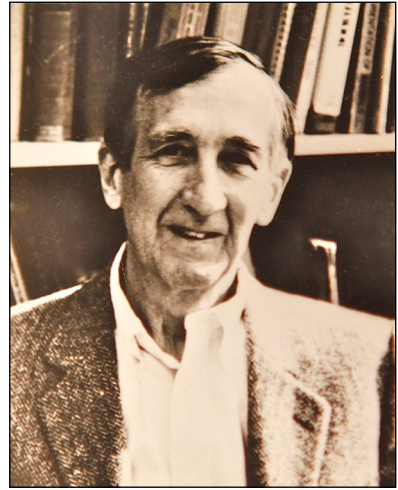
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This account is largely focussed on the activities of W. G. Evans during his years at the University of Alberta. Activities during prior years are summarized in “Entomologists of Alberta” (Riegert, 1989: 24).

“George”, as he was known to close associates, was born in Swansea, Wales, where he received his elementary education before moving to the USA. He attended Cornell University, receiving his BSA in 1952, MSc in 1954, and PhD in 1956, taking up a faculty position at the University of Alberta in 1958. On 1 September 1988, George retired as a Professor from the Department of Entomology, Faculty of Agriculture, University of Alberta. For the 30 years that George was a department member, he lectured in Insect Toxicology, Applied Entomology, Insect Ecology, and Forest Entomology. For much of that period, he served as Director of the Department’s George Lake Entomological Field Station. In 1962, George served as President of the Entomological Society of Alberta.



**William G. Evans
(1923 - 2015)**

At the graduate level of education, he was primary advisor of 23 students, each of whom he encouraged to investigate ecological aspects of insects that the student, through previous observation or reading, found especially appealing or challenging. Resulting theses in total informed about members of eight insect orders, and treated subjects ranging from autecological reproductive behavior to community ecology of parasitoids and even systematics of aquatic shore bugs.

In addition to guiding the programs of his students, George carried on his own research. He is best described as an experimental ecologist, with an intense interest in chemical and physical aspects of orientation. His experimental work was careful and thorough and when it led into the realm of morphology George proved to be adept and skillful in the application of microanatomical tools.

He was well known for his studies of infrared radiation in relation to the buprestid beetle species *Melanophila acuminata* DeGeer. George discovered and described the infrared receptors in the adults of that species, making it possible for them to find and exploit forest fires especially as sites for reproductive activity (Evans, 1964).

Much of his field work was undertaken in the Alberta prairie, in the vicinity of the characteristic alkali ponds (sloughs), where George’s observations and experiments demonstrated that the resident carabid beetles and saldid bugs recognized their habitats through chemical mediation.

The intertidal arthropod fauna of the Pacific Coast attracted George’s attention. In 1968, he took part in Cruise 18 of Stanford Oceanic Expeditions that surveyed the Pacific coastline from Mexico to Peru. By-products of his efforts were discovery of a new genus and species of saldid bug (*Paralosalda innova* Polhemus and Evans), and a tachyine carabid (*Tachysbembix* sp.), awaiting description.

Additionally, George investigated the way of life of the intertidal, crevice-inhabiting pogonine carabid beetle species, *Thalassotrechus barbarae* Van Dyke, discovering how its activity is regulated by circadian and circatidal rhythms, noting that “this is the first record of an essentially terrestrial animal that has an endogenous tidal activity rhythm”. An extension of his interest in

the intertidal arthropods is summarized in Evans (1980).

The tragic Californian Santa Barbara Oil Spill of 1969 attracted George's attention. His investigation led to the discovery that the heavily oiled high intertidal zone near Santa Barbara was bereft of its population of *T. barbara*e, and of other characteristic intertidal invertebrate residents. Expressing his beliefs and concerns about conservation, George concluded this paper as follows: ".....it is about time for biologists and conservationists to become just as concerned about the effects of pollution on insects and other invertebrates as on the more familiar larger animals" (Evans, 1970: 90).

Like most entomologists of his era, George Evans pursued his science with enjoyment and quiet enthusiasm, emotions he was anxious to share with others, and in particular with those who regarded themselves as amateurs. In his Presidential address to the members who attended the 1962 meeting of the Entomological Society of Alberta he stated: "There are so many insects yet to be described and so little we know of the vast majority that are named that we need all the help we can get. I therefore state for the record of the Proceedings of the Society that we need amateurs and we should encourage them as much as we can". True to those words, in subsequent years, the Society did encourage amateurism, even welcoming some of them to its executive ranks, including that of President.

As Professor Emeritus at the University of Alberta, George continued his research for many years, publishing his final paper at the age of 87 (Evans, 2010).

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George Ball
Edmonton

Bumble Bees of North America – An Identification Guide.

Paul Williams, Robbin Thorp, Leif Richardson & Sheila Colla. 2014. Princeton University Press. 208 pp. Paperback. ISBN 978-0-691-15222-6. US\$24.95.

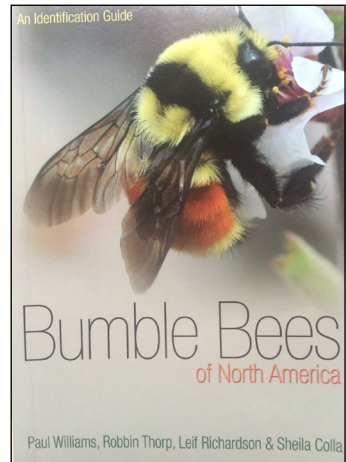
Bumble Bees of North America is an identification guide to the 46 bumble bee species of the continent that occur north of Mexico. The first 10 chapters of the 208 page book take us only to page 48, with the bulk of the book being devoted to species by species identification. As the first sentence in the Introduction states: “Everybody likes bumble bees.” How can you not like these cute, fuzzy, hardworking creatures? Whether you are an entomologist or an amateur naturalist, you will certainly appreciate this book.

The Introduction gives an excellent overview of bumble bees’ world distribution, colony/life cycle and their importance in both natural ecosystems and as “hired” pollinators of cultivated plants. It also introduces us to cuckoo bumble bees, of the subgenus *Psithyrus*, which are social parasites of other bumble bees. The Introduction ends with a review of how bumble bees interact with plants.

The next two chapters are about observing and attracting bumble bees. There are tips on when, where and how to observe bumble bees. I liked the tip of having dry absorbent paper in your clear vial, for the captured bee to hang onto. It helps the bee to be less restless and easier to photograph. If it is your desire to kill and keep the bee, the book provides tips on how to wash and pin your specimen. Bumble bees required food sources, preferred nesting and overwintering sites are also discussed so that you can attract bumble bees to your own garden. The following chapter is also helpful in teaching how to attract bumble bees because it is a forage guide by ecoregion (e.g., Tundra, Eastern Temperate Forest). The forage guide indicates the plants that bumble bees have been found foraging on and has the plants listed by both common and scientific name.

Chapter 5 tells us how the maps and seasonal activity of bumble bees were determined. The authors assembled a database of over 250,000 digitized and georeferenced bumble bee collections to interpret species distribution, food preferences and seasonal activity. The collection dates range from 1844 to present day and the records per species range from 20 to more than 23,000! The authors do stipulate that there are areas of the continent that are under-surveyed. It is also noted that the areas on the maps listed as a suitable climate for a particular species are ranges that are predicted using a model of georeferenced bumble bee presence data combined with climatic data.

The next chapter discusses the decline of bumble bees and their conservation. We learn that up to 50% of North American bumble bee species might be at risk of decline. Unfortunately, *Bombus franklini* has the distinction of being the first North American bumble bee to be listed on the IUCN Red List of Threatened Species and the rusty-patched bumble bee is the first federally listed endangered bee species in North America. The rusty-patched was one of the most common bumble bee species just 30 years ago. We are reminded that the particular differences between bumble bee species life histories are potentially the reasons why some species are becoming more common and why others are in decline. These differences may help researchers predict which species might be able to overcome climatic or environmental stresses. The book lists the six suspected threats to bumble bees as being habitat loss, insecticide use, climate change, pathogen spillover from managed hives, introduction of invasive plant or insect species and deaths of colonies, either intentionally or accidentally, by humans.



Chapter 9, on Mimicry, teaches us that there are other members of the insect world that have evolved to look and/or act like bumble bees to protect themselves. It also informs us that bumble bee species will mimic each other in their colour patterns, for protection. Unfortunately, this colour pattern mimicry means that it is not easy to distinguish individual species of bumble bees based on their colour patterns alone. To help us through this, there are *major colour-pattern groups* listed on pages 39-41 which may narrow down the possibilities. Providing you know how to distinguish bumble bees from other insects (page 42), you can proceed to the chapter on How to use this Book to Identify Bumble Bee Species.

There are two sentences that state “Females are often the majority of individuals. They have 6 segments (terga) visible dorsally on the metasoma (rather than 7 for males), the tip of their abdomen is usually more pointed, their antennae are short with 12 segments (rather than longer, with 13 segments for males), and their mandibles do not have a beard of dense long hairs.” These are extremely helpful starting points for beginners, like myself. I otherwise found the process of identifying, according to the book, kind of awkward; for example, you are directed to the main identification keys for males and females which are at the end of the book just before the glossary. However, there is a ‘quick key’ for females on page 50 that helps assign a bee into one of the four groups of species.

The chapter on Species Accounts is broken into four colour-coded groups. Group one is square or long-cheeked bees with a round angle on the midleg. Group 2 is short-cheeked bees with a round angle on the midleg. Group 3 will be medium or long-cheeked bees with a sharp angle on the midleg and Group 4 are the cuckoo bumble bees. I think that it would be useful to have a “bee diagram”, with body parts labeled, just before the Species Accounts (page 51). Instead there is a bee photo with body morphology labelled on page 201, or on page 199 – The Glossary – there are photos of bee head and leg morphology. The excellent photos throughout the book, taken by both amateur and professional photographers, are extremely helpful but one or two well placed line drawings might also be of use. It would also be appropriate to have the map symbol keys just before the Species Accounts (where the maps are) instead of back on page 30.

As is stated in the Introduction “Despite our familiarity with bumble bees and the imperative to address their conservation, in North America there remains a need for a comprehensive modern review of the status of bumble bees and an effective identification manual for those interested in them.” This book is primarily an identification manual that also describes the distribution of the species. It is the perfect size for a field guide but it may be even more helpful when you are using microscopic characteristics for identification. The Bumble Bees of North America is also an invaluable reference for those of us who want to learn about and identify which bumble bees are our neighbours. The information on bee photography and ‘How You Can Help’ by sending those photos to the Xerces Society, Bumble Bee Watch or BugGuide will hopefully help to increase the data on distribution and maybe even find some species that haven’t been seen in a while.

Tracy Ferreira
IPM Co-ordinator
Butchart Gardens, Victoria

Success strategies from women in STEM: A portable mentor. 2nd edition. Editors: Pritchard, Peggy, A. and Grant, Christine S. 2015. Academic Press, San Diego, USA. 508 pages. Price Can\$58.51 (paperback), Can\$46.90 (ebook).

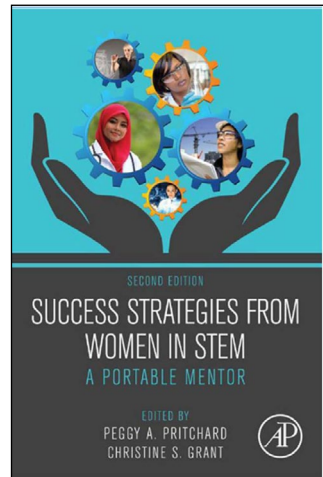
While decidedly not an entomological text, as a young female scientist I believe I was the target audience for “Success strategies from women in STEM” (an acronym for science, technology, engineering and mathematics). This is the second edition of this title, which was first published in 2006. Containing 13 chapters from “Networking” to “Mental toughness” and “Balancing professional and personal life”, this book aims to be a compendium for women as they forge their way through STEM careers. Each chapter is written by a different set of authors and stands alone, which makes it easy to pick up and read a specific section of interest. At 500+ pages, it covers many topics relevant to women in STEM fields today. Most chapters also include personal experiences from women in STEM fields, which I found increased the readability of the book in general. Each chapter also included references and links to additional information if the reader wanted to investigate any topic further.

Perhaps because each chapter was written by a different author, or perhaps because of my individual goals and career stage, I found certain chapters more pertinent than others. In particular, I found the chapter on mental toughness most useful. I will admit I had given little thought to the concept of mental toughness prior to reading this chapter, but it was without a doubt the section where I learned the most. In particular, it offered several strategies to develop and affirm mental toughness, and reinforced that these skills could be developed the same way as muscle memory. I can see myself coming back to re-read this section in the future.

Other chapters that were particularly interesting included “Networking” and “Time stress”. The networking chapter provided strategies for establishing, broadening and diversifying networks, while also explaining how women create and use networks differently than men. The chapter on “Time stress” emphasized understanding personal working styles and using that information to increase productivity. It also delineates between which tasks are urgent, which are important and how classifying items in this manner can help prioritize a long to-do list. “Time stress” acknowledges that tension and mental fatigue can result from time stress and provides suggestions for management.

The chapters on “Communicating science” and “Strategically using social media” will be useful depending on your level of experience with either. “Communicating science” offers sections on knowing your audience as well as things to consider when talking to other STEM professionals versus the general public. Many people are already using social media, but the chapter “Strategically using social media” provides tips to effectively promote science and network. For those who have never used Facebook, Twitter or LinkedIn, this chapter provides an excellent starting point for how to get started as new users.

However, there were a couple of sections which I found troublesome, the chapter on “Personal style” in particular. The section on nonverbal aspects of style was actually quite interesting and incorporated how body language, eye contact and use of space contribute to how others perceive you. My main issue was with the sections pertaining to how women should dress in the workplace. While I certainly agree that women are perceived differently than men in terms of style, I do not feel that playing in to stereotypes will do anything to solve this problem. Take

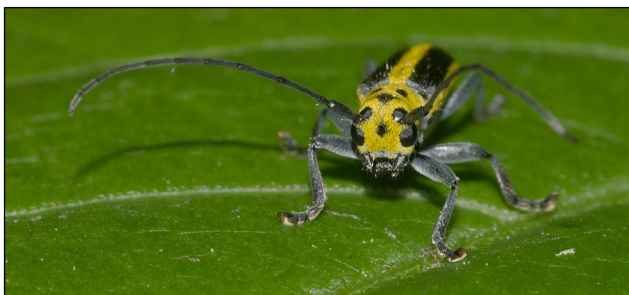


this passage on wearing jeans for example: “Even if the formal or informal dress code in your workplace includes denim, jeans are rarely a good idea. If you are in the small percentage of the population who are fit and toned and look great in jeans, you may look too sexy. Men enjoy looking at women who dress sexily—however, they don’t promote them—and other women are often disapproving. For the remaining 99% of us with imperfect bodies, jeans rarely look attractive or professional”. I agree that jeans are not necessarily appropriate attire; however, the reason behind not wearing them should have to do with professionalism in the workplace, not whether women look “too sexy” or “attractive”.

The chapter on “Balancing professional and personal lives” was also a bit disheartening. I had hoped it would provide strategies for balancing a career and family life, but most of the chapter focussed on what women would have to give up to “have it all”. Two women provide detailed stories of their paths in academe, one who had a family and decided to work part time, and another who pursued academic career but does not mention a partner or other family. I realize that being successful in academe and having a family is not an easy path, but I know of many very successful women who have done it. While there is a section at the very end of the chapter that provides “Potential strategies to help achieve career-life balance”, the vast majority of the chapter focuses on the concessions women rather than men have to make to have work-life balance, which I think does little to encourage women to continue in STEM fields.

Overall, “Success strategies for women in STEM: A portable mentor” contains some very useful information, especially for PhD students, postdocs and early career scientists intending to continue in academe. If subsequent editions of this book are published I hope that the sections on “Personal style” and “Balancing professional and personal lives” are updated to remove suggestions of what size heels women should wear while performing different tasks, and to include examples of how women have managed successful families and full time careers. There are chapters I would come back to and some that I will likely never look at again, but in this case I believe the useful information outweighs the negative.

Jess Vickruck
Brock University
St. Catharines



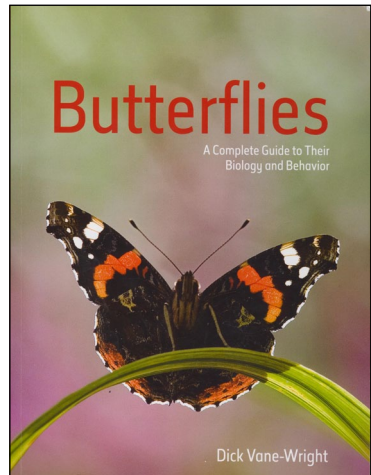
M. Larrivé

Saperda puncticollis (Coleoptera: Cerambycidae)

Butterflies: A Complete Guide to Their Biology and Behavior, 2nd Edition.

Vane-Wright, Dick. 2015. Cornell University Press, Ithaca, USA and Natural History Museum, London, UK. 128 pp. ISBN 978-1-5017-0017-0. US\$19.95 (paper)

This small book is a fine introduction to the biology of butterflies. Moreover, it is sumptuously illustrated with photos accompanied by descriptive captions that complement the text. Nearly all topics are presented in easy to comprehend text. Well explained is the magic of metamorphosis - the transformation of a chewing larva into a nectar-feeding, flying adult. The diverse strategies of feeding, courtship, and egg-laying are neatly summarized. Vane-Wright covers the almost magical migration southward of Monarch butterflies that emerge from chrysalids in Canada and fly to mountaintops in Mexico they have never before experienced. The book ends with a nice summary of a number of conservation failures and successes.



I gained new understanding of butterflies while reading this book. For example, I thought I understood the underlying cause of insect gynandromorphs - individuals that are half male, half female - but through this book I learned that they arise very differently in butterflies (one chromosome is missing from one cell in a two-celled embryo) and honey bees (fusion of two egg cells, one fertilized and the other unfertilized). I was introduced to the co-migration of four species of *Euploe* milkweed butterflies in Taiwan. Some recent topics are presented, such as the mutations induced by radiation leaked from the Fukushima reactor in Japan. I had no idea that some butterfly larvae, such as those of the *Pararge aegeria*, die if they do not consume the shell of their egg. I like that Vane-Wright retained the mystery in this phenomenon - we still do not know what those larvae obtain from their egg shell.

However, my impressions of this book are not all rosy. The amount of detail varies greatly between topics. For example, more than a page is dedicated to Bates' discovery and explanation of "Batesian" mimicry in the 1800s, with another page containing photos of the Monarch model and the Viceroy mimic. In contrast, Müllerian mimicry, in which two or more unpalatable species converge on a common colour pattern, is summarized in just one paragraph through the example of *Heliconius melpomene* and *H. erato*. The associated photos fail to convince me that predators would confuse the two *Heliconius* individuals shown; a much better depiction of the wonderful complexity of this example is Eltringham's 1916 figure (see Peter Price, 2003. Fig. 3; *American Entomologist* 49(3): p. 167. <http://ae.oxfordjournals.org/content/49/3/164.full.pdf>). The explanation of the genetic basis of gynandromorphs is allocated an entire page. In contrast, the description of the multiple mimetic forms of *Papilio dardanus*, a species once described by Poulton as "the most interesting butterfly in the world", is brief and difficult for a novice to understand. There is surprisingly no mention of thermoregulatory and basking strategies.

I encountered numerous additional inconsistencies. "Hilltopping" is the first of several mate-encounter strategies to be described, even though it is uncommon in nature, and the way it is presented suggests that it occurs predominantly in areas of "vast savannahs"; the importance of rarity of the limiting sex to the occurrence of hilltopping is not mentioned. The term "eclosion" is first used, with no definition, on page 19, three pages after the description of the eclosion process. In two places it is stated that butterflies "hibernate"; this wording is incorrect because

hibernation is a term that applies to endotherms, not ectothermic insects. Sexual dimorphism of the New Guinean birdwings, some of the most striking example of sexual dimorphism in insects, is described verbally in six lines; the photo on the next page that one expects to show male and female morphs of *Ornithoptera* instead depicts almost indistinguishable ventral views of yellow and white morphs of female sulphurs (*Colias*). Following the description of the striking sphragis, a “chastity belt” secreted by a male *Parnassius* onto a female as a mating plug, the accompanying photo shows a mating pair and not the structure of interest. Agaves (family Agavaceae), the host plants of American giant skippers, are not cacti (family Cactaceae). It is unclear why some researchers are mentioned by name while others are not. There are a number of grammatical errors that in my opinion are inexcusable, especially in a second edition of a book.

Examples in this book are drawn from all continents. North American readers will not recognize most of the species mentioned. A modest proportion of examples (18 photos) are of species that occur in Canada and the USA, 4 of which are of Monarchs. Another five are of species that also occur in Europe but only their British names are given. In contrast, there are 19 photos of South American species, 30 photos of Indo-Asian species, and 42 photos of European species.

I like most of the style of the book, but not some specific wording (highlighted in italics below). Weaver ants defend their nests with *terrible ferocity*. Caterpillars are *eating machines*. Caterpillars have *jaws*, not mandibles. I am even more troubled by some of the wording that implies that butterflies have feelings and plants intentionally make choices. For example, courting males that fail to copulate “*lose interest and fly off in hope of finding a more willing partner*” (p. 28). Plants *invent* new chemicals (p. 43). Passion vines *try a variety of tricks* to avoid egg-laying by *Heliconius*. There is no way of knowing if these are the words of the author or of the editors. I feel they are unfortunate, however, because some readers may interpret them literally and they obscure how biologists understand evolutionary processes.

I must address one other topic: two long paragraphs on the possible detrimental effects on Monarch larvae of wind-borne *Bt* corn pollen that they may consume as they eat milkweed leaves. Vane-Wright reviews the 1999 paper that first drew our attention to this potential problem (Losey *et al.*, *Nature* **399**: 214). However, he was apparently unaware of the subsequent extensive research of a group of US and Canadian scientists representing the USDA and five universities. In their comprehensive risk assessment (Sears *et al.*, 2001. *PNAS* **98**: 11937-11942), they concluded that “the impact of *Bt* corn pollen from current commercial hybrids on monarch butterfly populations is negligible”. Brower *et al.* (2012. *Insect Conserv. Diversity* **5**: 95-100) pointed to the widespread planting of herbicide-resistant corn and soybeans over central USA as the most detrimental contributor to the decline of monarchs. These more recent publications were available to Vane-Wright. Statements presented in books need to be checked carefully, both by authors and their editors.

My wife is an artist, not a biologist. She also has a keen interest in natural history. She picked up this book, opened it at random, and read with great interest about lycaenid larvae that attract ants and complete their development as carnivores within ant nests. Next, she was fascinated to learn how butterflies can be half male - half female. That this book appealed to her so strongly demonstrates to me that despite some minor failings, it should appeal to anyone with an interest in butterfly biology.

Gard W. Otis
University of Guelph
Guelph, Ontario

Books available for review / Livres disponibles pour critique

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

If you wish to review one of these books, please send an email to the Chair of the Publications Committee (Tom Lowery, Tom.Lowery@agr.gc.ca).

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

Preference will be given to ESC members.

Guidelines

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

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

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

Si vous souhaitez critiquer un de ces livres, veuillez envoyer un message au président du comité des publications (Tom Lowery, Tom.Lowery@agr.gc.ca).

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

La préférence est donnée aux membres de la SEC.

Lignes directrices

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

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

Currently available for review / Disponibles pour critique

- Mignon, J., É. Haubruge and F. Francis. 2016. Clé d'Identification des Principales Familles d'Insectes d'Europe. 96 pp., 85 figures, Presses agronomiques de Gembloux. ISBN: 978-2-87016-141-8
- Pryke, L.M. 2016. Scorpion. 221 pp., colour plates, photos. The University of Chicago Press. ISBN: 9781780235929 [soft cover]
- Dodd, A. 2016. Beetle. 192 pp., colour plates, photos, The University of Chicago Press. ISBN: 9781780234885 [soft cover]
- Gandy, M. 2016. Moth. 238 pp., colour plates, photos. The University of Chicago Press. ISBN: 9781780235851 [soft cover]
- Schmidt, J.O. 2016. The Sting of the Wild. 280 pp., 13 colour plates. Johns Hopkins University Press. ISBN: 9781421419282 [hardcover]
- Halliday, T. 2016. The Book of Frogs: A Life-sized Guide to Six Hundred species from Around the World. 656 pp., 1,230 colour plates. The University of Chicago Press. ISBN-13: 9780226184654.
- Appel, E. and S.N. Gorb. 2015. Comparative Functional Morphology of Vein Joints in Odonata. Zoologica Vol. 159; 104 pp., 53 figures, 1 table; E. Schweizerbart'sche Verlagsbuchhandlung. ISBN-978-3-510-55046-3. [paperback]
- Vega, F.E. and R.W. Hofstetter. 2015. Bark Beetles: Biology and Ecology of Native and Invasive Species. 640 pp.; colour photographs. Academic Press. ISBN print: 9780124171565; e-book: 9780124171732 [hardcover or e-book]

...Continued

- Wright, D.J. & T.M. Gilligan. 2015. *Eucosma* Hübner of the Contiguous United States and Canada (Lepidoptera: Tortricidae: Eucosmini). 256 pp., 133 species accounts, 30 colour plates, 49 monochrome plates. Wedge Entomological Research Foundation. ISBN 9780933003163 [hardcover]
- Cárcamo, H.A., & D.J. Giberson [Eds.]. 2014. Arthropods of Canadian Grasslands. Vol. 3: Biodiversity and Systematics, Part 1. 413 pp.; photos, maps, checklists. Biological Survey of Canada. ISBN 9780968932162 [soft cover]
- Giberson, D.J., & H.A. Cárcamo [Eds.]. 2014. Arthropods of Canadian Grasslands. Vol. 4: Biodiversity and Systematics, Part 2. 479 pp.; photos, maps, checklists. Biological Survey of Canada. ISBN 9780968932179 [soft cover]
-



M. Larrivière

Antheraea polyphemus
(Lepidoptera: Saturniidae)

Highlights from the Board of Directors Meeting of 9 June 2016

The Board of Directors met by conference call on 9 June 2016. Present were Terry Wheeler (President), Neil Holliday (First Vice-President), Patrice Bouchard (Second Vice-President), Staffan Lindgren (Past President), Bill Riel (Regional Director ESBC), Rob Currie (Regional Director ESM), Sophie Cardinal (Regional Director ESO), Gaétan Moreau (Regional Director AES), Kirk Hillier, Chris Cutler, Véronique Martel (Directors at Large), Christopher Dufault (Treasurer), Alec McClay (Secretary), and Geoff Powell (Executive Director: Strauss Event and Association Management).

The Board approved a finalised version of the policy document on organization of Joint Annual Meetings that was originally presented at the meeting of 7 November 2015.

Terry provided an update on progress with reorganization of the website. The Board accepted an offer from Guillaume Dury to handle updates to the website until the redesign is in place. Geoff Powell suggested that all requests for updates should be sent to Amanda Langtry, who will pass them on to Guillaume.

The draft ESC budget for 2016-2017 provided by the Treasurer was discussed and approved. The 2016-2017 draft Scholarship Fund budget was discussed and accepted for information. This budget will be presented for approval to the Trustees of the Scholarship Fund.

The Board approved a request from the Editor-in-Chief of *The Canadian Entomologist* for funding for the Editorial Board meeting at the International Congress of Entomology in Orlando, and a request that the salary for the Assistant Editor be reviewed annually. The Editor-in-Chief reminded the Board that his term will end in 2017. The Board agreed that an advertisement for a new Editor-in-Chief should be placed in the September 2016 Bulletin.

The Board approved the following pricing schedule for *The Canadian Entomologist* for 2017:

Print + Online (Institutional) £424, US\$678

Online Only (Institutional) £284, US\$457.

The Board discussed options for ESC involvement in the planning of the 2018 joint meeting in Vancouver with the Entomological Society of America, as presented in a report from Pat Bouchard, and endorsed Option 1 which involves a significant role for ESC in the planning of the meeting.

The Board noted that the 2019 JAM is due to be hosted by the Acadian Entomological Society. Gaétan Moreau reported that the AES Board will meet soon and discuss planning for the meeting.

The Board endorsed a plan by the Assistant Bulletin Editor to investigate new software for the production of the *Bulletin*, as the currently owned version of Adobe InDesign does not handle input from recent versions of Microsoft Word well. The Board agreed that Neil Holliday, Staffan Lindgren, and Christopher Dufault will coordinate plans for the ESC Awards session at the ICE in Orlando, and that printed information on the Gold Medal and Hewitt Award winners, as well as a list of student award winners, should be prepared for distribution at this session.

The Secretary reported that he has provided an advertisement for a new Secretary to be placed in the June 2016 *Bulletin*.

66th Annual Meeting of Members and Board of Directors Meetings

The Annual Meeting of Members of the Entomological Society of Canada will be held at the Orange County Convention Center, Orlando, Florida, at 2:30 pm on Tuesday, 27 September 2016. The Board of Directors Meeting will be held at the Rosen Plaza Hotel, Orlando, Florida, on Saturday, 24 September 2016, from 8:30 to 17:00. The incoming Board of Directors will also meet immediately following the Annual Meeting of Members. Matters for consideration at any of the above meetings should be sent to Alec McClay, Secretary of the ESC (see inside back cover for contact details).

66^e assemblée annuelle et réunions du conseil d'administration

L'assemblée annuelle de la société d'entomologie du Canada se tiendra au Orange County Convention Center, Orlando, Floride, à 14:30 le mardi 27 septembre 2016. La réunion du conseil d'administration se tiendra à l'hôtel Rosen Plaza, Orlando, Floride, le samedi 24 septembre 2016 de 8:30 à 17:00. Le nouveau conseil d'administration se réunira également immédiatement après l'assemblée annuelle. Les sujets à aborder pour n'importe laquelle de ces réunions doivent être envoyés à Alec McClay, secrétaire de la SEC (voir le troisième de couverture pour les coordonnées détaillées).



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Seeking a Secretary

The Entomological Society of Canada is looking for a member willing to serve in the position of Secretary, starting in September 2016. The duties of the Secretary are to support the President and Board by:

- Scheduling meetings of the Executive Council, Board, and the Members, preparing agendas, obtaining reports from Officers and others, sending out notices of meetings, attending the meetings, and recording minutes. Meetings are normally held by conference call, except for those that take place at the Society's Joint Annual Meeting.
- Working with our Association Management Company (Strauss Event and Association Management) to ensure that records of Society activities such as agendas, minutes, reports, and correspondence are preserved.
- Providing information on Society business to the Bulletin Editor, Webmaster, and Strauss for publication, posting, and circulation to the membership as necessary.
- Maintaining up-to-date membership lists and contact information for the Society's Board and Committees.
- Providing information as required to Strauss for the Society's annual filings with Corporations Canada and other government agencies.
- Preparing ballots and supporting information for plebiscites to recommend candidates for nominations as Societal Director and Director at Large, and for any other questions on which votes may be required, providing instructions on voting procedures, and notifying candidates and the membership of the results of voting. Advising affiliated societies when they need to provide names for nominations as Regional Directors.

A familiarity with the Society's by-laws, rules, and guidelines, past experience as a Board member, and the ability to work in French and English would all be assets. This is a great opportunity to serve one of the oldest biological societies in North America and to deepen your contacts with the Canadian entomological community. Any member interested in serving in this position should contact the President, Neil Holliday; neil.holliday@umanitoba.ca. The final selection will be made by an ad hoc committee convened by the President.

Secrétaire, SEC

La Société d'entomologie du Canada cherche un membre prêt à remplir le poste de secrétaire dès septembre 2016. Les tâches du secrétaire sont de soutenir le président et le conseil d'administration en :

- Fixant les dates de réunions du conseil exécutif, du conseil d'administration et des membres, préparer les ordres du jour, obtenir les rapports des dirigeants et autres, envoyer les avis de réunions, assister aux réunions et préparer les comptes rendus.
- Travaillant avec la compagnie de gestion des associations (Strauss Event and Association Management) pour s'assurer que les documents des activités de la Société, comme les ordres du jour, comptes rendus, rapports et correspondance sont préservés.
- Fournissant de l'information sur les affaires de la Société au rédacteur du Bulletin, au webmestre et à Strauss pour la publication, l'affichage et la circulation aux membres lorsque nécessaire.
- Maintenant à jour la liste de membres et les coordonnées du conseil d'administration et des comités de la Société.
- Fournissant l'information requise à Strauss pour les rapports annuels de la Société avec Industrie Canada et les autres agences gouvernementales.
- Préparant les bulletins de votes et l'information pour les plébiscites afin de recommander des candidats pour les nominations de directeur sociétal et conseiller, et pour toute autre question pour laquelle le vote est nécessaire, en fournissant les instructions sur les procédures de vote et en avisant les candidats et les membres des résultats du vote, et en avisant les sociétés affiliées lorsqu'elles doivent fournir des noms pour les nominations comme directeurs régionaux.

Une certaine connaissance du règlement intérieur, des règles permanentes et des lignes directrices, une expérience antérieure comme membre du conseil d'administration et la capacité de travailler en français et en anglais sont des atouts. Il s'agit d'une belle opportunité de servir une des plus vieilles sociétés biologiques en Amérique du Nord et d'approfondir vos contacts avec la communauté d'entomologistes canadiens. Tout membre intéressé à occuper ce poste doit contacter le président, Neil Holliday; neil.holliday@umanitoba.ca. La sélection finale sera faite par un comité ad hoc convoqué par le président.

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

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

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

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

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

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

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

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

Annual Financial Statements

Following completion of the review engagement of the accounts of the Entomological Society of Canada and its Scholarship Fund for the financial year ended 30 June 2016, both sets of financial statements will be posted on the ESC website, and an email sent to members indicating their location.

États financiers annuels

Suite à la mission d'examen des comptes de la Société d'entomologie du Canada et de son fonds de bourses pour l'année financière s'étant terminée le 30 juin 2016, les deux états financiers seront affichés sur le site Internet de la SEC et un courriel sera envoyé aux membres afin de leur indiquer son emplacement.

The Canadian Entomologist **Call for Special Issues**

The Canadian Entomologist (TCE) regularly publishes special issues of manuscripts with a common theme that review or report significant findings of fundamental and (or) general entomological interest.

Submissions currently are being solicited for two upcoming special issues. The first of these will be published in 2017 to celebrate the 40th anniversary of the Biological Survey of Canada (<http://biologicalsurvey.ca/>). It will be on the theme of “*Terrestrial Arthropod Diversity in Canada: Celebrating 40 years of the Biological Survey of Canada*”. In this context, “terrestrial” is defined to include upland, wetland and aquatic systems. If you wish to contribute to this special issue, please contact Dr David Langor (david.langor@canada.ca) by 1 October 2016.

The second special issue will be published in 2018 to celebrate *TCE*'s 150th anniversary. It will include manuscripts that each will provide a historical overview on a different aspect of entomological research in Canada. The first six submissions accepted for publication will be given free access on *TCE*'s website. If you wish to contribute to this second special issue, please contact Dr Kevin Floate (Kevin.Floate@agr.gc.ca) by 1 December 2016.

Proposals for special issues can be submitted at any time to *TCE*'s Editor-in-Chief. Proposals will be reviewed for suitability by the Publications Committee of the Entomological Society of Canada. Manuscripts submitted as part of a special issue are subject to the regular peer review process. There are no page charges.

For more information on *The Canadian Entomologist*, please visit the journal's website at: <http://journals.cambridge.org/action/displayJournal?jid=TCE>

Kevin Floate, Editor-in-Chief
The Canadian Entomologist



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Content of newsletters published by the Canadian Phytopathological Society

Contenu des bulletins publiés par la Société canadienne de phytopathologie



THE CANADIAN PHYTOPATHOLOGICAL SOCIETY

LA SOCIÉTÉ CANADIENNE DE PHYTOPATHOLOGIE

CPS.SCP News

Vol 60 (2) June 2016

<http://phytopath.ca/wp-content/uploads/2016/05/CPS-SCP-News-60-2-June-2016.pdf>

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Meeting announcements / Réunions futures

Entomological Society of Canada Annual Meeting 2016

Orlando, Florida, 25-30 September 2016

The meeting will be held in conjunction with the 2016 International Congress of Entomology.

XXV International Congress of Entomology (Entomology without Borders)

Orlando, Florida, 25-30 September 2016

www.ice2016orlando.org

The Combined International Electropetrography (EPG) Conference and Workshop on New AC-DC Technology

Lake Alfred, Florida, 2-7 October 2016

http://www.crec.ifas.ufl.edu/extension/epg/epg_workshop.shtml

Entomological Society of Ontario 153rd Annual Meeting (Renewal)

Sault Ste. Marie, 14-16 October 2016

<http://www.entsocont.ca/agm-2016.html>

12th International Congress of Orthoptera (Orthoptera in a Changing World)

Ilhéus, Bahia, Brazil, 30 October-3 November 2016

<http://www.ico2016.com.br/>

The 2016 Combined Meeting of the Australian Entomological Society and the Entomological Society of New Zealand

Melbourne, Australia, 27-30 November 2016

<http://www.aesconferences.com.au/>

The 5th International Forum for Surveillance and Control of Mosquitoes and Mosquito-borne Diseases

Nanjing, China, 22-26 May 2017

www.mosquitoforum.net

The Third Hemipteran-Plant Interactions Symposium

Madrid, Spain, 4-8 June 2017

<http://www.hpis2017.csic.es/>

26th International Conference of the World Association for the Advancement of Veterinary Parasitology, WAAVP 2017

Kuala Lumpur, Malaysia 4-8 September 2017

<http://www.waavp2017kl.org/index.php>

Entomological Society of Canada Joint Annual Meeting 2017

Winnipeg, 22-25 October 2017

The meeting will be held in conjunction with the Entomological Society of Manitoba

Readers are invited to send the Editor notices of entomological meetings of international, national or Canadian regional interest for inclusion in this list.

Les lecteurs sont invités à envoyer au rédacteur en chef des annonces de réunions entomologiques internationales, nationales ou régionales intéressantes afin de les inclure dans cette liste.

Bulletin of the Entomological Society of Canada

Editor: Cedric Gillott
Assistant Editor: Donna Giberson

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

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Winnipeg, Manitoba R3C 3R6
E-mail: info@esc-sec.ca
www.esc-sec.ca/

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

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

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Submission deadline for the next issue: 31 October 2016



Bulletin de la Société d'entomologie du Canada

Rédacteur: Cedric Gillott
Rédactrice adjointe: Donna Giberson

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

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386 Broadway, Suite 503
Winnipeg, Manitoba R3C 3R6
E-mail: info@esc-sec.ca
www.esc-sec.ca/

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

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

ISSN: 0071-0741

Droits d'auteur 2016 Société d'entomologie du Canada

Date de tombée pour le prochain numéro: 31 octobre 2016

Officers of affiliated Societies, 2015-2016

Dirigeants des Sociétés associées, 2015-2016

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2nd Vice President: Jenny Cory
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Treasurer Ward Strong
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Secretary Tracy Hueppelsheuser
B.C. Ministry of Agriculture
1767 Angus Campbell Road, A
Abbotsford, BC, V3G 2M3
Tel: (604) 556-3031
E-mail: Tracy.Hueppelsheuser@gov.bc.ca
<http://entsocbc.ca>

Entomological Society of Alberta

President Shelley Hoover
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Editor (Proceedings) Tonya Mousseau
Webmaster Alec McClay
Secretary Ken Fry
Olds College
4500 - 50 Street, Olds, AB T4H 1R6
Tel: (403) 556-8261
E-mail: esalberta@gmail.com
<http://www.entsocalberta.ca>

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President Tyler Wist
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Newsletter Editor Nicole Pillipow
Secretary Iain Phillips
Saskatchewan Watershed Authority
101-108 Research Drive, Saskatoon, SK, S7N 3R3
Tel: (306) 933-7474
Email: iain.phillips@swa.ca
<http://www.entsocsask.ca>

Entomological Society of Manitoba

President Paul Fields
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Bannerman

Editor (Proceedings) Terry Galloway
Webmaster Rob Currie
Secretary David Wade
City of Winnipeg Insect Control Branch
1539 Waverley Street, Winnipeg, MB, R3T 4V7
E-mail: dwade@winnipeg.ca
<http://home.cc.umanitoba.ca/esm/>

Entomological Society of Ontario

President Joel Gibson
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Treasurer Shiyu Li
Editor (Journal) Chris MacQuarrie
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Secretary Michelle Locke
Vista Centre
1830 Bank St. P.O. Box 83025
Ottawa, ON K1V 1A3
E-mail: entsocont.membership@gmail.com
<http://www.entsocont.ca>

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Secrétaire Danielle Thibodeau
Centre de recherche et de développement
en horticulture
430, boul. Gouin
Saint-Jean-sur-Richelieu (Québec) J3B 3E6
Tél : 450-346-2097
Email : secretariat@seq.qc.ca
thibodeaudanielle@hotmail.com

Acadian Entomological Society

President Drew Carlton
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Past President Chris Cutler
Journal Editor Don Ostaff
Webmaster Rick West
Secretary/Treasurer Andrew Morrison
Atlantic Forestry Centre
P.O. Box 4000, 1350 Regent Street South
Fredericton, NB, E3B 5P7
Tel: (506) 260-6176
E-mail: treasurer@acadianes.ca
<http://www.acadianes.ca>

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

The last word / Le dernier mot

Cedric Gillott, Editor / Rédacteur and Donna Giberson, Assistant Editor / Rédactrice adjointe



Conference Season

Many of us who spend a good part of the summer in the field think of autumn as “conference season”, and as our field seasons wind to a close, we begin to cast our minds forward to how we’ll communicate our results to our peers at upcoming meetings. Many ESC/SEC members will be looking ahead to the ICE (International Congress of Entomology) in Florida; it will be hosted this year at the end of September by the Entomological Society of America and is also held in conjunction with the Entomological Society of Canada. Others will be embracing their regional meetings, which also occur in autumn for most Canadian societies (the Acadian Entomological Society meets in June). The ICE is arguably the largest and most cosmopolitan of the entomological meetings our members may attend, which got us thinking about some of the differences among our conference choices. After a collective 90 years of attending scientific conferences (37 for Donna and 53 for Cedric), we thought we might use this space to consider what these meetings have meant to us over the years.

Scientific conferences come in a bewildering array of types and sizes. Regional and national entomological meetings typically cover a spectrum of taxonomic orders, insect habitats including

La saison des conférences

Pour plusieurs d’entre nous qui passons une bonne partie de l’été sur le terrain, l’automne est la « saison des conférences », et alors que notre saison de terrain se termine, nous commençons à réfléchir sur la façon dont nous communiquerons nos résultats à nos pairs lors des réunions à venir. Plusieurs membres de la SEC/ESC se prépareront à l’ICE (congrès international d’entomologie) en Floride : il se tiendra cette année à la fin septembre, est organisé par la Société d’entomologie d’Amérique, et il se tient également de concert avec la Société d’entomologie du Canada. D’autres participeront aux réunions de leurs sociétés régionales, qui se tiennent également à l’automne pour la plupart des sociétés canadiennes (la société d’entomologie acadienne se réunit en juin). L’ICE est probablement la réunion entomologique la plus grande et la plus cosmopolite à laquelle nos membres participent, ce qui nous amène à penser à quelques différences parmi nos choix de conférences. Après un total collectif de 90 années à assister à des conférences (37 pour Donna et 53 pour Cedric), nous avons pensé utiliser cet espace pour considérer ce que ces réunions ont représenté pour nous.

Les conférences scientifiques viennent dans une variété impressionnante de types et de tailles. Les réunions entomologiques régionales et nationales couvrent typiquement un spectre

freshwater, agricultural and forestry systems, and disciplines (e.g., ecology, physiology, behaviour...). By contrast, many international meetings have quite narrow themes, dealing with a single taxon (e.g., the International Conference on Ephemeroptera, which Donna has attended over the years) or system (e.g., the International Conference on Juvenile Hormones of particular interest to Cedric). Of course, the quadrennial celebration of entomology, the International Congress of Entomology (ICE), is clearly the exception to the above, covering the gamut of entomological interest and research.

In terms of size, this year's ICE in Orlando may be the largest ever gathering of entomologists, with over 6100 delegates expected, including almost 250 from Canada. By contrast, organisers of the *Bulletin* Editors' local societies, the Entomological Society of Saskatchewan and the Acadian Entomological Society, are pleased if there are 50 at their fall get-together.

All have left us with sets of memories that have passed the test of time. For example, remember your first 'ah ha!' moment, when a speaker triggered an idea that led to new and exciting directions in your work? Can you remember the first time you actually met (in person!) that amazing researcher whose work you were reading and trying to emulate? And if you're a little older, can you remember the first time you met the student who looked up to you and wanted to talk to you about your research? And we'll always remember the great ideas (and great arguments) that flowed from the sessions in the pub after the day's sessions.

If you talk to the long-time attendees at meetings, there seem to be some common themes. We pick and choose special symposia and papers we're interested in, and of course, we attend our students' sessions, and the session we might be presenting in ourselves. We've grown a bit jaded, perhaps, over all these years, and no longer attend sessions for every minute of the contributed papers, as we might have when scientific

d'ordres taxonomiques, d'habitat d'insectes incluant l'eau douce, les systèmes agricoles et forestiers, et de disciplines (p. ex. écologie, physiologie, comportements...). Au contraire, plusieurs réunions internationales ont des thèmes plutôt restreints, s'intéressant à un seul taxon (p. ex. la conférence internationale sur les Éphéméroptères à laquelle Donna a assisté au cours des ans) ou système (p. ex. la Conférence internationale sur les hormones juvéniles particulièrement intéressante pour Cedric). Évidemment, la célébration quadriennale de l'entomologie, la Conférence internationale d'entomologie, est clairement l'exception à la règle, couvrant l'éventail des intérêts et des recherches entomologiques.

En termes de taille, l'ICE de cette année à Orlando sera la plus grande assemblée d'entomologistes de tous les temps, avec plus de 6100 participants inscrits au moment d'écrire ces lignes, incluant près de 250 du Canada. Par opposition, les organisateurs des sociétés locales des rédacteurs du *Bulletin*, la Société d'entomologie de Saskatchewan et la Société d'entomologie acadienne, sont ravis s'ils sont 50 lors de leur réunion automnale.

Tout ça nous laisse avec un ensemble de souvenirs qui ont passé l'épreuve du temps. Par exemple, vous souvenez-vous votre premier « ah ha! » lorsqu'un conférencier a semé une idée qui vous a mené à des nouvelles orientations dans votre travail? Vous souvenez-vous de la première fois où vous avez réellement rencontré (en personne!) ce chercheur exceptionnel dont vous lisiez les travaux et essayiez de les reproduire? Et si vous êtes un peu plus vieux, vous souvenez-vous la première fois que vous avez rencontré l'étudiant qui vous admire et voulait vous parler à propos de vos recherches? Et nous nous souviendrons toujours de ces grandes idées (et grandes discussions) qui ont découlé des sessions dans les pubs après la journée.

Si vous parlez aux participants de longue date aux réunions, il semble y avoir quelques thèmes communs. Nous sélectionnons des symposiums spéciaux et des présentations qui nous intéressent et, évidemment, nous assistons aux sessions de nos étudiants, et la session dans laquelle

conferences were new to us. But we love to attend the student sessions to see what's new and exciting, and the after-meeting social sessions are a must-do, to catch up with our colleagues.

With the ICE on the near horizon, followed closely by most of the Canadian society regional meetings across the country, we'll see two extremes on the meeting scale – ICE will give opportunities to view research results from around the world, meet new people, and forge relationships that could last a lifetime! The regional meetings, by comparison, may feel a bit cozy and local, but still provide opportunities to get our research “out there”, get feedback and share ideas, and interact socially with our colleagues.

Whichever (and however many) meetings you choose this year, remember to make the most of them, and build those lifetime memories and relationships!

P.S. Readers will have noted that there is no Up Front in this issue. We are sorry to report that due to circumstances beyond his control, Terry Wheeler has been unable to provide his presidential column.

nous présentons nous-même. Nous sommes devenus blasés, peut-être, au fil du temps, et nous n'assistons plus à chaque minute des présentations soumises, comme nous le faisons sans doute lors de nos premières conférences. Mais nous adorons assister aux sessions étudiantes pour voir ce qu'il y a de nouveau et d'excitant, et les sessions sociales après la réunion sont un incontournable afin de prendre des nouvelles des collègues.

Avec l'ICE qui se pointe à l'horizon, suivi de près par la plupart des réunions des sociétés régionales canadiennes à travers le pays, nous verrons deux extrêmes sur l'échelle des réunions – l'ICE nous donnera des opportunités de voir des résultats de recherche de par le monde, de rencontrer de nouvelles personnes, et de forger des relations qui pourraient durer une vie entière! Les réunions régionales, en comparaison, peuvent sembler plus tranquilles et locales, mais fournissent tout de même des opportunités de montrer nos recherches, d'obtenir des opinions, de partager des idées et d'interagir socialement avec nos collègues.

Quelles que ce soient les réunions (et peu importe combien) que vous choisirez cette année, rappelez-vous d'en tirer le plus possible, et de bâtir ces souvenirs et relations pour la vie!

P.S. Les lecteurs auront remarqué qu'il n'y a pas d'Avant-propos dans ce numéro. Nous sommes désolés d'annoncer qu'à cause de circonstances hors de son contrôle, Terry Wheeler a été dans l'impossibilité de fournir sa rubrique présidentielle.



Executive Council / Conseil exécutif

President / Président

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

First Vice-President / Premier vice-président

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

Second Vice-President / Second vice-président

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

Past President / Président sortant

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

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Treasurer / Trésorier

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

Secretary / Secrétaire

Alec McClay
15 Greenbriar Crescent, Sherwood Park,
Alberta T8H 1H8
Tel: (780)464-4962 Fax: (780)410-0496
E-mail: secretary@esc-sec.ca

Bulletin Editor / Rédacteur du Bulletin

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

Asst. Bulletin Editor / Rédactrice adj. du Bulletin

Donna Giberson
Dept. of Biology, U. Prince Edward Island
Charlottetown, PE, C1A 4P3
E-mail: giberson@upei.ca

Webmaster / Webmestre

(interim) Guillaume Dury
guillaume.j.dury@gmail.com

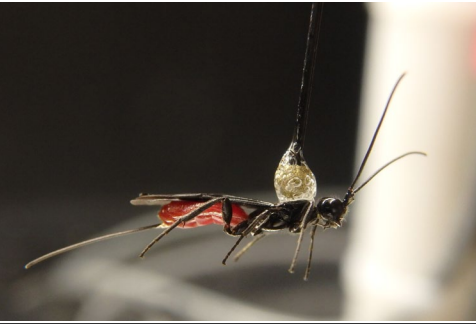
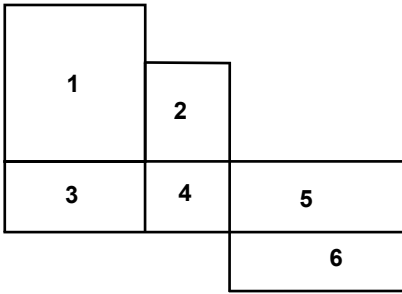
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Editor-in-Chief / Rédacteur en chef

Kevin Floate
Lethbridge Research and Development Centre
Agriculture and Agri-Food Canada
Lethbridge, AB T1J 4B1
Tel: (403) 317-2242
E-mail: kevin.floate@agr.gc.ca

Head Office / Siège social

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



Front cover/Plate supérieur:

1. Graduate students collect at a light trap late at night (Vernon, BC). The bright lights are powered by the car's battery.
Des étudiants diplômés capturent des insectes dans un piège lumineux tard dans la nuit (Vernon, C.-B.). Les lumières vives sont alimentées par une batterie de voiture. [Photo : Ward Strong]
2. Predator versus parasitoid: *Rhinocoris annulatus* feeding on an ichneumonid (Delémont, Switzerland).
Prédateur contre parasitoïde : *Rhinocoris annulatus* se nourrissant d'un ichneumon (Delémont, Suisse). [Photo : Tim Haye]
3. A spruce budworm (*Choristoneura fumiferana*) pupa on a balsam fir branch. The spruce budworm is a major native defoliator in Eastern Canada. Near Baie-Comeau, QC.
Une chrysalide de tordeuse des bourgeons de l'épinette (*Choristoneura fumiferana*) sur une branche de sapin baumier. La tordeuse des bourgeons de l'épinette est un défoliateur indigène dans l'est du Canada. Près de Baie-comeau, Qc. [Photo : Véronique Martel]
4. The longhorned beetle *Bellamira scalaris* preparing for takeoff in Denver, NS.
Le longicorne *Bellamira scalaris* se préparant à s'envoler à Denver, NS. [Photo : Colin MacKay]
5. Cecropia moth, *Hyalophora cecropia*, just after molting to third instar. This lab-reared caterpillar is from the F2 generation of a gravid female collected in 2014 from Black Donald Lake near Calabogie, ON.
Un saturnie cécropia, *Hyalophora cecropia*, après la mue vers le troisième stade. Cette chenille élevée en labo est de la génération F2 d'une femelle féconde capturée en 2014 au lac Black Donald près de Calabogie, Ont. [Photo : Andrea Brauner]
6. *Megachile* Latreille, 1802 (Megachilidae) leafcutter bees are important pollinators widely used in alfalfa growing areas. Their reproductive biology is quite interesting. This specimen was excavating its nest in an old wood retaining wall in our garden. Prince George, BC.
Megachile Latreille, 1802 (Megachilidae). Les abeilles découpeuses sont d'importants pollinisateurs largement utilisés dans les aires de cultures de Luzerne. Leur biologie reproductive est plutôt intéressante. Ce spécimen creusait son nid dans un vieux mur de soutènement en bois dans notre jardin. Prince George, C.-B. [Photo : Staffan Lindgren]

www.esc-sec.ca

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

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Back cover/Plate inférieur:

- Female *Atanycolus* sp., a North American parasitoid of emerald ash borer, tethered to a flight mill in a laboratory at the Canadian Forest Service, Great Lakes Forestry Centre (Sault Ste. Marie, ON) to study factors affecting flight.
Une femelle *Atanycolus* sp., un parasitoïde nord-américain de l'agrile du frêne, attachée à un moulin de vol dans un laboratoire du Service canadien des forêts, au Centre de foresterie des Grands-Lacs (Sault-Ste-Marie, Ont.), afin d'étudier les facteurs qui affectent le vol. Photo : Justin Gaudon.