# Bulletin

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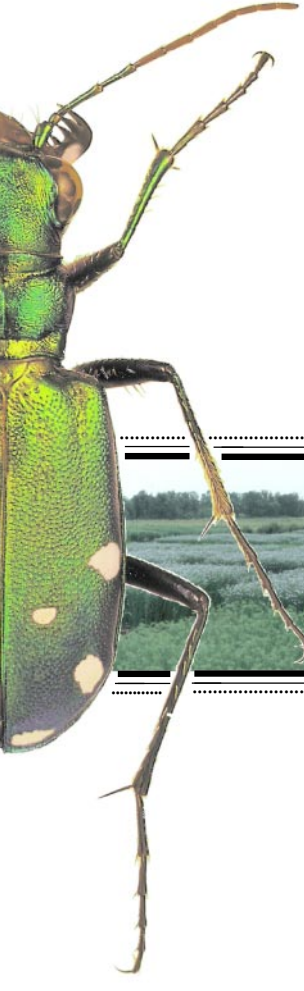

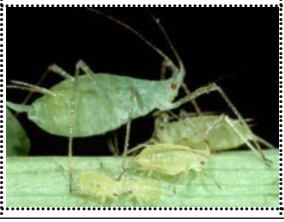

Images

**Sur le dos** : La cicindèle à six points, *Cicindela sexguttata* Fabricius (Cicindellidae), un coléoptère prédateur commun dans l'est de l'Amérique du Nord, photo : H. Goulet.

**Sous le titre** : L'agrile du frêne, *Agrilus planipennis* Fairmaire (Buprestidae), un coléoptère exotique originaire d'Asie qui menace les frênes d'Amérique du Nord, photo : K. Bolte.

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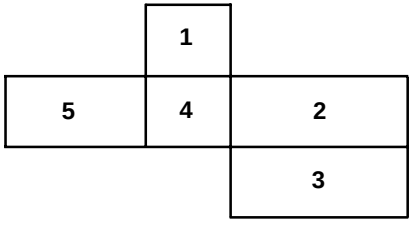
**Verso** : *Ixodes gregsoni* Lindquist, Wu and Redner (Ixodidae), une tique parasite des mustélidés, photo : K. Bolte.



## Robert Lamb, President of ESC / Président de la SEC

P. MacKay

### What does your President do?

Realizing that I have already been President for almost three months came as a surprise. My prime task, as chair of the executive, is to assure that Society business is executed. In fact, most ESC business is executed by Trustees and Committees, who carry on very effectively with little input from me. My first duty was to appoint the Chairs of these Committees. I want to thank all the Chairs and their Committees, as well as the Trustees, for their roles in the business of the Society.

I also receive correspondence, some interesting, some less so, but all must be answered. For example, I had to politely decline to weigh in on behalf of a citizen's group wanting to ban pesticides from their city. Corresponding with a student interested in finding out more about forensic entomology was a pleasure. Most interesting was an e-mail requesting information on a father who died on an entomological expedition four decades ago. I had only a name. My first thought was: this is going to take all day. Then Paul Fields reminded me of the *Biography of Entomologists in Canadian Publications* by Eidt, Riegert and Becker, posted in the members area of our website. Five minutes later, I had a detailed obituary. Looking through the *Biography* for the first time I realized what a service these three ESC members have performed for the history of Canadian entomology.

A recent accomplishment, although not mine, was a new cover for *The Canadian Entomolo-*

### Que fait votre Président?

Réaliser que je suis Président depuis presque trois mois fut une surprise. Ma fonction principale en tant que Président du comité exécutif est de m'assurer que les affaires de la Société sont exécutées. En fait, la majorité des affaires de la SEC sont exécutées par des fiduciaires et des comités, qui les prennent en charge de façon très efficace avec bien peu d'interventions de ma part. Ma première tâche était de réunir les présidents de ces comités. Je veux remercier tous les présidents et leur comité, ainsi que les fiduciaires, pour leur rôle dans les affaires de la Société.

Je reçois également de la correspondance, parfois intéressante, parfois un peu moins, mais toute doit être répondue. Par exemple, j'ai dû refuser poliment de prendre en faveur d'un groupe de citoyens voulant bannir les pesticides de leur ville. Par contre, correspondre avec un étudiant voulant en savoir plus sur l'entomologie judiciaire fut un plaisir. Encore plus intéressant fut un message électronique demandant de l'information sur un père décédé durant une expédition entomologique quarante ans plus tôt. Je n'avais qu'un nom. Ma première pensée a été : ceci va me prendre toute la journée. Puis, Paul Fields m'a rappelé l'*Index des biographies des entomologistes dans les publications canadiennes* de Eidt, Riegert et Becker, affichée dans la section membre de notre site internet. Cinq minutes plus tard, j'avais une notice nécrologique détaillée. Regardant dans la biographie pour la première fois, j'ai réalisé quels services ces trois membres de la SEC ont rendu pour l'histoire de l'entomologie canadienne.

Une autre réalisation récente, bien quelle ne soit pas de moi, a été la création d'une nouvelle couverture, ainsi qu'une mise à jour du format pour *The Canadian Entomologist*. Ces changements ont impliqué de solliciter et d'évaluer des photographies d'insectes, de réviser et de condenser le texte fourni sur les couvertures, et de donner au journal un style plus moderne et plus

*gist*, and an update of its format. These changes involved soliciting and judging photographs of insects, revising and condensing text that is provided on the covers, and giving the journal a more modern and eye-catching look. Thanks to then Treasurer Gary Gibson, Past-President Charles Vincent, and Editor-in-Chief Richard Ring for their contribution, and Chair Allan Carroll and members of the Publications Committee for completing the work in time for 2005 issues of the journal.

An important goal for this year is a Strategic Review, mentioned by then-President Vincent in the December 2004 issue. The last review, completed in 1996, focussed on organizational structure, publications, revenue enhancement, headquarters operations and relations with affiliated societies. The many positive changes that resulted gave us the healthy society we have today. The 2005 review will look at other aspects of our Society, not because we are experiencing any particular problems, but to assure that 10 years from now ESC will continue to provide a vibrant atmosphere for entomology in Canada. We will focus on implications of information technology, membership, finance and bring recommendations that can be formulated as motions at the 2005 Board and Annual General Meeting. The issues being considered are described in more detail elsewhere in this *Bulletin*. I encourage you to contribute to our future by passing on your views on these issues.

Mentioning the Annual General Meeting reminds me how quickly it will be upon us. Our recent meetings in Charlottetown and Kelowna have been so successful, in terms of scientific quality, social interactions, attendance, and finances, that I am confident that the 2005 meeting will be at least as successful. The Alberta Entomological Society has a long tradition of hosting excellent joint meetings. I know the Organizing Committee chaired by John Acorn is already hard at work preparing for the meeting in Canmore in early November. I for one am looking forward to seeing that area of Alberta, as well as immersing myself in the entomology.

attrayant. Merci au trésorier Gary Gibson, au Président sortant Charles Vincent, et au rédacteur en chef Richard Ring pour leur contribution, ainsi que le président du comité Allan Carrol et les membres du Comité des publications pour le travail complété à temps pour les numéros de 2005 du journal.

Un objectif important pour cette année est une révision stratégique, telle que mentionnée par le Président sortant Vincent dans le numéro de décembre 2004. La dernière révision, complétée en 1996, était centrée sur la structure organisationnelle, les publications, l'amélioration des revenus, les opérations du siège social et les relations avec les sociétés affiliées. Les nombreux changements positifs qui en ont résulté nous ont donné la société en santé que nous avons aujourd'hui. La révision de 2005 s'attardera à d'autres aspects de notre Société, non que nous ayons quelques problèmes particuliers, mais plutôt pour assurer que les 10 prochaines années de la SEC continueront de procurer une atmosphère vibrante pour l'entomologie au Canada. Nous allons nous concentrer sur les implications de la technologie de l'information, les adhésions, les finances, et nous allons apporter des recommandations pouvant être formulées comme motions au Comité d'administration et à la réunion annuelle. Les enjeux considérés sont décrits plus en détail ailleurs dans ce *Bulletin*. Je vous encourage à contribuer à notre futur en communiquant vos opinions sur ces questions.

Mentionner la réunion annuelle me rappelle à quel point elle arrive vite. Nos récentes réunions à Charlottetown et Kelowna ont été couronnées de tant de succès, en terme de qualité scientifique, d'interactions sociales, d'assistance et de finances, que je suis confiant que la réunion 2005 sera au moins tout aussi réussie. La Société d'Entomologie de l'Alberta a une longue tradition de tenir et avoir d'excellentes réunions conjointes. Je sais que le Comité d'organisation présidé par John Acorn travaille déjà fort à préparer la réunion à Canmore au début du mois de novembre. J'ai hâte de voir cette région de l'Alberta, ainsi que de m'immerger dans l'entomologie.

# Moth balls / Boules à mites

**By Andrew Bennett**

## Why eat insects?

For more than a century, it has been pointed out that insects could provide a good source of nutrition for humans (Holt 1885). Clearly, this is recognized by most cultures but, because of traditional notions on what is acceptable to eat, the Western world has chosen not to categorize insects as acceptable food, despite considering bottom-feeding marine Crustacea such as crabs and lobsters as delicacies. Is this prejudice or simply common sense? Over the past couple of decades, many scientific articles (e.g. Vane-Wright1991), cookbooks (e.g. Gordon 1998) and newsletters (e.g. *The Food Insects Newsletter* now archived on the web under www.food-insects.com) have attempted to convince the West, that insects should be eaten as food. It is unclear whether this is because the authors actually believe this or are simply writing on the subject to shock an audience that has most likely already made up their minds that insects should not be part of their culinary repertoires. So what is my purpose for writing this article? Call me squeamish, but I stare at insects all day long (mostly through a microscope that magnifies all the dust and crap that's stuck to them). No, my goal here is to play devil's advocate to all those hip, open-minded people that are offering me their favourite recipes for chocolate ants and witchety grubs. Here are five good reasons NOT to eat insects.

1. The Canada Food Act categorizes fruit as "Fancy", "Choice" or "Standard" depending on the quality of the product. Fancy is defined as "practically free from cracked or misshapen fruit, insect or mechanical injury, blemishes and other defects", whereas "Choice" is defined as "fairly free…" and "Standard" as "reasonably free…". In numerical terms, these are defined (for cherries, at least) as no more than 2%, 4% or 8% of the total fruit, respectively. There's no mention of any distinction between a slight nibble on the surface versus an entire live larva in residence within the cherry, but suffice to say, if I'm eating "Standard" fruit, I'm sure I'm getting enough chitin in my diet already. One has to have a balanced diet after all…

2. The Old Testament (Leviticus XI, verses 20-23) outlines which insects could be eaten by the Israelites and which could not. There is some question as to the exact translation and to which species of insects it refers (see Isman and Cohen1995), but it seems that grasshoppers were deemed acceptable, whereas "earth-swarmers that crawl on their bellies" were forbidden. - Only larvae on the menu today? What a pity.

3. In Thailand, grasshoppers are marketed as "sky prawns". Do they really think that moniker will help the hind legs slide down my throat any easier?

4. If we all started eating insects, what on earth would reality shows like *Fear Factor* and *Survivor* resort to in order to disgust us? (That is a rhetorical question best not pondered).

5. For entomology grad students working late at night, rejection of insects as a viable food source could help prevent unfortunate accidents in the lab - Now where did I put that third replicate? … Uh-oh.

Join me next issue when I most certainly will not reveal my favourite recipe for spicy *Moth Balls*!

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# Gold medal address / Allocution du médaillé d'or

By Judy Myers

## "Lest we forget" Women entomologists, population cycles and biological control: Legacies from the past with importance to the future.

B. Lyons

### Introduction and acknowledgements

I am very pleased to have received the Gold Medal from the Entomological Society of Canada. I am grateful to those who nominated me for this award and appreciate the time they took to do this. I also wish to thank the Gold Medal selection committee and the organizers of the 54th meeting of the Society, Donna Giberson and Jon Sweeney, for their contributions to the highly successful 54th meeting of the Entomological Society of Canada. Charlottetown was a lovely venue, and it was a treat to enjoy the hospitality of Prince Edward Island.

In the following, I touch on three topics that have been important to my career in entomology and population ecology. First I would like to recognize women in entomology and raise a concern about research funding for women in Canada, secondly I will share some concerns about recent trends in insect population ecology, and finally I would like to celebrate the success of the biological control of a major rangeland pest - diffuse knapweed.

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*Judy Myers is a Professor in the Departments of Zoology and Agroecology, University of British Columbia, Vancouver, British Columbia. She became interested in insects in 1965 when she studied Florida Queen Butterflies. Her research interests are the population ecology of western tent caterpillars, the ecology and evolution of baculoviruses, and the biological control of insects and weeds. Contact details: e-mail:* myers@zoology.ubc.ca*, telephone: (604) 822-3957, web page:* http://www.zoology.ubc.ca/zoology/z/myers/index.html

### Women entomologists

My research on insects began in 1965, approximately 100 years after the formation of the Entomological Society of Canada, when I began studies of the courtship behaviour of Florida Queen butterflies. At this time women were the exception among scientists and particularly so among entomologists. At professional meetings it was not uncommon to be the only woman in the room. When I came to Canada in 1972 and began to attend meetings of the Entomological Society of Canada, the ratio of males to females was still very high. For me, as a young woman, I couldn't help but notice the regular attendance of the wives of some of the entomologists at these meetings. Simply having them there made me feel more comfortable. I would like to recognize the women who to me appeared to be the most consistent attendees of both the Canadian and American entomological meetings; these were the wives of Ed Becker, George Ball and Peter Belton. Peter's wife Elspeth Belton deserves special mention because she was herself an entomologist and received her PhD in 1957 from the University of Glasgow. After teaching for a year at the City College of New York, she moved to Belleville, Ontario and then in 1967 to Simon Fraser University as part of the Pestology Centre. Here she worked primarily for Bryan Beirne, but continued research on mosquitoes and flies while also raising three children.

Another regular attender of ESC meetings was Thelma Finlayson. She began her career in ento-

mology in 1938 with the Biological Control Group of Agriculture Canada in Belleville where she worked for 29 years before joining the Beltons and others in the move of that group to Simon Fraser University (SFU). In addition to teaching, Thelma carried out research on parasitoids of aphids and larval development. Today, 25 years after retirement, she continues to counsel students at SFU. When she received an honorary degree from SFU, Thelma was recognized as being "an outstanding teacher and scholar, a woman of vision." This pioneering female entomologist (Figure 1) has been recognized by the Entomological Society of Canada as a Fellow and Honourary member and was one of several women including Doreen E. Maxwell, Margaret Rae MacKay and Annelle R. Soponis who contributed to the *Memoirs of the ESC* between the mid-1950s and the mid-1970s.

Susan McIver was also a leader in Canadian entomology and was recognized by the Society's Hewitt Award in 1978. However, she left academia and her research career in the study of flies, aquatic insects and insect sensilla to become a freelance writer and coroner. Since the early 1980's there has been an upsurge in the number of women among students and faculty in the area of insect biology. Several of these are students whom I knew at UBC, Patricia McKay (University of Manitoba) and Sheila Fitzpatrick (Agriculture and Agri-Food Canada), and others I have met more recently, Sandy Smith (University of Toronto) and Donna Giberson (University of P.E.I.). A more recent wave has included Fiona Hunter (Brock University) Sandra Walde (Dalhousie University ) and Naomi Cappuccino (Carlton University). Jarmila Kukalova-Peck was the first woman to receive the Gold Medal in 1996 for her work on the evolution of insect flight.

Figure 1. Peter Belton and two pioneering female entomologists, Elspeth Belton (left) and Thelma Finlayson. (Provided by Peter Belton).

This brief survey of women in entomology is in no way complete and is biased by my own interests in the area of ecology. I am certain that my colleagues would agree that the situation for women in entomology now is much changed from the 1970's, and we have many stories that could be told. Times have changed however, and the increased representation of women, particularly young women, at meetings of entomological societies is now apparent. In some cases women are beginning to dominate. At the 2004 meeting of the ESC, 15 of 17 student awards went to young women who will contribute to the future of entomology in Canada and the world.

## Research funding

It is important that the outstanding young women entomologists continue to have opportunities to succeed. A concern however is that currently the funding system in Canada does not necessarily present a level playing field for women researchers. An analysis of NSERC discovery grants that I carried out with a student showed that in 2003, in the area of ecology and evolution, women on average received smaller grants than men (Table 1). This is not totally explained by more women being among new, young faculty. In fact the opposite is the case and women who received their first grants prior to 1991 were more disadvantages as compared to their male colleagues and received on average $6000 less. Women are less likely to receive particularly large grants or, in the NSERC terminology, they are less likely to be "high fliers".

An easy solution to this situation would be for research money to be divided between males and females in relation to the numbers of each that apply for grants. By distributing those amounts among males and females independently, no biases could creep into the system. If males and females tend to do different types of research, the best research within those categories would still be recognized. This would be a bold new approach to research funding and adopting such a

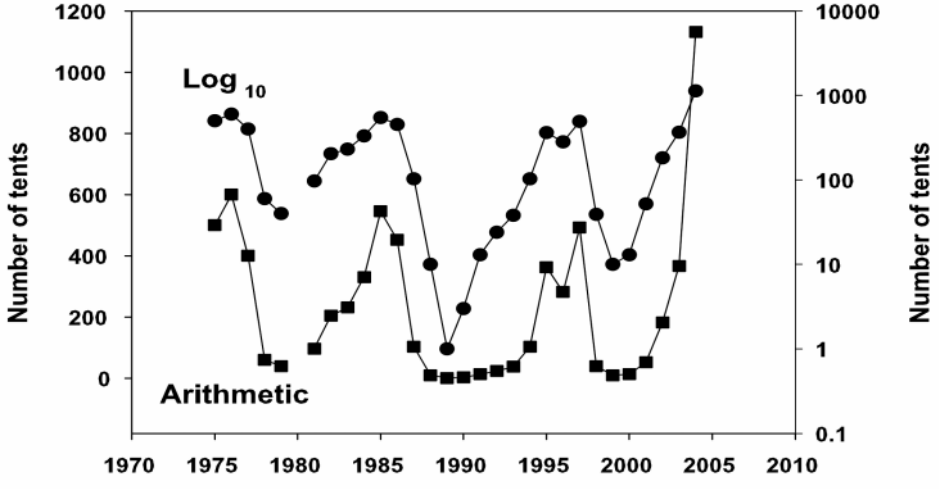


Figure 2. Counts of the numbers of tents of western tent caterpillars on Mandarte Island plotted on both an arithmetic scale and a log scale. This demonstrates how one can be misled into thinking there is a long period of low population density (a lower equilibrium) by plotting data on an arithmetic scale.

strategy could make Canada's funding agencies innovators in the global struggle against sexism in research funding.

Table 1. Average grants in 2003 for males and females funded through NSERC Committee 18 - Ecology and Evolution. Researchers were divided into two groups to take into consideration their research histories.

| | Funding before 1991 | 1996 |
|---|---|---|
| Male | $ 37,207 | $ 30,293 |
| Female | $ 30,882 | $ 26,083 |
| Difference | $ 6,325 | $ 4,210 |

Another concern for entomology and systematics, two areas that receive funding through the Ecology and Evolution committee, results from recent reallocation procedures within NSERC that favoured physical sciences over biological sciences. Thus the pie has gotten smaller for entomology in general and pleas for more funding for systematics and biodiversity were not successful.

## Population fluctuations of forest caterpillars

The study of population cycles of forest caterpillars has a proud tradition in Canadian entomology. Some of the early workers in this area were R.F. Morris, W.G. Wellington, C.S. Holling, K.E.F. Watt, T. Royama, I. Otvos, and R.F. Shepherd (see review in Myers1988). Much of this work was based on extensive field work combined with pioneering development of simulation models and these studies contributed to a classification of and a general theory for insect outbreaks (Berryman 1987; Berryman 2003). Controversy continues however, on whether the population cycles result from delayed density-dependent mortality (Turchin and Berryman 2000) or autocorrelation in physical conditions (Royama 1977; Williams and Liebhold 1995; Hunter and Price 1998). Models of population cycles of forest insects have been a growth industry and it becomes difficult to know sometimes whether the goal is to achieve elegant models with complex dynamics, or to understand the mechanisms that contribute to the fluctuations in field populations. We

know that non-linear processes can cause periodic behaviour in theoretical models and that linear models are capable of producing quasi-periodic behaviour. What we need to know are the characteristics of populations that change with the fluctuation of population density. By focusing on population density alone, one easily ignores that at a certain density in an increasing population conditions are likely to be different from the same density in a declining population. More relevant is how survival, fecundity and migration change with population increase and decline.

Sometimes it is unclear just what pattern of population dynamics modelers are trying to explain. For example, whether population data are plotted on an arithmetic or logarithmic scale can change the apparent pattern of outbreaks (Figure 2). With the former it appears that there is a long period of low density between outbreaks while the proper representation of the data on a log scale demonstrates the continual change in density over time. Some have focused on explaining "a stable, low density equilibrium" as a characteristic of fluctuating populations of forest Lepidoptera (eg. (Dwyer et al. 2004). This is not however a typical pattern of population dynamics based on counts of insects within specific populations for those species that fluctuate with a typical periodicity of approximately 8 to 11 years.

Similarly in regard to mechanisms associated with population fluctuations, it is frequently stated that infection by baculovirus is a characteristic of fluctuations of forest caterpillars. Baculovirus infections are not however a universal characteristic. More careful analysis shows that regular epizootics of baculoviruses are limited to moth species in the families Lymantridae and Lasiocampidae as well as in several sawflies (Cory and Myers 2003). A number of species in other Lepidopteran families show quite regular fluctuations without viral epizootics and thus viral infection is not necessary for cyclic population dynamics.

Liebhold and Kamata (2000) challenge population ecologists to characterize population behaviour beyond the presence or absence of cycles. I would say that field population ecologists have done this and have traditionally focused on mechanisms. It is the population modelers and the statisticians who have become distracted by whether the oscillations are regular, periodic or quasi-periodic. For this reason it is also interesting that "theoretical" papers that discuss mechanisms often ignore the work and initial ideas of field biologists in favour of models that describe the behaviour. A good example of this is the frequent citation of the model of maternal effects by Ginzburgh and Taneyhill (1994) rather than the work of Wellington (1965) who proposed the mechanism of density-related, qualitative changes of individuals in populations and maternal effects (see Turchin et al. 2003) for examples of this "models over field observations" approach to the literature). The important message here is that "theory" is based on ideas and models describe these ideas. Great caution must be used in interpreting the relevance or application of dynamics arising from simulation models to the interpretation of field data because similar population trends can be created in a number of ways.

Because of the rich background of extensive work in the area of insect population fluctuations, it is a challenge for current students of insect ecology to synthesize what has already been done. This is true for the broader discipline of ecology in general as summarized by Belovsky et al. (2004) as one of their 10 suggestions for improving ecological theory and practice when they point out that "there is a lack of appreciation of past literature; this, in part, leads to ecology's fickleness toward central issues." They suggest that this lack of background is exemplified when papers proposing novel ideas fail to recognize work that was done decades before. There is a danger of this happening if we overlook the extensive work of field biologists, many of them Canadians, that has described and quantified characteristics of population fluctuations of forest Lepidoptera to a greater extent than just population trends.

## Biological control of weeds

Canadians have also been leaders in the biological control of weeds and Peter Harris who also began his career with Agriculture Canada in Belleville Ontario, was recognized for his enormous contributions in this area by the Gold Med-

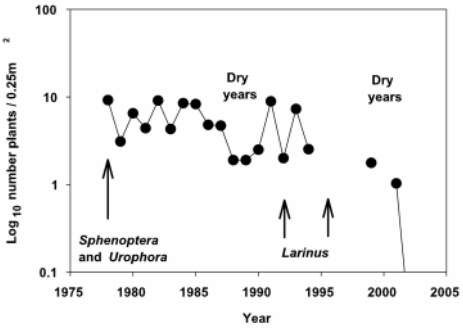


Figure 4. Population density of diffuse knapweed at White Lake, British Columbia. The gall flies *Urophora affinis* and *U. quadrifasciata* were introduced in the early 1970's and the root boring beetle *Sphenoptera jugoslavica* in 1976. *Larinus minutus* was established in the late 1990's. In 2003 and 2004, no knapweed plants occurred in the monitoring area.

al in 1997. Over the years Peter and I have discussed such issues as whether biological control was an art or a science and how many insects are required for successful biological control - is cumulative stress from several species of agents required or is one agent sufficient (Harris 1981; Myers and Bazely 2003). We came to agree that biological control is both an art and a science, and I think we agree that very frequently a single biological control agent is sufficient for success (Denoth et al. 2002).

A weed that has been extremely resistant to biological control agents is diffuse knapweed, *Centaurea diffusa* and this was the target of considerable efforts by a number of workers including Peter Harris (Harris and Myers 1984). This Eurasian plant was introduced to Canada in the early 1900's and currently exists from British Columbia to Texas and Colorado. Since 1967, a total of 12 species have been introduced as biological control agents on diffuse knapweed (Bourchier et al. 2002). It is only in the last several years however, and following the introduction of the most recently introduced species, *Larinus minutus*, (Figure 3) that knapweed has shown noticeable population decline. In fact the decline has been striking with densities going to zero in several areas that I have monitored for a number of years (Figure 4). What makes *Larinus* effective when other species have failed is that it is capable of killing plants. Adult beetles emerge in the early spring feed on the recently bolted plants. Extensive feeding by high densities of beetles kills plant, particularly in dry summers. Whether this species is sufficient on its own to successfully control knapweed, remains to be proven through experiments. Where it is lacking knapweed remains even in the presence of other agents. Thus it appears that this biological control program will be another score for the success of a single agent.

This story of successful biological control is a tribute to the many Canadian entomologists that have made the art of biological control into a true science - those who worked with Agriculture Canada at Belleville, Regina and then Lethbridge, those that established the Pestology Centre at SFU, and those at many others at universities and research units across the country that have worked

Figure 3. Grasses and wild flowers now replace knapweed in the southern Okanagan.

in biological control. Canadian entomologists have much to be proud of.

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***Erratum**: My apologies for incorrectly spelling Judy Myers' name in the December* Bulletin *2004 Volume 36: 178.*
*Paul Fields*, Bulletin *Editor*

By Neil Holliday

## Norman Criddle: Pioneer entomologist of the Prairies

### 2004 Heritage lecture

The Department of Entomology at the University of Manitoba has a small meeting room in which, from time to time, important decisions are made. As if to remind those meeting that they may be answerable to their predecessors, the walls are adorned with portraits of historical figures of Manitoban entomology. From my point of view, an important meeting held in this room was the February 1977 interview for my current job. It was at that time that I first became aware of Norman Criddle, the subject of the earliest of the portraits on the wall.

My knowledge of Norman Criddle was sketchy for many years. I soon encountered his extension publications on pest insects in Manitoba, and his scientific publications documenting studies of grasshopper biology. Many of these remain authoritative works on bionomics of pest insects. About 10 years ago, I became acquainted with the environment in which Norman Criddle lived, both because I began using the location in teaching laboratories, and because of discussions with the Provincial Parks Department about the future of the location. More recently I became aware of Norman's family history and circumstances. Today, I shall reverse the order of my discoveries, and first address his family circumstances, then his own life and environment, and finally his scientific career and impact on entomology.

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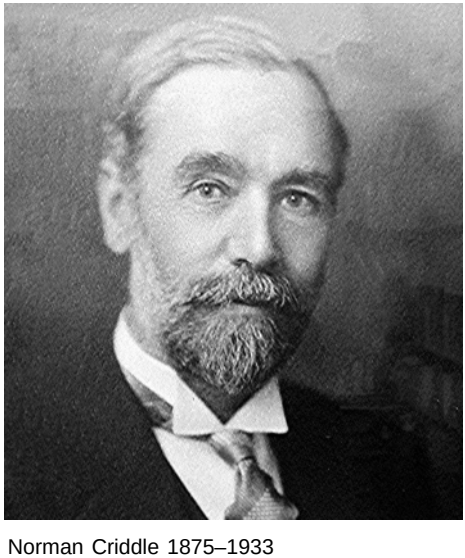
A.E. Holliday

Percy Criddle was Norman's father. Percy was born to well-off parents, and grew up in Putney, in west London. At the age of 16, Percy moved to Heidelberg to further his education. There he met Elise Harrer. Elise became Percy's mistress and when Percy moved back to London in 1867, Elise was established in a flat over Percy's business offices. This arrangement continued until 1882. Between, 1867 and 1875, Elise bore six children, one of whom died in infancy. Elise became known as Mrs Vane, and her children took the name Vane.

Alice Nicol was Norman's mother. She was one of the first women to study at Cambridge. She became fluent in several languages and knowl-



Norman Criddle 1875–1933

edgeable in literature and natural history. Alice was courted by Percy from about 1870, and they married in September 1874. They set up house in Addlestone, Surrey, now not far from what is now London's Heathrow Airport. At the time of his marriage, Percy was described as a wine merchant.

On setting up home in Addlestone, it appears that Percy announced to Alice that he had a mistress with four children and another expected. Percy divided his time between his family in London, and his growing family in Surrey. Four children were born to Alice during the Addlestone period. The oldest of these was Norman. In March 1876, for no apparent reason, Percy began a diary, which he continued until his death. This is the source of much of our knowledge of the early years of the Criddles, and in fact begins with the note that Norman had cut his first tooth at the age of 10 months.

Percy was not a very successful business man. In 1882, he sold his business and other assets, and set out for a new life in Canada. Elise and her five children travelled steerage class, and Percy and Alice and her four children travelled intermediate class to New York, where they landed on 27 July 1882. They then travelled by train and steamer to Brandon, Manitoba, arriving on 16 August. Once in Brandon, Percy prospected for suitable land and decided on a location just north of the Assiniboine River, close to the Treesbank Ferry, which linked his chosen homestead location with the nearest community of Treesbank. On 24 August 1882, the Criddle/Vane family, consisting of Percy, his two women, and nine children ranging from 2–14 years set out for the homestead site.

The trip from Brandon to the chosen section illustrates several important elements of the circumstances in which Norman grew up. Percy had bought an ox cart and pair of oxen and arranged to rent a horse-drawn dray and driver, and to make an early start. When the dray arrived, its capacity was too small, and there was delay while a substitute was found, and that was barely adequate. Percy drove the ox cart with great difficulty, and at the Assiniboine River Crossing at Currie's Landing, the ox cart nearly tipped into the river. Percy had to admit that it was overloaded.

Neil Holliday

The second St. Albans in 2004. The single storey portion on the right is the east wing, built to house entomological visitors and workers. In the foreground is the flag pole, which Percy considered an important element of the homestead.

So the stove and some other items were left at Currie's landing to be picked up later. At this point, Percy went ahead with the horse-drawn dray, leaving the women and children to cope with the ox cart. The oxen lay down frequently, and by sheer force of personality, Alice finally got the party to the homestead site late in the evening. This episode epitomizes several of Percy's characteristics: a tendency to make plans that misfire, a lack of practical ability that would be very useful on a farm, impatience, and a willingness to leave the hard labour to the women and children of the family and take little interest in their difficulties. The day-long trip also illustrates a further shaping characteristic of Norman's environment, the degree of isolation represented by the 20 mile distance from Brandon to the homestead site. Percy, sometimes accompanied by one of the children, occasionally made the two day trip to Brandon and back. However, the womenfolk seldom left the homestead area, which became known as Aweme.

Initially the family shared a single large tent. Percy and the older boys set to work to cut logs for a house; they were hampered by the severity of mosquitoes that prevented them working in the woods after about 3PM. Winter threatened, and so Percy and the women constructed a sort of cellar 9 x 6 feet, as an improvement on the tent.

However, cooking was still done outside. Two neighbours took on the task of building a log house, consisting of two ground floor rooms and two first floor rooms. The last members of the family finally moved into the house on 27 December 1882. Percy christened the house "St. Albans". This house was far from warm, and very crowded. The lime chinking between the logs fell out, and over the years, moss, earth and other materials were used in attempts to block the wind and cold. In 1889, Elise Vane and her children moved into a separate house, as part of establishing homestead rights to additional land. In 1905–6 the log house was replaced by a second St. Albans, which was built professionally. This house still stands.

In the early days, there was little to eat and no money. The women and children established a garden. Percy planned out the farm, but from the first, much of the work was done by others. Alice bore four more children between 1884 and 1893, despite suffering scurvy. Alice and Elise were responsible for the cooking and clothing of the family. Alice was also responsible for educating the children and this was the only education the children had. Percy did not have the patience to teach the children, and when a local school became available, did not wish his children to attend. Percy indulged his interests in music and science, and delegated the running of the farm to his children. The girls kept chickens and operated a dairy. The boys did the ploughing and harrowing. Norman first took a turn at ploughing with oxen when he was 10. At that time the oldest boy, Edwy, was 13 and was expected to plough fields unaided, and all harrowing was done by the boys. By the age of 13, the boys were also considered old enough to be sent as hired hands to the neighbours, so augmenting the family income somewhat. At 15, the girls were sent to town to become servants. A consequence of these encounters of the children with the outside world and the opposite sex, was development of romances and marriages, many of which Percy did not approve. Percy's enormous ego made it difficult for him to let go when his children showed signs of independence.

Despite the unending labour requirements of the homestead, Percy and the children were enthusiastic and competitive in sports. A golf course and tennis courts were constructed. Arising from Percy's scientific interests was establishment of a weather station in 1884. Percy soon lost interest in the routine keeping of records, and this fell to others. Norman took over, and kept meticulous records. Interest in natural history was strong in the family, and feeding of birds, adoption of skunks, and insect and plant collecting were common activities. Although Percy made detailed descriptions of many of the items he collected, he seldom took steps to find out what they were. In contrast, several of the children became experts.

J.D. Shorthouse

Norman Criddle's headstone in the Criddle/Vane family cemetery at Aweme.

Since Percy did not believe in God, he established a family cemetery near St. Albans, in which most of the Criddles are buried. Elise Vane died in 1903 and was first to be buried there. Percy and Alice died within weeks of each other in early 1918. Theirs were the first of the characteristic heart-shaped head stones that adorn all the Criddle graves in the cemetery. Most of the Criddle headstones bear a word indicating their noted characteristic. Four headstones bear the word

"naturalist". Among them, Talbot Criddle "Sportsman Naturalist" 1890–1975, was an avid and talented player of tennis and golf. He was also a farmer and horticulturalist of some talent. Stuart Criddle (1877–1971) was a cultivator of lilies, taxidermist and mammalogist. He published 20 scientific articles in total, most of them dealing with mammals. Evelyn Criddle (1876–1972) was a very quiet individual and an excellent collector of insects, particularly tiger beetles. Professionally, he worked as a Provincial Government Weed Inspector. The fourth headstone marked "naturalist" was that of Norman Criddle.

To some extent we can let Norman tell his own story, as he prepared —and no doubt typed himself— an autobiography and similar items, which covered all but the last few years of his life. His laconic description of his early days is telling.

Came to Canada (Manitoba) in 1882.

Worked and starved on a farm for the next eight years. Continued to work on a farm until 1905.

Schooling, such as it was, provided at home; usually in the evenings during winter time. There was not time in summer. No opportunity for higher education was provided.

His first career entry, "Farmer 1882 to 1905", does not do justice to Norman's activities in this period. In 1898, Harry Vane (Norman's half brother) was leading the local fight against grasshoppers, among them *Melanoplus spretus* and *M. sanguinipes*. He had farmers plough the field margins to bury the young hoppers, and used a hopper dozer, filled with kerosene to collect and kill the hoppers. Harry Vane (probably with the help of Norman) developed a hopper-burner, which was a tray on skids filled with burning embers. However, the major breakthrough came later. In spring 1901, Norman's diary reports "I, in company with Harry Vane, discovered a simple remedy for killing locusts." Paris green (Copper acetoarsenite), salt and horse manure (or bran or sawdust) became known as Criddle mixture, and was widely used as a bait for control of grasshoppers for over 30 years. The outbreak of 1898–1903 represented the last outbreak of the Rocky Mountain locust, *M. spretus*, which became extinct. In fact, as far is known, the last living collection of the species was made by Norman in 1902.

Norman began drawing flowers and insects in about 1893, and exhibited several hundred illustrations of flowering plants at the Brandon Fair in 1898. Norman apparently did not pick the flowers he painted, and so his depictions of elaborate flower arrangements would have been painted in the field as individual plants. Norman's painting was carried out under extreme difficulty due to lack of money for paper and paints. He painted on any available scrap or paper, and in 1900 was almost completely out of paints, about which he wrote that "The sum of one dollar would help me enormously. In fact the sum of two dollars would overcome all difficulties. Yet this small sum seems as far off as the moon." Norman, unlike his father, was interested in correct identification of his specimens, and sent his flower drawings to Ottawa for identification. The drawings were well received in Ottawa, and note was made of them in The Ottawa Naturalist. The drawings and Norman's work on grasshoppers drew the attention of the Dominion Entomologist and Botanist, James Fletcher.

In 1900, Fletcher toured the grasshopper-afflicted areas of Manitoba, and visited Aweme to see Norman. They became firm friends until Fletcher's sudden death in 1908. From the meeting with Fletcher followed official recognition of Criddle mixture and temporary work for Norman demonstrating its use. Also, Norman began to receive commissions from the Dominion Department of Agriculture to make coloured drawings of weeds and weed seeds. In the winter of 1904–5, Norman traveled to Ottawa to complete drawings for a publication on farm weeds, for which Fletcher wrote the text. This was his best employment to date, as he received both a salary and travel expenses. This publication contained 56 plates, all by Norman Criddle, and has recently been reprinted by Lee Valley Tools Ltd.

For the next eight years, Norman divided his time between farming, botanical illustration and work for the Department of Agriculture with weeds and weed seeds. He involved his younger siblings in the collection of weeds and weed seeds. It was during this period, that he also began publishing in scientific journals. His first publica-

tion, on bluebirds, appeared in 1904, when Norman was 29 years old. The breadth of his interests is illustrated by the first six publications, which include three papers on birds, one on the effect of fungi on cattle, one on seed dispersal, and in 1907, his first entomological publication. Altogether he published at least 128 items, and the diversity of the first six was maintained until the end of his career.

The final entries of Criddle's autobiographical sketch see him turning towards full time entomology, but his first entomology appointment was not as routine as it might appear. In February 1912, while Norman was working as a seed analyst in Calgary, he received a letter from C. Gordon Hewitt, Dominion Entomologist, offering him a six-month per annum position with the Division of Entomology. Criddle was to work from Aweme and investigate the white grubs, Hessian fly and wheat stem sawfly that were at that time major problems in Manitoba. Criddle agreed, as long as he could begin later than 1 May, but was then told by Hewitt that the Division of Entomology had no money, and so the appointment would have to be delayed for a year. Terms of appointment were agreed in January 1913, in that Criddle would receive $1500 per year if a field station were established at Aweme. This appears to be $100 per month for salary and $300 for use of the homestead facilities. Finally, in May 1913, he received a telegram from Hewitt appointing him as temporary field officer and requiring him to begin work immediately. From this time forward Norman was to be a professional entomologist, all the specimens he collected would belong to the Crown, and he would endure much red tape. However, the initial appointment was only for the summer. The next winter, he was back in Calgary as a seed analyst. The permanent position began in 1914.

Criddle's first challenge was to construct a laboratory at Aweme. In March 1914, he submitted an estimate for a 12 x 16 foot structure costing $151 plus $14 for a concrete foundation. Ottawa viewed this as exorbitant and delayed construction. In 1915 the laboratory was built. Materials cost $108 and Norman was obliged to provide at least some of the labour, although much of the work was done by Evelyn and Talbot Criddle. In its final form, the first laboratory had an insectary attached to its west side. In 1923, a second laboratory, more suited to housing the insect collections was built. "Bug house tours" of the laboratories became a weekend entertainment for those in the Aweme area and these were often conducted by Norman, or in his absence, by his sister Maida. Shortly after Norman's appointment, his father arranged for construction of the "east wing" of St. Albans. This was to accommodate the many visitors to Aweme who came to see Norman, or


Norman Criddle in front of the first laboratory, ca. 1918.

Neil Holliday

The first laboratory at the beginning of renovations in 2004. The portion on the right is the remains of the insectary.

who worked for him. Maida became the chatelaine of St. Albans on the death of her mother, and provided for those who worked there or visited Norman. She also kept the weather records until she left the property in 1960.

Today, the homestead has been declared a Manitoba Provincial Heritage Park, and the Criddle/Vane Homestead Heritage Committee, among it several Criddle descendents, is working to preserve St. Albans and some of the other buildings. The first laboratory is in poor condition, but is being renovated by the Heritage Committee. The second laboratory has already been renovated, and is used as the headquarters for those working on the renovations of the buildings.

Among those who visited Norman Criddle at Aweme during his time as a professional entomologist were J. B. Wallis and R. D. Bird. Wallis was an amateur entomologist as he was superintendent of schools for Winnipeg. His greatest interest was in tiger beetles, about which he wrote an important monograph. The sandy soils of Aweme are prime tiger beetle habitat. R. D. Bird was on faculty at the University of Oklahoma, and spent his summers doing research on insect ecology in Oklahoma and in Western Canada. He was a frequent visitor to Aweme from the mid 1920s.

In 1926, Norman became foster parent to four nestling crows. Norman wrote an account of the crows and published it in the *Canadian Field Naturalist.* The crows were named Satan, Imp, Demon and Hoppy, the latter because of a broken leg. Norman was interested in the crows because he believed that they were on balance beneficial, despite their bad reputation with farmers. To prove his point, he tried to assess their daily capacity for predation of pests. He never did succeed. In one trial, after 5 h, the crows had consumed 552 cutworms and were still eating, but there were no more cutworms to be had. A trial with two crows eating white grubs was similarly abandoned after 5 h when the birds had eaten 121 –the entire supply of the laboratory. Something of Norman's work habits can be learned from his casual reference to the fact that the crows were waiting to be fed when he went down to the laboratory at 5 in the morning. Norman was interested in the crow's habit of caching food. In particular, he records the behaviour of Demon. Demon would fly on to Norman's arm, and pull out Norman's breast pocket handkerchief, disgorge a throatful of berries into the pocket and stuff the handkerchief back into the pocket. Norman also writes, I think with some glee, of the day Demon had been tearing apart a mouse and decided to save some of it for later. So he flew to J. B. Wallis's shoulder and stuffed the remains inside the collar of J.B.'s shirt.

Cam Jay, Professor Emeritus of Entomology at the University of Manitoba, relates some stories about the interactions of Norman, J.B. Wallis and Ralph Bird. Ralph was passionate about hunting, and so spent a lot of time at Aweme shooting geese, or virtually anything else that moved and could be eaten. Cam witnessed, at Ralph Bird's house, a film these three made. It was a silent black and white movie and involved a "sight gag". J.B. Wallis is the only human in the picture. He is in the middle of the frame with a shotgun pointed straight up. He takes one shot. Shortly afterwards, a goose drops at his feet. A few seconds after this, a couple of ducks come down, then another goose, then a couple more, then several more ducks. Eventually, the hunter is knee-deep in birds, all from a single shot. This was staged with Bird as camera man and Norman Criddle, just out of view on a ladder, dropping recently shot birds down onto the magnificent hunter, JB.

R. H. Handford and R. M. White were hired by Criddle as research assistants. White arrived in 1922 and stayed until 1931 when he moved to

Lethbridge. Handford started as a summer student in 1928 and continued working with Norman until the latter's death. Handford spoke of Norman Criddle as a very mild-tempered man, but not a weak character; he certainly controlled the laboratory. Handford remembered that Norman never milked the system for free lunches when he was in the field, and maintained absolute honesty in administering government funds.

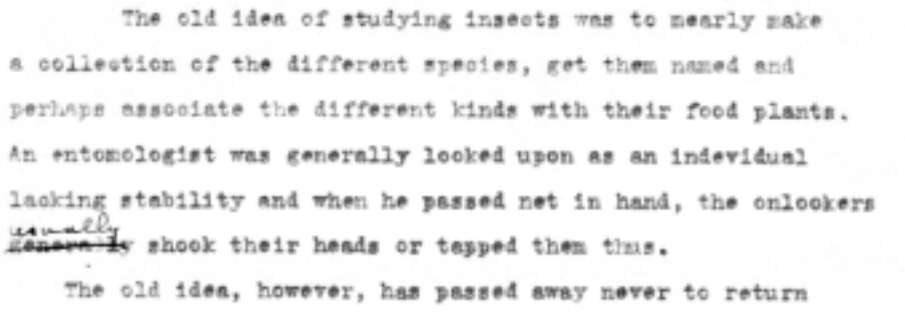
From the time of his first encounter with James Fletcher in 1900, Norman made regular reports of the pests of the season. From 1910 on, these often appeared as separate publications. From 1929 on, they were written with A.V. Mitchener, the first professor of Entomology at the University of Manitoba. Mitchener was a very fussy individual with absolutely no sense of humour, and it is a tribute to Norman that he was able to work with him. These accounts of the insects of Manitoba are a gold mine of information, but much of it has been lost or ignored. Bob Lamb (Agriculture and Agri-Food Canada, Winnipeg) furnished me with just one example of this. Through Fletcher, Norman reported the first occurrence of the orange wheat blossom midge, *Sitodiplosis mosellana*, in the Prairie Provinces, in the report of 1901. The next report of the wheat midge in Manitoba was in 1954, when Mitchener recorded it just north of Winnipeg at Selkirk. Mitchener did not claim that it was the first Manitoba record, but did not acknowledge the report of 1901. The next appearance of the wheat midge was the 1980s, and at that time, it was Mitchener's earlier finding that was regarded as the first record. It was only when Bob Lamb did some extensive digging that he came upon the information that, as for other "new pest insects", Criddle had first reported it.

Criddle was commissioned to work on hessian fly and wheat stem sawfly and in 1915 published an extension publication describing the life stages and habits of both of them. In the 1920s, wheat stem sawfly infestations extended across the prairie provinces, and losses in some wheat fields exceeded 50%. R. M. White was hired to work on the biology of the sawfly. In 1923, Criddle published a study of the life history of the sawfly in *The Canadian Entomologist*, and continued to publish extension literature on the topic as needed. Criddle and E. H. Strickland, University of Alberta, were particularly interested in the interaction of the insect and its host plants and the possibility of different host races of the insect. They proposed a prairie-wide collaborative study including themselves and Seamans at Lethbridge. This did not go far, as the focus of Lethbridge was on the stopping of economic losses, and the work Strickland and Criddle proposed was too "ivory tower". An understanding of pest population genetics was not seen as important for control.

Criddle worked on grasshoppers throughout his life, and published many times on them, ranging from extension items on control to detailed studies of their development and ecology. Many of these are still cited. Among his publications were descriptions of the egg pods of 72 species, the life history of some 70 species, and an account of the ecological setting and diet of about 80 species. In 1931, together with the Lethbridge and Saskatoon Entomological laboratories, Criddle initiated a prairie-wide egg survey of grasshopper eggs as a tool for predicting the severity of problems in summer 1932. The Manitoba portion of the survey was carried out from 1–15 October 1931 by Criddle, Handford and White. As shown in the original map of the results, the surveys provided considerably more detail about species composition than do current surveys done for the same purpose. This work was done only about 18 months before Norman's death, at a time when his health was already poor.

Ill health dogged Norman. He was chronically bronchitic from before the time of his immigration. In 1917, he was hospitalized for gall stones. The stresses of having to respond to insect emergencies anywhere in the prairies, the routine work of insect surveying and research plus the administration and the lack of funds took its toll during the summer. In the winter, Norman spent much of his time in Ottawa. By the early 1930s, Norman was in poor health.

In 1933, Norman was awarded an Honourary Diploma in Agriculture at the March Convocation of the Manitoba Agricultural College. This was described as "the highest honour the institution could bestow". It is not clear to me why



The old idea of studying insects was to nearly make
a collection of the different species, get them named and
perhaps associate the different kinds with their food plants.
An entomologist was generally looked upon as an individual
lacking stability and when he passed net in hand, the onlookers
~~Generally~~ usually shook their heads or tapped them thus.
The old idea, however, has passed away never to return

Introduction to "The problems of an entomologist", written by Norman Criddle.

Norman could not receive an honourary doctorate as, since 1924, the college was part of the University of Manitoba. I conjecture that the reason may have had to do with Norman's lack of any formal educational qualifications, but observe that some of our recent honourary degree recipients have had considerably less stature in their fields than did Norman in his. Notwithstanding, the recognition of Norman was greatly celebrated by colleagues, friends and family. A little over 2 months later, Norman was dead.

The then Dominion Entomologist, Arthur Gibson, and H. G. Crawford (1933) published an obituary and list of publications in *The Canadian Entomologist*. Among the many tributes to Norman that they quoted are these two. "There is no doubt in my mind that Criddle was the best informed field naturalist in the whole of Canada". "Mr Criddle had…so prominent and authoritative part in all prairie entomological activities that…[we have]…lost an irreplaceable colleague, friend and leader in the science" (p197).

Rob Roughley, University of Manitoba, who has done comparative studies of the Aweme fauna now and in the Criddle's time, has compiled a list of patronyms honouring Norman Criddle. One genus and 29 species of insect were named after Norman Criddle. This is in addition to at least eight more named after Aweme. In most cases, the species name recognizes that Norman collected the first specimens of the new species. It is perhaps indicative of his collecting ability that often these specimens were of species that are wide- spread but which had not previously been collected in other, more heavily sampled, parts of their ranges. Frequently Norman's collections represented repeat samples over times or locations, so that they provided information about range or period of activity. From among the dedications associated with these patronyms, I have selected three examples that show the esteem with which Norman was held. Kearfott (1907) named two species of tortricids after Norman, and commented, with respect to one species for which Norman had provided all 16 then-known specimens, collected over a three week period, "I take great pleasure in giving Mr Criddle's name to this species as a slight appreciation of his thorough and systematic work in these minute specimens" (p59). Aldrich (1918, p336) described " a few of the most abundant [new chloropid] species...[in material]…the writer received for study ...[from]... Mr Norman Criddle.… These…represent the oscinid fauna of the region quite fully, and…contain several undescribed species in some numbers… which Mr Criddle furnished with infinite industry, persistence and patience." For the four species described in the paper, Norman had collected 165 of the 179 specimens, and all 58 of *Oscinis criddlei* that bears his name. *Dyschirius criddlei* (Carabidae) was named by Fall (1925) on the basis of a single male, collected by Norman Criddle. Fall's dedication expresses "… a keen appreciation of [Mr Criddle's] success in bringing to light

rare species of the Canadian fauna, and of many kind donations to my own cabinet"(p309).

Something of the flavour of the man, and his quiet sense of humour, can be gained from some of his own unpublished writings. "The problems of an entomologist" might have been written to be given as a speech. Following the introduction, Norman goes on to talk about the necessary integration of disciplines. Starting with the obvious interactions of insects and plants, insects and birds and the effect of agricultural practice, Norman exhibits a comprehensive understanding of the role of predators, the significance of habitat loss and habitat change, and the role of conservation. The breadth of understanding of ecological interactions here is quite before its time. I would argue that in addition to the idea of Norman Criddle, the deviser of pesticides, the collector of insects and the documenter of basic insect biology, we could add Norman Criddle, systems ecologist. Two of Norman's notable attributes are also evident in this document. Norman had a life long hatred of the unnecessary loss of trees. Also, Norman was a champion of birds such as crows and cowbirds, which he regarded as beneficial, but which most people of his time thought of as pests.

From one of his last publications, on the biology of North American Acrididae, we see another example of Norman's holistic view of ecology. In this publication, he set out the typical habitats of 31 species of grasshoppers, but he also showed that the habitats could be grouped into 13 Ecological Associations. For each association, he characterizes in detail the dominant plants, the characteristic animals, and the typical grasshopper species. Criddle was doing this at about the time that a major split was occuring between animal ecologists and plant ecologists, because they thought they had little of common interest. Gleason and Tansley were arguing against the notion of ecosystms and associations and advocating focusing on the individual organisms.

Perhaps some further insights can be gained from the hand-written item among Norman's papers, in which he describes "The Fieldman". I infer from this item that Norman liked the freedom to make his own decisions and develop his own methods, that he enjoyed the many new challenges that came his way, and that he viewed himself as a pioneer to be followed by others. I am not sure whether implicit in his likening himself to a frontiersman is the idea that the field man is a simple individual using rough and ready means. If this is so, Norman was selling himself short. As we have seen, he had a sophisticated understanding of insects and enormous appreciation for the interconnectedness of the components of the prairie ecosystem.

Norman Criddle is one of the two individuals after whom the Entomological Society of Canada has named prestigious awards. The Criddle Award honours an amateur entomologist, a term now taken to mean someone who is not paid for their entomological work. I do not know whether this was viewed as appropriate because Criddle was an entomologist from an early age, but was not employed as such until he was 38. I think that the original meaning of amateur, "someone who loves what they do" is of far greater significance in summing up the life of Norman Criddle.

## Acknowledgments

I was lucky enough to have access to six volumes of personal documents of Norman Criddle that are in the Archives of the Entomological Society of Manitoba, and I acknowledge the Society Archivist, Rob Roughley both for making these available and for providing a considerable amount of information and encouragement during the development of the talk. Other entomologists in Manitoba also provided insights, particularly Cam Jay, Terry Galloway and Bob Lamb.

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Patronyms dedicated to Norman Criddle. Information compiled by RE Roughley, Department of Entomology, University of Manitoba.

| Order | Family | Genus | Species | Author | Year |
|---|---|---|---|---|---|
| Diptera | Heleomyzidae | *Criddleria* | | Curran | 1929 |
| Coleoptera | Buprestidae | *Agrilus* | *criddlei* | Frost | 1920 |
| Coleoptera | Byrrhidae | *Byrrhus* | *criddlei* | Casey | 1912 |
| Coleoptera | Carabidae | *Cicindela* | *criddlei* | Casey | 1913 |
| Coleoptera | Carabidae | *Dyschirius* | *criddlei* | Fall | 1925 |
| Coleoptera | Ciidae | *Cis* | *criddlei* | Dury | 1919 |
| Coleoptera | Elateridae | *Agriotes* | *criddlei* | VanDyke | 1932 |
| Coleoptera | Melyridae | *Malachius* | *criddlei* | Brown | 1928 |
| Coleoptera | Scarabaeidae | *Aegialia* | *criddlei* | Brown | 1931 |
| Coleoptera | Scarabaeidae | *Aphodius* | *criddlei* | Brown | 1928 |
| Coleoptera | Scarabaeidae | *Dialytes* | *criddlei* | Brown | 1929 |
| Coleoptera | Scolytidae | *Leperisinus* | *criddlei* | Swaine | 1916 |
| Coleoptera | Scolytidae | *Pseudocryphalus* | *criddlei* | Swaine | 1917 |
| Coleoptera | Staphylinidae | *Gyrophaena* | *criddlei* | Casey | 1911 |
| Coleoptera | Staphylinidae | *Microsaurus* | *criddlei* | Casey | 1915 |
| Diptera | Anthomyiidae | *Cordilura* | *criddlei* | Curran | 1929 |
| Diptera | Chloropidae | *Oscinis* | *criddlei* | Aldrich | 1918 |
| Diptera | Dolichopodidae | *Hydrophorus* | *criddlei* | VanDuzee | 1925 |
| Diptera | Psychodidae | *Psychoda* | *criddlei* | Curran | 1924 |
| Diptera | Tabanidae | *Tabanus* | *criddlei* | Brooks | 1946 |
| Diptera | Tipulidae | *Tipula* | *criddlei* | Dietz | 1914 |
| Ephemeroptera | Heptageniidae | *Heptagenia* | *criddlei* | McDunnough | 1927 |
| Hymenoptera | Argidae | *Arge* | *criddlei* | Garlick | 1927 |
| Hymenoptera | Braconidae | *Euphoriella* | *criddlei* | Loan & New | 1972 |
| Hymenotpera | Pamphilidae | *Cephalcia* | *criddlei* | MacGillivray | 1912 |
| Lepidoptera | Noctuiidae | *Euxoa* | *criddle* | Sm. | 1908 |
| Lepidoptera | Pyralidae | *Pyla* | *criddle* | Dyar | 1907 |
| Lepidoptera | Pyralidae | *Titanio* | *criddlealis* | Munroe | 1951 |
| Lepidoptera | Tortricidae | *Epinotia* | *normanana* | Kearfott | 1907 |
| Lepidoptera | Tortricidae | *Proteopteryx* | *criddleana* | Kearfott | 1907 |

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## Measuring temperature

**By Paul Fields**

Temperature is probably the single most important physical factor in entomology. Insects, being ectotherms, are for the most part the same temperature as their environment. There are notable exceptions, where insects raise or lower their body temperature (Heinrich, 1993). In any case, it is important to accurately measure the temperature in and around the insects' habitat, because it has such a significant impact on their biology. Most insects do not develop below 5°C or above 35°C. Between these extremes, their development, feeding, digestion, movement are more rapid at higher temperatures, rates increasing roughly two fold for each 10°C increase in temperature.

### Glass thermometers

This is probably the most common way that people measure temperature. The alcohol filled ones are the least expensive. Mercury thermometers are more accurate and are used for calibration, see below. They can be purchased for about $300 with a certificate of calibration from the National Institute of Standards and Technology. Thermometers are large and change slowly in response to temperature changes.

### Thermistors

Most of the hand-held digital thermometers use thermistors, resistors that change electrical resistance in response to temperature (Annoymous 2005). These are more expensive per sensor than thermocouples, but are more accurate. In general the differences in accuracy between thermistors and thermocouples should not be a factor in most entomological studies, as long as the system has been calibrated against a standard glass thermometer.

*Paul Fields (pfields@agr.gc.ca) has been examining the effects of temperature since he began his graduate work on the overwintering of insects at Université Laval. His interest in temperature continues to this day as a researcher with Agriculture and Agri-Food Canada, studying the effects of low and high temperatures on stored-product insects.*

### Thermocouples

Thermocouples are ingenious in their simplicity. They consist of two wires of different metals, such as copper and constantan, are twisted or welded together. In the old days, the other end of the wires were placed in an ice bath to give a constant temperature of 0°C. A small voltage is created when the opposing ends are at different temperatures. A sensitive multimeter, along with the appropriate reference tables can be used to measure the temperature. However, today most people plug the wires into a handheld thermometer or a datalogger which has an electronic reference junction rather than a reference junction in an ice bath.

The wires can be very fine, which is useful for measuring temperatures in microhabitats or even inside insects. The response time for thermocouples is faster than thermistors, probably because of their smaller mass. One of the advantages of thermocouples is that you cut a length of wire, strip the leads, twist the bare wires, and voila! you have a working temperature probe. I have wired grain bins and flour mills for temperate monitoring with hundreds of metres of wire. It would have been 2-4 times more expensive to do this with thremistors.

There are a number of ways to make the junction needed for thermocouples. You can simply bare the wires and twist the ends together, but this setup can come lose with time and movement. This can be a problematic if your thermocouple is at the bottom of 30 tonnes of grain. To prevent this, you can solder the twisted wire together, but I have always been concerned about this method as it adds different metals to the junction, possibly affecting the calibration. However, one of my colleagues has used the method for a number of years, and it doesn't seem to throw off the calibration. Another alternative to soldering is to use a solderless weld. To do this you twist one end of the bared wires together, attach the other

end of the wires to one terminal of a car battery or battery charger. The other terminal of the car battery is connected to a graphite rod. You can get a graphite rod by chopping open an old alkaline battery. Wearing safety glasses, touch the twisted end of the thermocouple wire to the graphite rod, and the spark is enough to weld the wire together without solder. However you make the junction, you may want to encase the whole end in epoxy to make it more solid and waterproof, preventing the corrosion of the metal.

### Infrared thermometers

All objects above 0°K (-273°C) emit irradiation in the infrared spectra. An infrared thermometer has a lens and sensor that collects and measures the infrared radiation from a surface (Grener and Young 2005). There are several advantages to measuring temperatures using an infrared thermometer; it is quick and it is non-intrusive, as you don't touch the object of interest, so you can measure objects at a distance or objects that are moving. There are, however, a few problems with this type of thermometer. As with visible light, different objects have different emissivity, so different objects for example, metal vs. soil, may have the same temperature but give different readings because they emit infrared differently. There are calibrations to correct these differences. Also, there can be some doubt as to what surface you are measuring, the further you are from an object the larger the area the thermometer measures. Finally, it will only measure surface temperatures, and you need a line of sight. There have been considerable advances in this area, resulting in smaller and cheaper sensors.

### Dataloggers

Dataloggers allow you to recorder temperatures at intervals from every second to every few days, and transfer the data electronically to a computer so you don't have to enter it manually. I have worked with three types of dataloggers. Campbell Scientific (http://www.campbellsci.com) has a number of dataloggers. I have worked with the CR10 for a number of years. The datalogger itself is only half the size of a laptop, but the batteries, junction panel and weatherproof case bulks up the size of the working datalogger considerably. The great advantage and the great problem with the Campbell Scientific's dataloggers is that they can be programmed. We had one configuration that would measure temperatures every second, and record the supercooling point of insects by detecting the heat of crystallization, but it took weeks to write and debug the program. Be prepared to commit a lot of time to get these dataloggers up and running. Perhaps this has changed with new support software.

The second datalogger, I have used is the SmartReader from ACR Sytsems Inc. (http://www.acrsystems.com/). It is smaller than the CR10, and I found it a little easier to get up and running. Both of these dataloggers can be accessed remotely via radio, telephone or cellphones.

The dataloggers that I mainly use now are small inexpensive units from Onset Computers, called HOBOs (http://www.onsetcomp.com). They cost about $70 to 150 a unit depending upon their capacity to measure temperature, relative humid-

Paul Fields

Thermometers and data oggers used to measure temperature, CR10 with thermocouple wire (top), thermocouple thermometer, data shuttle for HOBO, HOBO , digital thermometer (middle, left to right), SmartReader (below HOBO), calibration mercury glass thermometer (bottom).

ity, light or external sensors. The cheaper ones are at the limit of resolution of what I like for measuring temperature, ± 0.7°C, but for about another $25, a new unit with the resolution of ± 0.4°C is now available. The main feature with these is that it is easy to program them and download the data. The data shuttle is a useful tool that allows you to collect data without having to connect the dataloggers to a computer. Another advantage of these units is that you don't have to lay out wires from your site of interest to the datalogger. All these dataloggers allow you to do real time acquisition of data when they are hooked up to a computer. The Onset dataloggers only provide a few temperature probes per datalogger, whereas with the other dataloggers you can get from eight to several hundred temperature probes per datalogger. One caution, test to make sure that the datalogger is recording data, sensors are working, the program functions and the batteries charged, before setting up and leaving the datalogger to collect data.

### Calibration

Lastly, it is always a good idea to calibrate your temperature probes every so often. Water melts at 0°C, so I use crushed ice in water with a magnetic stirrer to get a reference temperature at 0°C. Boiling water at sea level boils at 100°C, and there are charts for adjusting for altitude. Before the days of GPS, explorers used this as a means of measuring altitude. However, because my calibration thermometer needs to be fully immersed to be accurate, I just use a large pan of water at room temperature. The water acts as a buffer for any sudden changes in temperature.

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Gruner, K., and Young, A. 2005 The new generation of infrared thermometers. Http://www.sensorsmag.com/articles/1099/80/main.shtml [cited 7 March 2005].

## Criddle-Vane homestead restoration

Thanks to all those who made generous donations to the restoration project for Norman Criddle's first entomology laboratory on Prairies. We have reached our goal of $5000, or will when the Province makes their donation as promised. The materials have all been bought. When doing a restoration project such as this you can't just walk into the local lumber store and purchase the materials. To match the original cedar siding we had to have it specially milled. Other materials had to be ordered from across the country.

We began actually working on the lab last fall. Taking off the pieces of siding - saving what we could and numbering those pieces to be returned to the same spot on the wall. A job requiring a gentle hand when working with 90-year old cedar. Some interesting artifacts were found in the earth around the building, ink bottles, three pair of strap on ice skates and a few odds and ends we aren't sure of.

The restoration was begun and the building stabilized for the winter. With the help of the soldiers at CFB Shilo we hope to be back at it this spring under the guidance of the restoration carpenter from Parks Canada. Both these groups have been very generous with their time and expertise.

Do you have photographs of the lab? Now that the building is underway we are trying to find photographs of the inside of Norman's lab so the inside can be restored too. We would also like to put some interpretive signs up inside the lab when it is finished, showing Norman working and telling more of the story of the importance of the site. Please contact the committee at the address below if you have any photographs you could share.

Thanks again for your support, hope to see you at the homestead this summer.

Sherry Dangerfield
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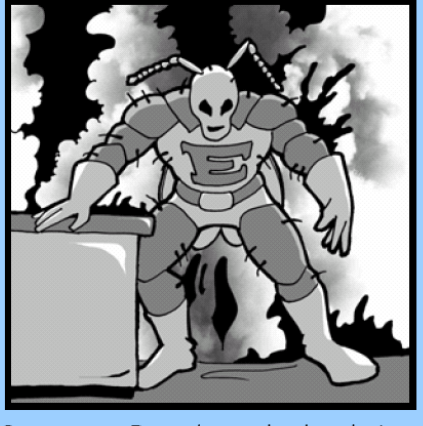
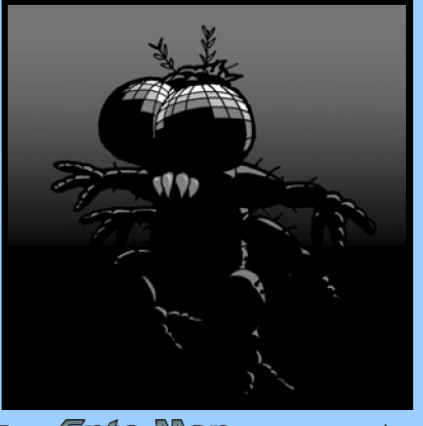
# The Adventures of Ento-Man


The laboratory is dark. Only the light of a fibre optic illumination unit reveals the fact that somebody still labours on. The lonely entomologist struggling with the seemingly endless diversity of insects.

Outside, storm clouds bristle. Suddenly a flash of lightning hits the room! Power surges through the microscope – a sudden scream and all is quiet.



Or is it? From beneath the desk, a huddled form arises. The timid entomologist... No more! He has become... Ento-Man ! His mission? To fly the banner of entomology wherever it has been neglected. To combat those who study fruit fly genetics and call themselves... ENTOMOLOGISTS!



Join Ento-Man next time when he comes face to face with the evil *Dr. melanogaster*!

Text : Andrew Bennett
Drawings: Gaétan Moreau

## The Lab of Peggy Dixon

The Dixon entomology lab is situated in the Atlantic Cool Climate Crop Research Centre of Agriculture and Agri-Food Canada in St. John's, Newfoundland and Labrador. Actually, it is two labs, with Peggy and Janet located in the main building and the students in an annex. We didn't deliberately try to segregate the students, but they have a lot more space there and are able to play loud music while they sort through samples or pin parasitoids. Our philosophy is that research should be fun! The insect fauna of Newfoundland and Labrador has some unique attributes - just like the place itself. We have a high proportion of introduced European species, for some of whom this is the only place in North America where they occur. We are the only entomology laboratory doing agricultural research in the province, which means that our projects are often varied. One obvious fact - currently we have an all-female lab, rather like some insect species in which males are occasional or rare. Despite our biased sex ratio, as you will see below, we study various aspects of insects on vegetables, berries, turf, trees and even rare and endangered plants. It is a bonus that we can do this while living in such a dynamic and beautiful place.

**Peggy Dixon**, Research Scientist
BSc (Memorial University), PhD (University of Edinburgh), dixonpl@agr.gc.ca

Peggy is from Baie Verte, Newfoundland and received a BSc in Biology from Memorial University and a PhD in Entomology from the University of Edinburgh, Scotland. She is an active member of the ESC and is currently 2nd Vice-President. Peggy has been a Research Scientist with Agriculture and Agri-Food Canada since 1988, and her primary focus is on pests, parasitoids and predators in vegetables and small fruits. She has a particular fondness for carabid beetles, which fits in well with her interest in habitat diversification and its impact on insects. Through her association with Memorial University, Peggy enjoys supervising graduate students and teaching courses. Although with two small children there isn't a great deal of spare time, Peggy also likes to sing, stepdance and read science fiction.

Andrea White

Most of the gang at a working lunch at India Gate Restaurant (left to right; Susan Tilley, Peggy Dixon, Carolyn Parsons, Robyn Auld, Janet Coombes, Heidi Fry and Nancy Hudson).

**Janet Coombes**, Entomology Technician
Dipl. Plant Science (NSAC), coombesj@agr.gc.ca

After 21 years as plant pathology technician at the St. John's Research Centre, Janet "morphed" into the Entomology technician in 1997. This was an opportunity to come full-circle, as Janet had started her career with Agriculture and Agri-Food Canada as a summer student with Ray Morris and later worked with him in the preparation of his book, *Butterflies and moths of Newfoundland and Labrador: The Macrolepidoptera*. In her most recent incarnation, Janet has worked on a survey of weevils and weevil damage in red clover, on a variety of projects related to *Delia radicum* emergence, parasitism and control, on the occurrence of *Rhagoletis* spp. on native fruit trees, and on collection maintenance and other projects on an ad hoc basis. Her current challenge is to investigate the genetic variability of *D. radicum* within Newfoundland. Besides trying to play Peggy's "Man Friday", she assists Peggy's graduate students by providing logistical support to students with their projects. Janet holds a Diploma of Plant Science at the Nova Scotia Agricultural College. She is also an accomplished musician - she writes songs, plays the harp and has a great voice - and mom to Julia, Laura and Tom.

**Robyn Auld**, graduate student
BSc (University of Ottawa), MSc candidate (Memorial University), robynauld@yahoo.ca

I received a BSc Environmental Science with a concentration in biodiversity and conservation from the University of Ottawa. Through the co-operative education program I began working for Agriculture and Agri-Food Canada at the Eastern Cereal and Oilseed Research Centre in Ottawa, where I assisted with research in soil physics. My honours project involved mapping the distribution of *E. coli* in relation to soil environmental gradients following manure injection. I am currently working towards an MSc in Environmental Science at Memorial University of Newfoundland. The objective of my research now is to uncover the life history of the chinch bug (*Blissus leucopterus hirtus*) within the northern limits of its distribution range and to explore environmental factors which may be affecting populations dynamics of this turf pest.

**Aisha Elmelwi**, graduate student
BSc (University of Tripoli), MSc (University of Tripoli), PhD candidate (Memorial University), elmelwi@hotmail.com

Aisha is an international graduate student, originally from Libya. She is a PhD student at Memorial University under the co-supervision of Peggy Dixon and David Larson. The overall focus of Aisha's research is to investigate the factors which allow co-existence of two closely-related insect species competing for resources. Her test species are two introduced, host-specific sawflies, *Nematus ribesii* and *Pristiphora pallipes*, herbivores on *Ribes* spp (gooseberries and currants). Aisha showed that timing of spring emergence differed between the two species and that feeding sites on the plant were segregated. Egg cannibalism also had a role in allowing the species to co-exist. Prior to starting her PhD work, Aisha taught entomology in a research/teaching lab in Libya. Although she has adapted to the decidedly cooler climate of St. John's she is looking forward to returning to Libya with her husband and young daughter after completion of her thesis.

Carolyn Parsons

Robyn Auld, Masters student, in the lab filtering samples for chinch bugs.

**Heidi Fry**, undergraduate student
BSc Hon. student (Memorial University), heidi_fry@hotmail.com

I am currently an undergraduate student at Memorial University of Newfoundland and will be graduating this spring with my BSc (Hons.) in Entomology and Parasitology. This past November I defended my thesis which reported a study of the elm spanworm, *Ennomos subsignaria*. This geometrid has defoliated species of hardwood trees at outbreak intensity in St. John's for the past four summers. The main objective for this study was to determine if there were egg parasitoids of the elm spanworm in St. John's. No egg parasitoids were recovered. However, pupal parasitoids were recovered with two species being recorded for the first time as parasitoids of the elm spanworm and one of these species being recorded for the first time in Newfoundland. As well as having Peggy as my honours supervisor, I have also had the opportunity to work in her lab as a summer student for the past two summers where the atmosphere is both educational and exciting! Along with finishing course work for my undergraduate degree, this semester I am also considering options for an MSc.

**Nancy Hudson**, Research Technician (industry collaborator)
BA (University of York), Horticulture Journeyman (Ontario), nancyhudson@nf.sympatico.ca

My primary research objective is to produce, in collaboration with industry and government, a relatively simple non-chemical control device, which can be used by industry to effectively manage the chinch bug. More specifically, I am quantifying the effectiveness of vacuuming in reducing chinch bug populations within the landscape environment. Concurrent with the vacuum study is the experimental incorporation of endophytic-enhanced fescue (as patches of sod) into landscape environments to observe chinch bug activity and to compare relative likenesses and differences with the surrounding non-endophytic grasses as relating to common cultural and environmental stress factors.

I graduated from York University with a BA in Sociology, and immediately commenced a dedication to self-study and employment in the field of landscape horticulture, where I acquired a Journeyman Trade in Horticulture, in Ontario. I then focused my sights on woody ornamentals and integrated pest management, which lead to a leap of faith and an exciting 10 years of work and intensive learning in the U.S.A. In 2002, I returned to Canada and settled in Newfoundland; after the shock, I was fortunate to meet and eventually work in cooperation with some very interesting, warm and insightful people at Agriculture and Agri-Food Canada.

**Carolyn K. Parsons**, graduate student
BSc (Agr.) (NSAC), PhD candidate (Memorial University), parsonsc@agr.gc.ca

I obtained my undergraduate degree in Plant Science and Pest Management from the Nova Scotia Agricultural College in 2000 where I focussed much of my studies on varying aspects of organic/sustainable vegetable production. I am thankful for the opportunity to return to my home province of Newfoundland and Labrador to continue studies in this area and work with Peggy Dixon. I am in the process of writing up my thesis on agro-ecosystem diversification and the cabbage maggot (*Delia radicum*). My project investigated the use of different plant species as possible

Heidi Fry

Carolyn Parsons tending to her relay cropping plots, in St. John's NL.

intercrops for cauliflower in order to reduce oviposition by the female fly while addressing the issue of competition between the intercrops. During the past few years I have also set up a cabbage maggot rearing program here in St. John's and have been involved with research on the strawberry root weevil. After the thesis is completed I would like to continue research in the area of organic/sustainable agriculture and am interested in ecologically based pest management systems. Outside of academia (yes, I have discovered this realm exists) I am a mother to an amazing six-year old and enjoy gardening, cooking, hiking and going out to listen and dance to the awesome music in St. John's!

**Susan Tilley**, graduate student
BSc Hon., PhD candidate (Memorial University), stilley@mun.ca

In 2003, I completed my honours thesis, the purpose of which was to determine if unoccupied sites were important in the definition of critical *Braya longii* (endangered) and *B. fernaldii* (threatened) habitat. The global distribution of these arctic, native brassicas are restricted to the Limestone Barrens of the Northern Peninsula of Newfoundland. The Limestone Barrens is a unique habitat and a hotspot of plant diversity, and by the completion of my honours project I was hooked! Immediately following my graduation I began graduate studies. The purpose of my current research is to determine if the population stability of *Braya* spp is threatened by the annual influx of the diamondback moth, *Plutella xylostella* (L), from overwintering sites in the United States. This insect is an agricultural pest whose hosts are mustard crops that are not often available on the Northern Peninsula. Adults arrive on the island in early July and larval feeding causes extreme damage to both leaves and reproductive structures throughout the growing season. I now know that the diamondback moth can reproduce in critical *Braya* habitats, which was previously thought to be improbable due to climatic conditions. I am presently investigating whether diamondback herbivory weakens plants allowing infection by *Fusarium* spp. because since 2003 fungal infection has resulted in the death of over 400 plants. I plan to combine these insect data with long-term demographic data in a population viability analysis.

Joni Kemp

Susan Tilley on Limestone Barrens of the Northern Peninsula of Newfoundland the only place where the tiny endangered *Braya* spp. plants are found.

## The student wing / L'aile étudiante

**By Tonya Mousseau**

M. Alperyn

With the new year underway, I will be in the process of making sure all student webpages are updated and new members take advantage of this opportunity to get their research and their name "out there".

This year, the joint annual meeting with the Entomological Society of Alberta will be held in Canmore, AB. The student symposium will have a new twist this year, being run by the students, for the students. I have agreed to organize this symposium so please see the information below for further details.

The entire Directory of Entomological Information in Canada has now been updated for 2005! This achievement would not have been possible without the generous volunteer time commitment of the ESC student members. I would like to thank Jeanne Robert, Ayman Mostafa, Mireille Marcotte and Sarah Jandricic. The newest version is based on the hard work done by past ESC student committees, in particular, Troy Danyk, who laid the foundation of the document and continued to update it years after. For this, the ESC student committee is extremely grateful.

I invite you to peruse this directory and to share my pride not only in what we have accomplished together but also in the new opportunities, increased understanding and educational benefits that will flow from these achievements.

All the best with your research!

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### Thesis roundup / Un foisonnement de thèses

Alma, Colleen R.; colleenalma@yahoo.ca, MSc January 2005. *Intraguild interactions between two natural enemies of* Trialeurodes vaporariorum *(Homoptera: Aleyrodidae), the predator,* Dicyphus hesperus *(Heteroptera: Miridae), and the entomopathogenic fungus,* Paecilomyces fumoroseus *Apopka-97 (Deuteromycotina: Hyphomycetes) (PFR 97).* Supervisor: Bernie Roitberg, Simon Fraser University.

Haye, Tim; t.haye@cabi.org, PhD July 2004. *Studies on the ecology of European* Peristenus *spp. (Hymenoptera: Braconidae) and their potential for the biological control of* Lygus *spp. (Hemiptera: Miridae) in Canada.* Supervisors: Hans Jürgen Braune, Ulrich Kuhlmann, Peter Mason, Bruce Broadbent, Christian-Albrechts-University, Switzerland.

Henderson, Allison Eva; aeh@sfu.ca, MSc 2004. *Behavioural and chemical ecology of* Exophthalmus jekelianus *(Coleoptera:Curculionidae) (White) on coffee in Costa Rica.* Supervisor: Bernie Roitberg, Simon Fraser University.

Peterson, Jason Harvey; jhpeters@sfu.ca, MSc 2004. *Sex allocation in a solitary bee: A behavioural ecology approach.* Supervisor: Bernie Roitberg, Simon Fraser University.

Zeran, Rebecca; rzeran1@po-box.mcgill.ca, MSc October 2004. *Biodiversity of saproxylic Coleoptera in 'old-growth' and managed forests in southeastern Ontario.* Supervisors: Robert S. Anderson and Terry A. Wheeler, McGill University.

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**TOTAL PAID / PAYÉ** ☐

Official receipt / reçu officiel ☐ Yes/Oui
Name and contact information on the ESC Web Membership Directory? ☐ Yes/Oui
Nom et vos coordonnées dans l'annuaire Web de la SEC des membres? ☐ No/Non

**Cheque or money order payable in Canadian or US Funds as detailed above, through Canadian or US Institution to the Entomological Society of Canada.**
**Chèque ou mandat poste payable ($ Canadiens ou US, ci-dessus) par établissement canadien ou US à la Société d'entomologie du Canada.**

☐ MASTERCARD ☐ AMEX or/ou ☐ VISA
#..... Exp. Date ...../..... Signature.....
Credit card payments will be processed using the Canadian dollar amounts
Les frais portés à une carte de crédit seront traités en utilisant les dollars canadiens.

## Prix et bourses d'études de la Société d'entomologie du Canada

### Annuel

**Bourses pour étudiants post-gradués**

La Société d'entomologie du Canada (SEC) offre deux bourses d'une valeur de 2000 $ chacune pour aider des étudiants qui débutent des études post graduées et des recherches en vue de l'obtention d'un diplôme d'études supérieures en entomologie (habituellement une à un(e) étudiant(e) à la maîtrise et l'autre à un(e) étudiant(e) au doctorat). Les bourses seront accordées aux étudiants ou étudiantes en raison des seuls critères de réussite académique. **Date limite : 16 juin 2005**

**Subventions de recherche-voyage au niveau des études supérieures**

Deux subventions de recherche-voyage, pouvant atteindre 2000 $, sont offertes pour aider les étudiants et étudiantes à élargir le champ de leur formation supérieure. Les bourses seront accordées aux étudiants ou étudiantes en raison des seuls critères de réussite académique. **Date limite : 18 février 2005**

**Bourse étudiante de voyage pour assister à la réunion annuelle de la SEC**

Une ou plusieurs bourses de 500 $ chacune seront offertes pour aider les étudiant(e)s, membres de la SEC, à assister à la réunion annuelle. Pour être admissible, les étudiant(e)s doivent faire une présentation ou présenter une affiche lors de la réunion annuelle. Les bourses seront accordées aux étudiants ou étudiantes en raison des seuls critères de réussite académique. **Date limite :** (la même date limite que celle pour soumettre un résumé). Note : Les récipiendaires seront avisés en août , ce qui leur donnera amplement le temps de planifier leur voyage.

Consulter http://esc-sec.org/students.htm pour les détails ou le *Bulletin de la SEC* 2003 35(4) 188-191 ou contacter :

Brian Van Hezewijk
Président Comité des prix aux étudiants de la SEC
Agriculture et Agroalimentaire Canada
Case postale 3000, Lethbridge, AB T1J 4B1
Courriel : VanHezewijkB@agr.gc.ca

### Special

**Bourse Keith Kevan en systématique**

En mémoire du D. Keith McE. Kevan, la Société d'entomologie du Canada offre une bourse d'étude de 1000 $ pour aider les étudiant(e)s post-diplômé(e)s qui entreprennent des études en taxonomie des insectes. Cette bourse sera accordée, les années impaires, selon des critères d'excellence académique et de la prééminence en taxonomie des insectes. **Date limite : 16 juin 2005**

**Bourse John Borden**

Créée en 2000, cette bourse a été instituée en l'honneur de John Borden, dont l'enseignement et la recherche en écologie chimique ont influencé internationalement la lutte contre les insectes ravageurs et l'entomologie. Cette bourse de 1000 $, est offerte aux étudiant(e)s pour souligner une recherche innovatrice en lutte intégrée. **Date limite : 16 juin 2005.**

Steve Marshal

Nitidulids, a small *Epuraea* and a relatively large *Glischrochilus.*

## Entomological Society of Canada awards and scholarships

### Annual

**Postgraduate awards**

Two postgraduate awards of $2000 will be offered to assist students beginning study and research leading to a post-graduate degree in entomology (normally one to a MSc, and one to a PhD student). The postgraduate awards will be made on the basis of high scholastic achievement. **Deadline: 16 June 2005**

**Research-travel scholarship**

Two research-travel scholarships of a maximum of $2000 each will be awarded to help students increase the scope of their graduate training. Applications will be judged on scientific merit. **Deadline: 18 February 2005**

**Student conference travel awards**

One or more awards of $500 each to be awarded as financial assistance for travel to the annual meeting by student members of ESC. To be eligible, students must present a paper or poster at the annual meeting. Applications will be judged on academic merit. **Deadline:** (same as deadline for abstracts to annual meeting). Note: winners will be notified in August, so travel plans can be made.

See http://esc-sec.org/students.htm for complete details or *Bulletin ESC* 2003 35(4) 188-191 or contact:

Brian Van Hezewijk
Chair ESC Student Awards Committee
Lethbridge Research Centre
Agriculture and Agri-Food Canada
P.O. Box 3000
Lethbridge, Alberta T1J 4B1
E-mail: VanHezewijkB@agr.gc.ca

### Special

**Keith Kevan scholarship in systematics**

In memory of D. Keith McE. Kevan, the Entomological Society of Canada offers a scholarship of $1000 to aid students undertake postgraduate studies in insect taxonomy. This scholarship will be awarded in odd numbered years, with the selection criteria being academic excellence and taxonmical ability. **Deadline: 16 June 2005**

**John Borden scholarship**

Created in 2000, this scholarship was established in honour of John Borden, who's teaching and research in chemical ecology is recoginized around the world for its impact on pest control and entomology. This scholarship of $1000 will be offered to students to encourage innovative research in the field of IPM. **Deadline: 16 June 2005.**

Steve Marshal

Asilidae - *Promachus vertebratus*

## Entomological Society of Canada Graduate Student Symposium:

**Call for submissions**

A Graduate Student Symposium will take place this year in Canmore, Alberta, during the joint Annual Meeting of the Entomological Society of Canada and Alberta Entomological Society, 2-5 November 2004. The symposium is currently scheduled for the morning of Friday 4 November.

The principal goal of the symposium is to give a higher profile to graduating students as they move to the next stage in their careers by providing them a longer time slot to talk about their research.

To be eligible, students must have either defended their theses in the past year or be planning to defend within one year of the meeting. The degree may be either MSc or PhD.

Students from all disciplines are encouraged to submit an abstract. Ideally, the symposium will follow the general theme of the meeting, "Entomology: A celebration of life's little wonders"; however, depending on the submissions a different focus may be selected.

- four presentations will be selected.

- presentations will be approx 30 minutes in length with 5 minutes for questions.

- papers that are included in the Graduate Student Symposium will **not** be eligible for the Presidents Prize, however speakers may also submit a paper on a more specific topic to the student competition. See also point 3 below.

If you are eligible and want to be considered for the symposium please submit the following information by 15 June 2005:

1. An **expanded** abstract (200-300 words) describing your proposed presentation and how it relates to the theme of the meeting "Entomology: a celebration of life's little wonders".

2. A **letter (or e-mail) of support** from your principal supervisor that confirms the anticipated or actual date of graduation, and comments on your proposed presentation.

3. Also include a **standard abstract** (70 words) and title. If not selected for the Graduate Student Symposium, your presentation will automatically be included in the President's Prize Competition.

Students who have been selected to speak will be contacted by 31 July 2004. When notified they will receive a list of the other speakers, e-mail addresses and a copy of all initial abstracts to identify point for discussion in the talks and elimination of potential overlap.

Expanded abstracts of chosen speakers will be published in the December issue of the *Bulletin of the Entomological Society of Canada.*

Submission for the graduate student symposium should be sent to:

Tonya Mousseau, tmoussea@ucalgary.ca

Fax: (403) 289-9311

Electronic submission is encouraged and preferred!

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**Potential MSc project**

Paul Fields is developing project with a pest control company and a major cereal processor. The goal of the project is to reduce the use of insecticides in food processing facilities, such as flour mills and breakfast food manufactures. The project would examine the effects of disturbance (cleaning etc…) on the fitness of flour beetles. It would involve work in both the laboratory and in food processing facilities.

It should be known by May 2005 if funding for the project has been granted, which would include funding for a Masters student.

If you are interested in applying to work on this project as a Master's student at the Department of Entomology, University of Manitoba, please contact Paul Fields, pfields@agr.gc.ca, (204) 983-1468.

## Symposium des étudiants diplômés de la Société d'entomologie du Canada

### Invitation générale

Un Symposium des étudiants diplômés est organisé à l'occasion de l'assemblée annuelle conjointe de la Société d'entomologie du Canada et de la Société entomologique Alberta, qui aura lieu du 2 au 5 novembre 2005, à Canmore (A.-B.). Jusqu'à présent, il est prévu que le symposium aurait lieu dans la matinée du vendredi 4 novembre.

Le but premier du symposium est de mettre en lumière les travaux de recherche des étudiants universitaires diplômés avant qu'ils ne passent à la prochaine étape de leur carrière.

Pour être admissible, les étudiants doivent avoir défendu leur thèse au cours de la dernière année ou avoir l'intention de la défendre dans les douze mois qui suivront l'assemblée. Sont admissibles les étudiants à la maîtrise et au doctorat.

Les étudiants de toutes les disciplines sont encouragés à présenter un résumé. Idéalement, le symposium devrait correspondre au thème général de l'assemblée. Toutefois, selon la nature des sujets proposés il sera possible de lui donner une orientation différente.

- Les organisateurs choisiront quatre ou cinq exposés.

- Chaque exposé doit durer environ 30 minutes, et il faut prévoir cinq minutes pour les questions.

- Les exposés présentés au Symposium des étudiants diplômés ne sont pas admissibles au Prix du président. Cependant, les conférenciers qui le souhaitent peuvent soumettre un exposé sur un sujet plus précis au concours des étudiants. (Voir le point 3 ci-après.)

Si vous êtes admissible et que vous souhaitez présenter un exposé au Symposium, veuillez nous faire parvenir les documents suivants au plus tard le 15 juin 2005 :

1.Un résumé **élaboré** (de 200 à 300 mots) décrivant l'exposé que vous proposez faire et faisant le lien entre le sujet de l'exposé et le thème de l'assemblée. Voir la page suivante pour une description du thème.

2. Une **lettre (ou un courriel) d'appui** de votre directeur de thèse, confirmant la date réelle ou prévue de la collation des diplômes, et commentant l'exposé que vous prévoyez faire.

3. Un **résumé normal** (70 mots) avec le titre. Si votre exposé n'est pas choisi pour le Symposium des étudiants diplômés, il sera automatiquement inclus dans le concours pour le Prix du président.

Les étudiants dont l'exposé sera choisi pour le Symposium en seront informés au plus tard le 31 juillet 2005. À ce moment-là, nous leur remettrons également la liste des noms et adresses de courriel des autres conférenciers ainsi qu'une copie des résumés déjà choisis afin de leur permettre de se préparer aux discussions et d'éviter les chevauchements éventuels.

Les résumés élaborés des conférenciers seront publiés dans le numéro de décembre du *Bulletin de la Société d'entomologie du Canada.*

Si vous souhaitez présenter un exposé au Symposium des étudiants diplômés, envoyez votre résumé à :

Tonya Mousseau, tmoussea@ucalgary.ca
fac. : (403) 289-9311

Nous préférons nettement les candidatures envoyées sous forme électronique.

# Joint annual meeting of The Entomological Society of Canada and The Entomological Society of Alberta

## Entomology: A celebration of life's little wonders

**Radisson Hotel and Conference Centre**
**Canmore, Alberta, 2-5 November 2005**

On behalf of the Entomological Society of Alberta and the Entomological Society of Canada, we are pleased to invite you to the 2005 Joint Annual Meeting which will be held at the Radisson Hotel and Conference Centre in Canmore, Alberta. The theme for the meeting is *Entomology: A celebration of life's little wonders*, and we are confident that the symposia, workshops and submitted papers will combine to create an exciting and informative meeting.

Due to the proximity of the annual meetings of the ESC and the Entomological Society of America (the latter running 6-9 November), we are starting the Canmore meeting earlier than originally planned. The 2005 meeting will thus begin on Wednesday, 2 November and will wrap up on Saturday, 5 November. This should allow members who wish to attend both the ESC and ESA meetings to do so; Canmore's proximity to the International Airport in Calgary should make travel simple.

The 2005 JAM will have a spectacular setting. Canmore is located in the beautiful Rocky Mountains, minutes from Banff National Park, and an hour's drive (100 km) from the international airport in Calgary, Alberta. Banff townsite is only 20 km from Canmore. The Radisson Hotel is a 5-minute walk from downtown Canmore, or a 15-minute walk from a trail-head. The hotel includes 224 guestrooms, each with a mountain view, high-speed wireless internet access, an indoor pool, whirlpool, steam room, fitness entre, restaurant and children's playground. For more information, visit the Local Arrangements website at http://www.esc-canmore.org, or go straight to the Radisson reservations page at http://www.radisson.com/canmoreca/. The Radisson is offering us a special conference rate for the hotel of $89.00 per night (for up to two people in a room, plus taxes). Be sure to mention the Entomological Society of Canada Conference when booking to get the conference rate.

If you have queries or suggestions, feel free to contact the chair of the Organizing Committee, John Acorn (janature@compuserve.ca), or one of the Program Chairs, Dave Langor (DLangor@NRCan.gc.ca) and Felix Sperling (felix.sperling@ualberta.ca).

Please visit our webpage for more information and all the news as it develops about the meeting: www.esc-canmore.org.

Dan Johnson

## REGISTRATION FORM

Name: _____
Title First Name Last Name
Preferred name for name tag (if different from above)
Affilation:_____
Address: _____
Phone:_____ Fax: _____ E-mail: _____
**(Note: registrations will be acknowledged by e-mail, given a current and legible e-mail address.)**

Accompanying Person (there are no fees for accompanying persons; extra banquet tickets may be purchased at the registration desk):_____

| Fees: | Before August 1st | After August 1st | Total |
|---|---|---|---|
| Regular ESC or AES member | $140 | $180 | $_____ |
| Regular Non-member | $180 | $220 | $_____ |
| Student or retired member | $ 70 | $ 90 | $_____ |

Banquet dinner preference: indicate meat/seafood entree ☐ or vegetarian ☐

**Registration includes**: Program (with abstracts) and admittance to meetings, mixer and banquet. Extra banquet tickets may be purchased at the registration desk. No refunds on registration after 15 September 2005.

**Payment Details:**
☐ Cheque for total (make payable to ESC/ESA 2005) or ☐ Credit card:
Name on Credit Card (please print)_____
Credit card type: ☐VISA or ☐Mastercard Credit card Number: _____

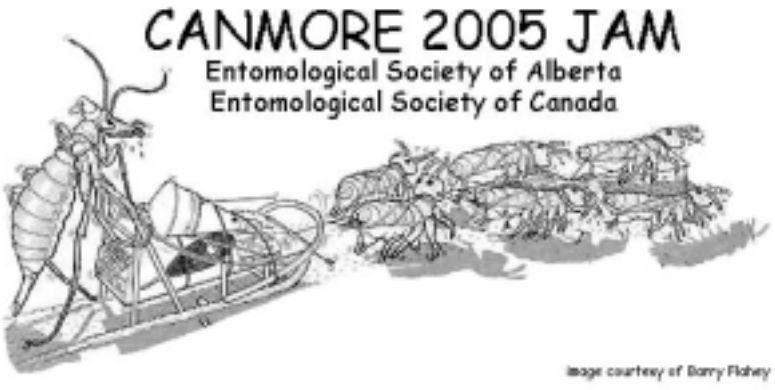
Signature:_____ Expiry Date: _____

**Accommodation:** Everyone is encouraged to stay at the Radisson Hotel (rate: $89.00 for up to two people, if reserved before 2 October 2005). Please indicate when registering that you are with the Entomological Society of Canada conference to get the conference rate, and please reserve as early as you can to allow us to plan for the various events.

**Please return this form with fees to:**
ESC/ESA registration
c/o Greg R. Pohl
Insect I.D. Officer / Museum Curator
Northern Forestry Centre - Canadian Forest Service
5320 - 122 St., Edmonton, Alberta
Canada T6H 3S5
Phone: (780) 435-7211, Fax: (780) 435-7359
e-mail: gpohl@nrcan.gc.ca
ESA Website: www.esc-canmore.org

**Hotel Reservations are available from:**

Radisson Hotel and Conference Center Canmore
511 Bow Valley Trail, Canmore, Alberta T1W 1N7
Phone (403) 678 3625, Fax (403) 678 3765
Toll Free 1- (800) 333-3333
e-mail: rhi_cnmr@radisson.com
Website: http://www.radisson.com/canmoreca




## 2-5 November 2005
## Radisson Hotel & Conference Centre Canmore, Alberta

## Meeting theme: Entomology: A celebration of life's little wonders

**Symposia:**

Maintaining arthropods in Northern forest ecosystems
Organizers: John Spence and David Langor

The biology and diversity of Arachnids
Organizers: Heather Proctor, Derrick Kanashiro, Robb Bennett

Arthropods and fire
Organizer: Rob Roughley

Wheat stem sawfly
Organizer: Hector Carcamo

Graduate student symposium
Organizers: Tonya Mousseau and Tyler Cobb

**Graduate student symposium**

The main goal of this symposium is to profile graduating students moving on to the next stage of their careers, and allow them a longer time slot to feature their research. To be eligible, students must have defended in the last year or plan to defend within one year of the meeting. Ideally, the topic of the presentation should be related to the theme of the meeting: *Entomology: A celebration of life's little wonders*. Current graduate students who participate in this symposium are also eligible to compete for the President's Prize; however, it is required that the symposium topic and President's Prize talk or poster be substantially different.

Help is needed to identify the most promising speakers for this symposium. If you are an eligible student interested in participating, or if you know of someone that would be suitable, please contact Tonya Mousseau (tmoussea@ucalgary.ca). Please reply with your expression of interest and title of your proposed talk by 15 June 2005. Full details will be available at the ESC website in the student section. http://esc-sec.org/students.htm and page 32.

# CALL FOR SUBMITTED PAPERS AND POSTERS

**DEADLINE:** Postmarked 8 July 2005

**Categories of presentation:**

**Oral presentation - Regular, President's Prize***
**Poster presentation - Regular, President's Prize***

*Students are eligible for the President's Prize (1 per session) if you are:

- Currently enrolled in a degree program or have graduated from a degree program since the last annual meeting (October, 2004)
- Registered at the meeting and have indicated the wish to participate in this category at the time the title and abstract were submitted
- The principal investigator and presenter of the paper or poster

**Language**: Presentations may be in French or English.

**Oral presentation:** 12 min + 3 min questions and discussion
Presentations in PowerPoint are encouraged. To minimize potential incompatibilities between the software versions you use to develop, and we use to display these presentations, we recommend limited use of animation, use of common Windows fonts for text and symbol fonts for equations. **Do not mail your presentation,** but bring to meeting on CD-R, after testing this copy on a different PC machine and submit it when you register. If using 35 mm slides, please provide your own carousel. Please indicate method of presentation when submitting your abstract.

**Poster presentation:**
Posters can be set up on Thursday morning (November 3) and left in place for the duration of the meeting. Presenters are requested to attend their posters in particular during the designated poster session on Friday, November 4, from 15:15 - 16:30.

**Information required:** Please provide information in this order and with these headings:
1) Author(s) name(s), 2) name of presenter, 3) address, 4) title, 5) abstract, 6) category (Regular or President's Prize), 7) language of presentation, and 8) method of presentation (PowerPoint or 35 mm slide). Please submit this information by e-mail. Abstracts should be 70 words or less. If longer than 70 words, the editors reserve the right to reduce accordingly. **If possible, please provide your information in both French and English. All abstracts will be placed on the website.**

**Please submit to:**

Felix Sperling
Department of Biological Sciences
University of Alberta
Edmonton, Alberta
Canada T6G 2E9
Tel: (780) 492-3991, Fax: (708) 492-9234
E-mail: felix.sperling@ualberta.ca

# Congrès conjoint de la Société d'entomologie du Canada et de la Société d'entomologie d'Alberta

## L'Entomologie: Une célébration des petites merveilles de la vie!

**Hôtel et centre de conférence Radisson**
**Canmore, Alberta, 2-5 novembre 2005**

Au nom de la Société d'Entomologie de l'Alberta et de la Société d'Entomologie du Canada, nous sommes heureux de vous inviter à la Réunion conjointe annuelle qui se tiendra à l'hôtel et centre de conférence Radisson à Canmore, en Alberta. Le thème de cette réunion est *Entomologie: Une célébration des petites merveilles de la vie!* et nous sommes confiants que les symposiums, ateliers et présentations soumises se combineront pour former une réunion excitante et informative.

À cause de la proximité entre les réunions annuelles de la SEC et de la Société d'Entomologie d'Amérique (cette dernière se déroulant du 6 au 9 novembre), nous débutons la réunion de Canmore plus tôt que ce qui était originalement planifié. La réunion de 2005 commencera donc mercredi le 2 novembre et se terminera le samedi 5 novembre. Ceci devrait permettre aux membres qui veulent assister aux deux réunions de le faire; la proximité de Canmore avec l'aéroport international de Calgary devrait rendre le déplacement facile.

La réunion conjointe annuelle de 2005 aura lieu dans un cadre spectaculaire. Canmore est situé dans les magnifiques montagnes Rocheuses, tout près du Parc National de Banff et n'est qu'à une heure de route (100 km) de l'aéroport international de Calgary en Alberta. La ville de Banff n'est située qu'à 20 km de Canmore. L'hôtel Radisson est à 5 minutes de marches du centre-ville de Canmore, ou à 15 minutes de marche d'un sentier. L'hôtel possède 224 chambres, chacune avec une vue sur les montagnes, un accès à internet haute vitesse, une piscine intérieure, un bain tourbillon, un sauna, un centre d'entraînement, un restaurant et un terrain de jeux pour les enfants. Pour plus d'information, visitez le site internet à http://www.esc-canmore.org, ou allez directement à la page de réservation de Radisson à http://www.radisson.com/canmoreca/. Le Radisson nous offre un tarif spécial de conférence de 89.00$ par nuit (jusqu'à deux personnes par chambre, plus taxes). Assurez-vous de mentionner la conférence de la Société d'Entomologie du Canada pour obtenir ce tarif.

Si vous avez des questions ou des suggestions, n'hésitez pas à contacter le président du Comité organisateur, John Acorn (janature@compuserve.ca), ou un des présidents du programme, Dave Langor (DLangor@NRCan.gc.ca) et Felix Sperling (felix.sperling@ualberta.ca).

Visitez notre site web pour plus d'information et les dernières nouvelles concernant la réunion : www.esc-canmore.org.

Paul Fields

# FORMULAIRE D'INSCRIPTION

Nom : _____
Titre Prénom Nom
Nom à inscrire sur le porte nom (si différent du nom susmentionné)
Affiliation :_____
Adresse : _____
Téléphone : _____ Fax : _____ Courriel : _____
(**Nota : L'inscription sera confirmée par courriel avec une adresse électronique valide et lisible.)**

Personne accompagnatrice : (il y n'a pas des frais pour les personnes accompagnatrices ; on peut acheter des billets de banquet supplémentaire à l'inscription.) _____

| **Coût :** | **Avant le 1er août** | **Après le 1er août** | **Total** |
|---|---|---|---|
| Membre régulier de la SEC ou de la AES | 140 $ | 180 $ | _____$ |
| Non-membre | 180 $ | 220 $ | _____$ |
| Étudiant ou membre retraité | 70 $ | 90 $ | _____$ |

Préférence pour le banquet : viande/fruits de mer ☐ ou plat végétarien ☐

**Compris dans les frais d'inscription :** Programme (avec les résumés) et participation aux réunions, à la réception et au banquet. Des billets supplémentaires pour le banquet seront en vente au bureau d'inscription. Aucun remboursement après le 15 septembre 2005.

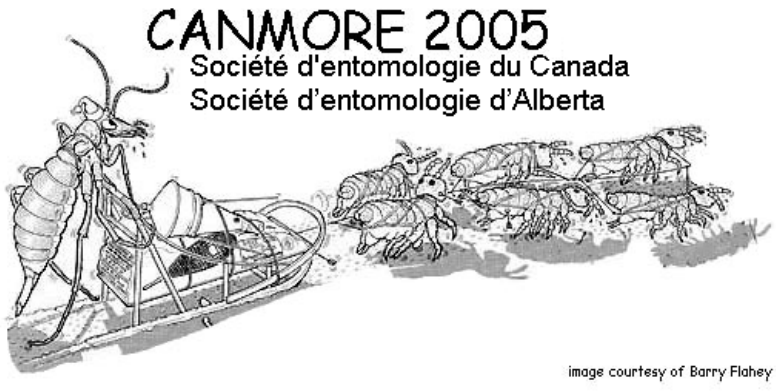
Mode de paiement
☐ Chèque : (payable à l'ordre de la RAC SEC/SEA 2004) ☐ Carte de crédit :
Nom inscrit sur la carte de crédit (lettres moulées) :_____
Carte de crédit : ☐ VISA ou ☐ Mastercard, Numéro de la carte de crédit : _____
Signature : _____ Date d'expiration : _____

Hébergement : Vous êtes encouragés à loger à l'hôtel Radisson (tarif : 89 $ pour deux personnes, si les réservations sont faites avant le 2 octobre 2005). Pour bénéficier du tarif spécial, au moment de faire votre réservation, veuillez mentionner que vous participez à la Conférence de la Société d'entomologie du Canada. Réservez le plus tôt possible pour nous permettre de planifier les diverses activités.

**Retournez le formulaire et votre paiement à :**
SEC/SEA Inscription
Greg R. Pohl
Insect I.D. Officer / Museum Curator
Northern Forestry Centre - Canadian Forest Service
5320 - 122 St., Edmonton, Alberta
Canada T6H 3S5
Téléphone : (780) 435-7211, Fax : (780) 435-7359
Courriel: gpohl@nrcan.gc.ca
SEA site web : http://www.esc-canmore.org

**Hôtel :**

Radisson Hotel and Conference Center Canmore
511 Bow Valley Trail, Canmore, Alberta T1W 1N7
Téléphone : (403) 678 3625, Fax : (403) 678 3765
Sans frais : (800) 333-3333
Courriel : rhi_cnmr@radisson.com
Site web : http://www.radisson.com/canmoreca




## Entomologie: Une célébration des petites merveilles de la vie!

Colloques
Préserver les arthropodes dans les écosystèmes forestiers nordiques
Organisateurs : John Spence et David Langor
Biologie et diversité des arachnides
Organisateurs : Heather Proctor, Derrick Kanashiro, Robb Bennett
Les arthropodes et le feu
Organisateur : Rob Roughley
Le cèphe du blé
Organisateur : Hector Carcamo
Le colloque des étudiants gradués
Organisateur : Tonya Mousseau

### Le colloque des étudiants gradués

Ce colloque a pour but premier de mieux faire connaître les étudiants gradués qui progressent à un niveau supérieur de leur carrière, et de leur permettre de présenter leurs recherches de façon plus élaborée. Pour être éligible, les étudiants doivent avoir soumis leur thèse au courant de l'année passée ou bien prévoir de la soumettre au courant de l'année suivant le colloque. Idéalement, le sujet de la présentation doit être en relation avec le thème du colloque: *Entomologie: Une célébration des petites merveilles de la vie!* Les étudiants gradués qui participent à ce colloque peuvent également concourir au Prix du Président; par contre il est nécessaire que le sujet présenté au colloque soit différent de celui de la présentation ou de l'affiche présentée pour le prix.

De l'aide est requise pour sélectionner les meilleurs conférenciers. Si vous êtes un étudiant éligible et intéressé à participer ou si vous connaissez quelqu'un qui pourrait l'être, prière de contacter Tonya Mousseau (tmoussea@ucalgary.ca). Svp, faites nous part de votre intérêt et du titre de votre présentation avant le 15 juin 2005. Tous les détails sont disponibles sur le site Internet de l'ESC dans la section " Affaires étudiantes ". http://esc-sec.org/studentf.htm et le page 33.

# INVITATION À SOUMETTRE DES COMMUNICATIONS ET DES AFFICHES

**DATE LIMITE :** Le 8 juillet 2005 (le cachet de la poste faisant foi)

**Catégories de présentation :**

**Présentation orale – Ordinaire, Prix du président***
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*Pour être admissible au Prix du président (1 par séance), vous devez satisfaire aux conditions suivantes:

- Être inscrit à un programme de deuxième ou troisième cycle ou avoir terminé un tel programme après de dernier congrès (octobre 2004)
- Être inscrit à la conférence et indiquer le désir de participer dans cette catégorie lors de la soumission de votre communication
- Être le chercheur principal et le présentateur de l'exposé ou de l'affiche

**Langue :** Les présentations doivent être en français ou en anglais.

**Présentation orale :** 12 min + 3 min de questions et discussion
Nous vous encourageons à créer des présentations PowerPoint. Afin de minimiser les chances d'incompatibilités entre la version de programme que vous utiliserez pour créer votre présentation et celle qui sera utilisée pour la présenter, nous vous conseillons de restreindre l'utilisation des animations, d'utiliser des caractères communs d'édition de Windows pour les textes et les caractères symboles pour les équations. **Ne postez pas votre présentation**, apportez-la au congrès sur un DC après avoir testé votre document à l'aide d'un autre ordinateur PC et la soumettre en arrivant. Si vous utilisez des diapositives 35 mm, veuillez les placer dans un magasin circulaire. Veuillez indiquer la méthode de présentation lors de la soumission de la communication.

**Présentation d'affiches :**
Les affiches peuvent être placées le jeudi le 3 novembre, et exposées pour toute la durée du congrès. Nous demandons aux présentateurs d'être présents pour répondre aux questions particulièrement pendant la séance prévue à cet effet le vendredi 4 novembre de 15:15 – 16:30.

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SVP donnez nous les renseignements suivantes : 1) Nom(s) de(s) auteur(s), 2) nom du présentateur, 3) adresse, 4) titre, 5) résumé, 6) catégorie, 7) langue de la présentation, et 8) méthode de présentation (PowerPoint ou diapositives 35 mm). SVP soumettez (ordinaire, prix du président) ces informations par courriel. Les résumés ne doivent pas dépasser 70 mots. Si votre résumé dépasse la limite de mots acceptée, les éditeurs se réservent le droit de le couper. Si possible, envoyez ces informations en français et en anglais. Tous les résumés seront publiés sur le site internet.

**Veuillez soumettre au :**

Felix Sperling
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**Illustrated catalogue of the Lucanidae from Africa and Madagascar.** Bartolozzi L, Werner K. 2004. Taita Publishers, Velke namestí 135/19, 500 03 Hradec Králové, Czech Republic. 191 pp. ISBN 80-902734-7-5, CDN $202.00 (hardcover).

This "catalogue" includes 16 genera and 125 species of Lucanidae that the authors consider valid and which occur in Africa (including North Africa and adjacent islands). A brief introduction includes a superficial discussion of the family and a history of some of the major contributors, with their pictures, to the systematics of African lucanids. A table entitled "Distribution" gives the numbers, not names, of the species known to occur in each of the current African countries and the percent of endemics for each country expressed in several ways. A map of Africa shows the countries as listed. This is followed by a list of the recognized African species, the Acknowledgements and Photo Credits.

The main body of the text consists of beautiful colour photographs of each species, often several males and a female, in the same order as in the list of African species. Often the holotype is pictured and in several cases, where no specimen was available, the original description was reproduced. In addition to the pictures, the original publication is listed and the type locality, size, rarity, remarks and known distribution are given for each species. Major habitats are also pictured.

This is not a book intended for the specialist, since there are no diagnoses or genitalic drawings. Some of the African species of Lucanidae in the Canadian Museum of Nature were compared with the pictures and were easily identified using the pictures and distributional data. This might not be easy for some of the small species that were not in the Museum collection. The really superb photographs will usually suffice for a fairly accurate identification, but it would have also would have helped, in some cases, to have a brief discussion of variation within the species; for example, on page 68, two males of *Nigidius negus* Bowmans are shown. Looking at the pictures, one may wonder if they represent the same species! In this and a few similar cases a brief discussion would have been useful.

In the list of species 125 species plus one subspecies are recorded, but in the "Distribution" table the percent of species for each country is based on 121 species. One must assume that four species occur north of the Sahara since the text admits that these are excluded as belonging to the "Palaearctic Region".

In summary, for anyone interested in Lucanidae or in spectacular beetles, this book is well worth having. It has useful distributional data and indicates areas of endemicity, which may be applicable to other taxa as well as the Lucanidae. It is well printed and handsomely illustrated. It is certainly more than the usual "catalogue".

Henry F. Howden
Canadian Museum of Nature, Ottawa

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**For love of insects.** Eisner, T. 2003. The Belknap Press of Harvard University Press, Cambridge, USA. xi + 448 pp. ISBN 0-674-01181-3, US $29.95 (paper).

More than appropriately titled, this book is a testament to entomologist/naturalist author Thomas Eisner's extreme passion for discovery and experimentation with arthropods, including insects and arachnids. Readers are readily drawn into Eisner's revelations of his many years of research by the book's witty and conversational tone. Eisner is an accomplished photographer; Maria, his wife and collaborator, a skilled scanning electron micrographer, and their images, together with a generous offering of easy-to-understand diagrams and graphics, complete the book's delivery of a visually and academically satisfying feast.

The book is divided into ten chapters, each showcasing different aspects of insect defense strategies. The elegant simplicity of a myriad of experimental techniques designed and used by Eisner and his colleagues are also revealed in each chapter.

Chapter 1 is devoted almost entirely to the bombardier beetle. Eisner describes experiments leading up to his discovery that the benzoquinones sprayed in pulses from the beetles' gun-turret-like rear defensive glands are hot (close to 100°C)

- a finding which he and colleagues published in 1969 in and on the front cover of a 4 July edition of *Science*.

In Chapter 2, Eisner recounts the beginnings of his work with chemist Jerry Meinwald. In one of their first projects, Eisner and Meinwald showed that, despite its minor presence (only 5%) in the spray of whip scorpions, caprylic acid has two significant functions: it serves as a wetting agent to promote spread of spray droplets on an enemy's surface and also enhances the permeability of the drops. Discoveries like these, which helped to form the knowledge base of the chemical ecology of insects, abound in this book. Eisner also describes nature's clever designs for arthropod defensive glands that allow these animals to produce and dispense some incredible toxins at no harm to themselves.

Chapter 3, titled 'Wonders from Wonderland', has several short vignettes about 'unusual' insect defense strategies. These range from the use of the 'eye image' by butterflies and other insects to forestall enemy attacks to the production of a protective surround of sausage-like fecal strands by the larvae of a small blue beetle (*Hemisphaerota cyanea*). The photographs of these 'poop-encrusted' larvae are amazing.

Chapter 4 is all about bad taste and deception. Using a pet bird as a taste-tester, Eisner demonstrates that several insects actually taste bad to predators and are therefore rejected as food - this is a great insect survival strategy. Deceitful insects described by Eisner include a firefly (*Photuris* spp.) whose female mimics the female of another firefly (*Photinus* spp.) in order to attract and subsequently eat *Photinus* males. This strategy, sometimes termed aggressive mimicry, is used by *Photuris* to acquire *Photinus'* lucibufagins (steroids) which act as noxious chemical protectants in the blood of the female mimic.

The ability of arthropods to direct the delivery of their nasty defensive compounds is well-documented in Chapter 5. Eisner's superb photographs of the elytral flanges on the abdomen of an ozaenine beetle and his description of how the flange design uses the Coandra effect to very effectively deliver a noxious discharge, are just plain cool. The Coandra effect is 'the propensity of a fluid or gas, when flowing along a curved surface, to cling to the surface and follow the curvature'.

In Chapter 6, 'Tales from the Website', Eisner focuses on the fascinating world of spiders. He deftly illustrates how well designed webs are to act as insect traps. He also discusses how wrapping of prey is likely an enabling strategy forced evolutionarily upon spiders by the widespread presence of chemical defenses in their fellow arthropods.

The complex interaction of insects and their food plants - a coevolutionary interaction - is the focus of Chapter 7. The adeptness of insects to reach out to nature for their sources of defense is the topic illuminated by Eisner in Chapter 8. His examples include the larvae of *Synchlora* spp. moths, which cloak themselves from predators using flower petals, chrysopid larvae that scoop up loads of trichomes from sycamore leaves to shield themselves, and finally, grasshopper and sawfly species that regurgitate ingested noxious plant chemicals to fend off enemies.

The final two chapters in Eisner's 'For Love of Insects' each concentrates on one key topic. Chapter 9's focus is on the somewhat exotic history of cantharidin, a compound made by beetles from the family Meloidae. This versatile compound has the ability to: 1) induce long-lasting, albeit painful, erections in human males, hence its use as an aphrodisiac in pre-Viagra days; 2) cause severe blistering on skin surfaces; 3) act as a defense deterrent by meloid beetles to localized attacks by enemy insects; and 4) serve as an attractant and necessary component in the mating ritual of at least one cantharidiphilic beetle!

Chapter 10 is dedicated to research techniques and discoveries that Eisner and several students and colleagues made during years of study of *Utetheisa* moths. This final chapter perfectly exemplifies Eisner's infectious curiosity and his tremendous ability to both design scientific quests and provide sound results.

This book would be of interest to a wide audience, but particularly to those intrigued by insect behaviour, chemical ecology, and natural history. The book should be read leisurely, likely one chapter at a sitting. Like attending a series of captivating lectures, readers partaking of Eisner's

*For love of insects* will be surprised at how much they learn without too much effort.

Rona Sturrock
Natural Resources Canada
Canadian Forest Service
Pacific Forestry Centre
Victoria, BC

## Books to be reviewed

If you are interested in reviewing one of the following books, please contact Allan Carroll, Chair of the Publications Committee.

Acorn, J. 2004. Damsel flies of Alberta: Flying neon toothpicks in the grass. University of Alberta Press, Edmonton. 156pp

Anderson, N.M., and Weir, T.A. 2004. Australian water bugs: Their biology and identification (Hemiptera-Heteroptera, Gerromorpha & Nepomorpha). Apollo Books, CSIRO Publishing, Australia. 344pp

Ben-Dova, Y., and German, V. 2003. A systematic catalogue of the Diaspididae (armoured scale insects) of the world, subfamilies Aspidiotinae, Comstockiellinae and Odonaspidinae. Intercept Limited, Scientific, Technical and Medical Publishers, Andover, Hampshire, UK. 1111pp

Gullan, P.J., and Cranston, P.S. 2005. The insects: An outline of entomology. Blackwell Publishing, Oxford, UK. 505pp

Hajek, A. 2004. Natural enemies: An introduction to biological control. Cambridge University Press, New York, NY. 378pp

Heckman, C.W. 2003. Encyclopedia of South American aquatic insects: Plecoptera. Kluwer Academic Publishers. 329pp

LaFontaine, J.D. 2004. Noctuoidea, Noctuidae (Part): Noctuinae, Agrotini, *In*: Hodges RW (*Editor*) The moths of America North of Mexico. Fascicle 27.1. The Wedge Entomological Research Foundation, Eugene, OR. 385pp

Neunzig, H.H. 2003. Pyraloidea, pyralidae (Part), phycitinae (Part), *In:* Dominick, R.B. et al. (*Editors*) The moths of America North of Mexico. Fascicle 15.5. The Wedge Entomological Research Foundation, Eugene, OR. 338pp

Russell, S.A. 2004. An obsession with butterflies. Basic Books, Perseus Books Group, NY. 238pp

van Emden, H.F., and Service, M.W. 2004. Pest and vector control. Cambridge University Press, New York, NY. 349pp

Please send correspondence concerning book reviews to the Chair of the Publications Committee:

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## Soliciting spare entomological literature

Dan Johnson recently began an insect ecology and biodiversity program at the University of Lethbridge, and he would like to augment the main library's holdings in entomology, and find keys for use in support of a research collection of insects. If you have extra copies of back issues of entomological journals, monographs, or entomology texts that you would be willing to donate to the University of Lethbridge, please contact Dan at dan.johnson@uleth.ca, or (403) 329-2040.

## Survey Report

The Scientific Committee met in Charlottetown on 18-19 October 2004. A more detailed account of the meeting appears in the *Newsletter of the Biological Survey of Canada (Terrestrial Arthropods)* 24(1), 2005, which is also on the BSC website at http://www.biology.ualberta.ca/bsc/english/newsletters.htm.

### Scientific projects

**1. Grasslands**

Five chapters for the first grasslands volume, on ecology and interactions in grasslands habitats, have been submitted and are ready for external review. Other chapters are in the final stages. A successful grasslands focus trip was held at Aweme, MB in June 2004. The 2005 trip will be joint effort of the grasslands and forest arthropod projects, at Waterton Lakes National Park.

**2. Family keys**

The Canadian key to exopterygotes should be completed this year. Discussions about the format and audience for the Canadian key, and the endopterygote key, led into the following item.

**3. Arthropods of Canada - a modular e-journal of the BSC**

Plans are underway for a project to make the fauna more identifiable by integrating various regional efforts into a high profile, centrally organized but modular Biological Survey project to facilitate the identification of Canadian arthropods. Contributions of keys for specific regional groups would be placed as reviewed contributions in a national forum endorsed by the BSC.

**4. Terrestrial arthropods of Newfoundland and Labrador**

Databases and keys continue to be developed for this project; work on the beetles is relatively advanced. A database of entomological literature dealing with NF/LB as well as a database of NF/LB taxa and collection localities continues to be developed. Publication options are under consideration.

**5. Forest arthropods**

The first issue of the *Arthropods of Canadian Forests Newsletter* will be published in February 2005 in electronic format. A symposium tentatively entitled *Arthropods as Ecological Indicators in Forests* will take place at the 2005 ESC-ESAlberta meeting. A project on the Cerambycidae of Canada and Alaska was recently initiated, including taxonomic and database work.

**6. Insects of the arctic**

In 2004, arctic collections had been made in western Alaska and a Malaise trap was run during the summer in a river 30 km outside Rankin Inlet. Travels to the Rankin area and to Siberia are likely in 2005 in the context of this project.

**7. Seasonal adaptations**

Hugh Danks will spend several months in Japan as a visiting professor at the Research Institute for Bioresources of Okayama University where research on seasonal adaptations takes place.

### Other scientific priorities

**1. Invasions and reductions**

After extensive consultations with a range of interested parties the Committee concluded that an arthropod symposium, focused on key science issues rather than policy, should be developed. The focus of the symposium will be considered further so that detailed planning can begin. Work on the coccinellid project continues with databasing of collection records and other activities.

**2. Survey web site**

New information about the forest arthropods project and the Biological Survey of Canada Postgraduate Scholarship has been added. A new web site counter was installed, providing some interesting information about visitors and page visits.


S. Goods

Jeff Cumming and Donna Giberson at a meeting of the Scientific Committee for the Biological Survey of Canada.

The site is averaging more than 100 visitors per day.

**3. Arthropods and fire**

A symposium on fire and arthropods will be held at the ESC/ESA 2005 joint annual meeting in Canmore.

**4. Arthropods of the Gulf of St. Lawrence Islands**

This recently launched project has begun with some collecting in a few places and consideration of protocols for trapping methods.

**5. Biodiversity sampling brief**

The Committee agreed that an update of the 1994 BSC brief on biodiversity sampling would be useful. However, this material might best be included in an update of the first volume of the Handbook series, and this possibility will first be pursued by discussion with the relevant people.

**6. Databasing**

The Committee considered various updates and information, and established a subcommittee to develop ideas for a simple list of geographic co-ordinates for common and/or historic collecting localities.

**7. Monitoring of continuing priorities**

Some other Survey interests were reviewed, including arthropod fauna of soils, arthropods of aquatic habitats, arthropod ectoparasites of vertebrates, agroecosystems, projects on spiders and a developing project on the Lepidoptera of Quebec.

**8. Other priorities**

The Committee also considered actions and information about the dissemination of Survey briefs, endangered species, the faunal analysis project and other topics.

## Liaison and exchange of information

**1. Canadian Museum of Nature**

Roger Baird, Director, Collection Services, reported that full-scale construction to renovate the Victoria Memorial Museum Building has commenced and will be finished in 2009.

Roger Baird had participated in the inaugural meeting of the Consortium of the Barcode of Life (CBOL). The CBOL is seeking to advance the completion of DNA barcoding for millions of species, by pursuing DNA barcoding activities in collaboration with major related initiatives such as the Global Biodiversity Information Facility, GenBank, and the Census of Marine Life. Pilot

projects underway with the Alliance of Natural History Museums of Canada include communications strategies and an examination of the degree to which the alliance is aware of the collections and taxonomic expertise distributed within (and even absent from) its membership.

**2. Agriculture and Agri-Food Canada**

Jean-François Landry reported that there have been few major developments at the Ottawa centre in last 6 months, although the department remains under reorganization. The Identification Service is being rejuvenated and is undergoing a transition from a paper-based system to a more efficient computer-based system. Jean-François Landry provided an update about the revised Handbooks series including publications planned in the near future. Some earlier handbooks that are no longer in print will also be reprinted. An update of the volume on collecting techniques is being considered.

**3. Entomological Society of Canada**

Bob Lamb, President of the ESC, emphasized that the Society recognizes the importance of the Biological Survey of Canada, and he congratulated the Survey on its first 25 years or so of activity and in particular, the many important influences and contributions the BSC has had on the entomological community in guiding research. The ESC recognizes the importance of the BSC's association with the Canadian Museum of Nature in the form of the Secretariat and of a strong research presence in the Secretariat.

**4. Regulation of classical biocontrol agents**

Peter Mason, Agriculture and Agri-Food Canada and Canadian Biocontrol Review Committee explained developments about the regulation of biocontrol agents for which there were no regulations before 1990. He reported on the steady implementation of the process now being put in place through the initiative of the biocontrol community. The Committee discussed some of these issues at length with Peter Mason.

## Other items

**1. BSC award**

The BSC award is now fully funded for the foreseeable future. However, further donations will be solicited to allow for inflation and to allow the award to be given more frequently. Also, efforts will be made before the next award to advertise it more widely and thus ensure that there are numerous suitable applications.

**2. Regional developments**

Information of potential interest from different parts of the country was reported, including current projects and changes in personnel. Among many other news items, in British Columbia the BC Wildlife Act has been modified to include more than birds and mammals but does not specifically list what else is covered. The Nature Trust has purchased antelope brush property with funds received as financial compensation for loss of habitat. Recent climate change scenarios for British Columbia show that grasslands will be much more extensive in the future. There is much concern in B.C. currently about the mountain pine beetle, which is expanding rapidly, and attacking younger stands. In the Prairies, a major project is looking at the interface between Agriculture and Forestry across the country. In Quebec, there are a number of forest biodiversity projects. The Université de Montréal has advertised for a faculty position in invertebrate systematics and biodiversity for the third time. In the Maritimes a website has been established to assist lay people and researchers interested in beetles in Atlantic Canada, Beetles of Atlantic Canada website located at: http://chebucto.ca/Environment/NHR/atlantic_coleoptera.html. For the Arctic, the BBC is interested in filming things from habitats around the world, including certain arctic species.

**3. Other matters**

The Survey also considered liaison with other organizations, membership of the Scientific Committee, commentary to the Biodiversity Convention Office, and the annual report to the Canadian Museum of Nature.

## Fred Urquhart
## 1912-2002

Born in Toronto, Fred Urquhart began his career at the university as a student, graduating at the top of his class in 1935. He completed his MA in 1937 and PhD in 1940. Following graduation, he joined the meteorological division of the Department of Transport and taught meteorology to students in the RCAF until the end of the war. In 1945, he became the assistant director of zoology at the Royal Ontario Museum, and in 1948, was cross-appointed as an assistant professor in zoology. The following year he became director of zoology and palaeontology at the ROM, and in 1961, he assumed full-time duties as an associate professor of zoology, becoming a full professor in 1963. Among Fred Urquhart's students was noted Canadian author Farley Mowat.

In 1966, Urquhart became one of three initiators and organizers of the zoology teaching and research program at Scarborough College, retiring in 1977. Urquhart was one of the few people at Scarborough to produce a highly successful television lecture series.

Although his research interests were broad – with four books, a monograph and 62 papers in refereed journals and countless scientific reports and popular articles relating to a wide range of biological subject matter to his credit – Urquhart's first love was butterflies. He longed to answer the question: where do monarch butterflies go in the winter? Urquhart's first attempt in 1937 to follow the monarch by marking individual butterflies met with limited success. But by 1940 he'd developed a method of tagging that worked and after the war he and his wife, Norah, whom he married in 1945, tagged thousands of monarchs, affixing a tiny label to the wing, reading, "Send to Zoology University Toronto Canada." In 1952 he issued the first appeal for volunteers to assist with the tagging and over the next 20-odd years thousands of people had participated. In January 1975, these efforts paid off. In 1976, the Urquharts were able to see the spectacular sight for themselves.

Now over a dozen sites on five mountains have been identified as winter habitat for monarchs and these are protected as ecological preserves by the Mexican government, largely through Urquhart's early influence and advocacy. In Canada, Urquhart was an advocate for a reduction in the use of pesticides and herbicides, and for the planting of milkweed, the sole food plant of monarch butterfly larva.

"Large numbers of people were encouraged to be citizen-scientists and a lot of people got involved internationally. It had quite an electrifying effect on butterfly migration studies," said University of Toronto, Zoology Professor, David Gibo. Many volunteer "Research Associates" remained with the program, tagging monarchs for 10, 20, 30 years and more. At least one individual who began tagging with the Urquharts in the mid 1950's is still tagging monarchs, and one of the first 12 individuals, selected from those who responded to the appeal for help in the 1952 article in Natural History, still lives in Michigan and recently turned 92 years of age!

While the tagging project was official ended in 1992, The Urquharts continued to support limited monarch tagging in remote areas from where no recoveries had been made. One such monarch from Grand Manan Island, Nova Scotia was recovered in Mexico three years ago.

It is noteworthy that until later years when the National Geographic Society and the National Research Council provided grants for their insect migration research, this program operated on very

limited funding provided by the Urquharts and their Research Associates.

Fred Urquhart was involved in the creation of the Federation of Ontario Naturalists. Until recently, a framed collection of photos from the 1941 "Limberlost Camp" hung in the reception area of the Federation of Ontario Naturalists Headquarters in Toronto. One of these photos shows "Fred Urqhart" stirring a huge caldron over an open fire. The Urquharts were later presented with the W.W.H. Gunn Conservation Award – the Federation's highest honour.

On 6 May 1998, Fred and Norah Urquhart were jointly appointed to the Order of Canada: as Members of the Order of Canada. "They are credited with one of the greatest natural history discoveries of our time. After forty years of determination in mobilizing thousands of professionals and amateurs in a massive volunteer tagging program, they located the over-wintering sites of the monarch butterfly in a remote area of Mexico. Thanks to their advocacy of protecting the butterflies' habitat, ecological preserves have been established throughout North America, including the first municipal butterfly garden, named in their honour, in Dundas, Ontario. Their life-long, dedicated research on insect migration has raised environmental awareness among everyone from scientists to school children. They have generously shared their knowledge on the important role insects play in a healthy ecosystem and our part in ensuring the survival of the planet by caring for a fragile species."

Excerpted from the University of Toronto Bulletin (7) of Monday, 9 June, 2003 and other sources

Donald A. Davis,
Research Associate (1968 – 1992)
Urquhart's Insect Migration Association

## Recently deceased
### Compiled by Ed Becker

**Chet Neilson**, husband of Ruby, 1178 Beach Dr., Victoria BC, V8S 2M9, (250) 592-3754, died on 26 July 2004 at age 88. Chet served as an officer in the Canadian Army's Rocky Mountain Rangers, participating in the assault on Kiska Alaska and later, as a member of the Oxford Rifles Battalion of Victoria, he participated in the liberation of Holland. Chet worked for many years with Agriculture Canada conducting research in southern Saskatoon, Alberta, Peace River and central interior of B. C. Then he transferred to the Provincial Agriculture working in Vernon, as well as teaching at U.B.C. He was an avid outdoors man, faithful sports fisherman and a dedicated golfer.

**Marion Ives**, wife of Bill Ives, 11459 - 42 Avenue NW, Edmonton AB, T6J 0W2, (750) 435-6809, died on 8 August 2004. Marion suffered a stroke a year ago that left her unable to swallow.

**Leo Dionne**, Fredericton NB, died on 2 September 2004 after a long illness. He worked in Jean Adam's laboratory from 1944 to 1967. He was a geneticist, but had an invaluable role in entomology particularly insects and disease resistance in potatoes, according to Ellen MacGillivray, and he knew his botany well. His wife Margaret predeceased him in 1978.

**Gordon H. Hamilton**, Winnipeg, died on 5 October 2004 at age 62. Gordon worked as a technician at the Belleville Laboratory in 1962 and transferred to the Cereal Research Centre, Winnipeg, in 1972. He never married and retired in 1997. He suffered from cancer. A funeral service was held in Winnipeg and another one the next day in Belleville.

**Dave Pengelly**, husband of Fran Pengelly, P. O. Box 359, Erickson MB, R0J 0P0, (204) 636-2619, fpengelly@erickson-mb.com, died on 1 November 2004 of cancer.

## Lorne Paul
## 1904-2004

Lorne Paul, Canada's second oldest entomologist, died on 16 December 2004, 7 weeks after his 100th birthday. He was predeceased by his wife of 66 years, Mildred, but is survived by four daughters, 11 grandchildren and 10 great-grandchildren.

Lorne was born 27 October 1904 in Prince Albert, Northwest Territories. After teaching for two years in one-room country schools, he came to Saskatoon in 1927 to enroll at the University of Saskatchewan. While an undergraduate in the premedical program, Lorne worked for two summers at the Dominion Entomological Laboratory, Saskatoon. Seemingly, this triggered a latent interest in insects and, after receiving his Bachelor's degree in Biology in 1930, he joined the Laboratory staff. Lorne was among the earliest graduate students in the Department of Biology, completing his MSc degree in 1932 with a thesis *The external morphology of noctuid pupae of the Canadian prairies; with notes on occurrence and habitat (a preliminary study).* His faculty advisor was Les Saunders, though as Lorne acknowledged in his thesis, Kenneth King, Entomologist-in-Charge of the Dominion Entomological Laboratory in Saskatoon, was the primary driving force behind the selection of the thesis topic and a continuous source of inspiration and encouragement.

Though initially involved in studies of all field insect pests, Lorne was soon placed in charge of the Laboratory's grasshopper project. He was responsible for the annual grasshopper surveys, the forecasting of outbreaks, extension work concerning grasshopper control and experimentation on the formulation of arsenic baits. He also completed one of the first assessments of the economic value of grasshopper control. In 1940, using data gathered from these studies, Lorne received a PhD from Iowa State University, for the thesis *Appraisal of grasshopper control methods in Saskatchewan.*

In 1944, Lorne resigned from the Dominion Laboratory to become a professor in the Extension Department at the University of Saskatchewan, a position he held for 28 years until his retirement. In this position he traveled extensively across Saskatchewan conducting short courses for farmers, organizing Farm Boy Camps and carrying out other extension functions. During this period he was invited by the British Council and Nuffield Foundation to study extension in the United Kingdom. He also wrote numerous articles, papers and presentations on entomology and extension, some published in as many as five languages (one in seven)! The main written contribution from this phase of his career was *Extension at the University of Saskatchewan, Saskatoon, 1910-1970: A History,* published in 1994.

Lorne had a strong community involvement, including presidency of the John Howard Society, elder at Westminster Church, co-founder of the Couples Club (with Mildred), donor of Lorne C. Paul Bursary at the University of Saskatchewan, active participant in Golden K Kiwanis Club, and originator of the Saskatoon Personal Care Home directory. He also wrote numerous opinion pieces and letters to the editor of the *Saskatoon Star Phoenix.*

His busy professional and community life notwithstanding, Lorne had a special passion for his family. He reveled in family gatherings, particularly those held at the cottage he built at Wakaw Lake. After retirement, he and Mildred traveled extensively visiting family members in various parts of the world. In order to fully enjoy their many trips to Mexico (where one daughter resides), they learned to speak Spanish and studied Mexican history and culture. Their deep and long-held interest in world events added richness to their travels. He will be remembered as a caring, generous, witty and wise gentleman.

Cedric Gillott
Saskatoon

## Sridhar Polavarapu
## 1962 - 2004

On 7 May 2004, the scientific community lost an energetic and upcoming entomologist. On that fateful Friday at 9.45 p.m. Sridhar Polavarapu passed away surrounded by his family, parents, in-laws and friends. Sridhar, as he was affectionately called by people who knew him, had been diagnosed with pancreatic cancer in the fall of 2003. He fought a losing battle against the dreaded disease which quickly consumed him in a matter of months. At the time of his death he was only 42 and at the prime of his career. He is survived by his wife Madhavi, whom he was married for 13 years, two children- daughter Sameera (seven), son Vinay (three), two younger sisters and parents.

Sridhar was born on 30 April 1962 in Angaluru, AP, India. His father, Sivaprasad Polavarapu was a railways employee and his mother Krishnakumari was a school teacher. He was the eldest of the three children. After his early education in Gundakal, Sridhar joined Marathwada Agricultural University, Parbhani, India where he obtained a BSc, degree in 1981. Subsequently, he graduated from the University of Agricultural Sciences, Bangalore, India with an MSc, in 1984. Even in those days Sridhar was very much interested in insect pest management; and soon after graduation he worked for a year at the International Crop Research Institute for Semi-Arid Tropics (ICRISAT) and then for two years at the Indian Council of Agricultural Research.

Sridhar came to Canada in 1987 for higher studies. He joined the insect pheromone laboratory of Bill Seabrook at University of New Brunswick, Fredericton as a graduate student and received his PhD, degree in 1994. With his thesis research on blueberry pest management he easily landed a faculty position at the Department of Entomology, Rutgers University in 1994 where he served as the Associate Director and extension specialist at the Phillip E. Marucci Blueberry and Cranberry Research and Extension Center, Chatsworth, NJ.

Although his career was relatively short, just about 10 years, at Rutgers, he managed to accomplish more at the university than many would do during a life-long career. He focused his research on the development of environmentally friendly management strategies with minimum use of broad spectrum insecticides. He was able to achieve his objectives by intelligent use of various techniques including mating disruption, biodegradable target specific insecticides such as Bts, insect growth regulators, egg parasitoids, entomopathogenic nematodes etc. In his research he collaborated with many top entomologists in US and Canada and published numerous scientific and extension papers on blueberry and cranberry pest management.

Through his competitiveness and scientific excellence Sridhar secured large research grants and as recently as 2003 he obtained a million-dollar grant for development and implementation of reduced risk pest management strategies for blueberries. Even when he was quite ill he continued to conduct research from his house through constant discussions with his post-doctoral fellows and technicians. After his death, he has left behind substantial endowment that he has asked to be used for entomological research. With funds secured the research he started is being continued by his post-doctoral fellows.

Sridhar worked closely with blueberry and cranberry growers, identifying their problems and coming up with solutions. He worked with the farmers in the field to ensure that the new techniques he developed are used effectively. He secured numerous labels for pesticides needed for the control of insect pests. He always kept in touch with growers and gave them guidelines and

advice through his letters in *Blueberry Bulletin, Cranberry Newsletter* etc… He routinely lectured at Extension growers meetings.

Sridhar's dedication to his research, and its practical application was such that even when he was sick, he managed to conduct a highly successful, first Advanced Blueberry School in east in March 2004. For all his accomplishments and service to the blueberry and cranberry growers of NJ he was presented with the prestigious Abraham Weisblatt Award on 22 April 2004. This award, one of the highest given annually by Cook College recognizes an individual who demonstrates "across the board" excellence in teaching, research and extension. Post-humously Sridhar's service and achievements have been recognized by several organizations. New Jersey Deparment of Agriculture bestowed him with a distinguished service award in their annual meeting in Atlantic City. The Association of Indian Entomologists in North America dedicated their November 2004 conference to Sridhar. The blueberry and cranberry growers of New Jersey are planning award presentations in their regional meetings. Sridhar did reach out to many people in agricultural and entomological communities and had an impact on them at a personal level that he never realized.

Personally, I have known Sridhar since 1987. He was a man of integrity. He was passionate about his research and eager to talk about it. He was unselfish, unpretentious and cared for everyone around him. He always greeted you with a big smile and hello. He was fond of the game cricket and had won some trophies while he was in college in India. In spite of his busy professional activities, he found time to spend with his children. He frequently played "horsie" with his son Vinay. He was very fond of his daughter Sameera with whom he loved to go out to collect fireflies. Sridhar was an incredible husband, loving father, son, brother and friend to many. He will be sorely missed by everyone who was fortunate enough of knowing him.

P. Sivasubramanian
Fredericton, New Brunswick

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**The 9th International Conference of the Orthopterists' Society**
Canmore, Alberta, Canada, 14-19 August 2005
Contact: Dan Johnson, dan.johnson@uleth.ca
http://www.orthoptera2005.org

The Orthopterists' Society, an organization devoted to the study of orthopteroid insects will hold the next world meeting in Canmore, Alberta, Canada on14-19 August 2005. World meetings are held approximately every four years. This world meeting concerns all aspects of study of grasshoppers, locusts, crickets and their allies. Topics will include subjects of international, national or regional interest. Registration and attendance is open to members and non-members of the Orthopterists' Society.

Plenary lecture: Professor Stephen J. Simpson (Department of Zoology and Oxford University Museum of Natural History, UK), Phase change in locusts: From neurones to populations.
Plenary Symposia:
1. Is Research a Good Driver for Locust and Grasshopper Control?
   Symposium Chairs: A. Latchininsky and M. Lecoq
2. Advancements and Controversies in Phase Polyphenism Research
   Symposium Chairs: G. Sword and S. Simpson
3. Sexual selection and Reproductive Behaviour of Orthoptera
   Symposium Chairs: D. Gwynne and W. Cade
4. Hybrid Zones: Evolutionary Dead-end or Cradle of Innovation?
   Symposium Chair: D. Howard

**International Symposium on Biological Control of Arthropods**
Davos, Switzerland, 12-16 September 2005
http://www.cabi-bioscience.ch/ISBCA-DAVOS-2005/

**Biocontrol Network 2nd Summer School**
Magog, Quebec, Canada, 12-13 May 2005
Contact: Jacques Brodeur, jacques.brodeur@plg.ulaval.ca
http://www.biocontrol.ca

**Joint Annual Meeting of the Entomological Societies of Alberta and Canada**
Canmore, Alberta, 2-5 November 2005
Contact: Dave Langor & Felix Sperling, DLangor@NRCan.gc.ca, felix.sperling@ualberta.ca
http://www.esc-canmore.org

**52nd Annual Meeting of the Entomological Society of America**
Fort Lauderdale, USA, 6-9 November 2005
http://www.entsoc.org/annual_meeting/2005/index.html

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### IOBC Neartic Regional Section: Biocontrol network

Magog, Quebec, Canada, 8-11 May 2005
Contact: Jacques Brodeur, jacques.brodeur@plg.ulaval.ca
http://www.biocontrol.ca

**Trophic and guild interactions in biological control**
The symposium will provide critical review of current knowledge and propose fresh perspectives on trophic and guild interactions in the specific context of biological control.
Convenors: Jacques Brodeur & Guy Boivin
The following topics will be covered:
Community organization, H.C.J. Godfray (Imperial College, University of London, UK)
Intraguild interactions and biological control, J.A. Rosenheim (University of California, Davis, USA)
Species interactions: Competition, N.J. Mills (University of California, Berkeley, USA)
Species interactions: Predation, A. Janssen (University of Amsterdam, The Netherlands)
Species interactions: Parasitism, G. Boivin; AFFC, and J. Brodeur (Université Laval, Canada)
Species interactions: Disease, M.B. Thomas (Imperial College London, Wye Campus, UK)
Species interactions: Mutualism, M. Eubanks (Auburn University, USA)
Omnivory, B.D. Roitberg (Simon Fraser University) and D.R. Gillespie (AFFC, Agassiz, Canada)
Approaches for measuring guild interactions, R. Denno (University of Maryland, USA)

**Biological control to support biodiversity**
A symposium to celebrate the 50th anniversary of IOBC Global, Convenor: Joop van Lenteren
The following topics will be covered:
Historical development of IOBC, E. Boller (Swiss Federal Research Station of Horticulture)
Pure research point of view, M. Hunter (University of Arizona, USA)
Biocontrol Network of Canada, J.L. Schwartz (Université de Montréal, Canada)
Biocontrol research and application, J.C. van Lenteren (Entomology,Wageningen, The Netherlands and President IOBC-Global)

## A Strategic Review of ESC for 2005

At the 2004 Annual General Meeting, the Board agreed that the time is right to review aspects of ESC business and services. As President I was charged with planning and executing the review. My objective is to develop concrete, practical and succinct recommendations that can be formulated as motions at the 2005 Board and AGM, to change our bylaws, standing rules, or committee guidelines in ways that will set ESC on the correct course for the next few years.

The last such review was completed in 1996, almost a decade ago. It addressed primarily organizational issues: committee structures, updating guidelines and assessing how ESC relates with affiliated societies. The recommendations of that review were largely implemented, and they have helped give us the society we have today. We don't need to revisit most of the issues that were addressed in 1996.

What should we review? ESC is a successful, financially stable and national scientific society. Our primary activities are running smoothly. Recent annual meetings have had excellent participation both by regular members, and importantly by graduate students. The meetings have also been financially profitable, as well as scientifically stimulating. *The Canadian Entomologist* continues to be a widely read, well respected journal of general entomology. Many of our members voluntarily participate in the day-to-day running of the society, in spite of the many commitments we all have these days. Of course improvements can always be made. As pointed out in the last issue of the *Bulletin*, membership has shown a slow but real decline for more than a decade - a worry. We have enjoyed budget surpluses for a number of years, but likely will come close to breaking even, or showing a small deficit in the near future. We cannot afford to be complacent about the health of our Society.

One of the greatest opportunities and stresses for a Society like ours is modern information technology. Our primary goal is scientific communication, and that communication is changing rapidly. Communication by traditional print media is expensive; electronic communication can offer economical alternatives. On the other hand, how do we recoup even the reduced costs of electronic communication if our publications are freely available on the web. Will modern information technology accelerate the decline in membership and journal subscriptions, or perhaps turn the trend around? Which aspects of information technology are simply trendy, and which aspects will actually improve entomological communication? How do we assure proper archival security? These issues are the focus of our review, but we can not consider information technology separately from the consequences of this technology on our membership and finances.

The Strategic Review will be conducted as an executive committee, with the President as Chair, with four sub-committees addressing particular topics:

- Implications of information technology (Dan Quiring, First Vice-President) - to identify ways that we can exploit information technology more effectively to further the objectives of ESC, reduce costs of communication, and forestall revenue losses that may occur as a result of the changing technology.
- Membership (Charles Vincent, Past-President) - to assess membership trends, identify ways of enhancing membership, and enhancing membership services.
- Finances (Peggy Dixon, Second Vice-President) - to determine whether the main activities of ESC are financially sustainable, and what room if any we have for new initiatives, or to increase revenues or reduce costs.
- Progress as a result of 1996 review (Bob Lamb) - to assess what progress has been made as a result of the earlier review, and feed insights of that review to the current review process.

We hope to have a draft review ready for discussion at the mid-term executive meeting at the end of April, and recommendations ready for discussion at the Board and Annual General Meet-

ings to be held at the Annual Joint Meeting in Canmore, Alberta, in early November. The Committee invites your participation. I hope you will respond positively if you are asked to serve on one of the sub-committees. I also hope that all members and friends of ESC will take time to consider these issues and send the Committee your thoughts on how we might improve the Entomological Society of Canada.

Bob Lamb,
President, Entomological Society of Canada

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

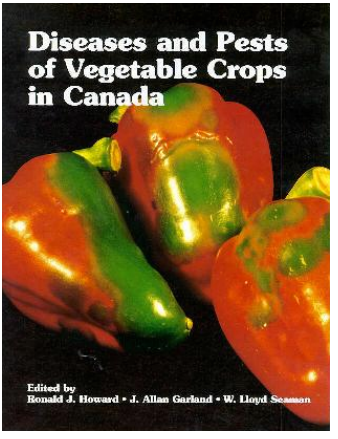
Les nominations pour deuxième vice-président et conseiller doivent être signées par trois membres de la Société, et envoyées au Secretaire de la Société d'entomologie du Canada, Rick West (voir page 62 pour coordonnées détaillées), avant le **30 avril 2005.**

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

Nominations for the Second Vice President and Director-at-Large must be signed by three members of the society in good standing, and received by the Secretary of the Entomological Society of Canada, Rick West (see page 62 for contact details), by **30 April 2005**.

## For sale from ESC: *Diseases and Pests of Vegetable Crops in Canada*

Editors: Ronald J. Howard, J. Allan Garland and W. Lloyd Seaman, published by The Canadian Phytopathological Society and the Entomological Society of Canada, July 1994, 8.5 x 11" soft cover; 554 pages; 1030 colour photographs.




A practical guide providing information on infectious and non-infectious diseases, insect, mite, nematode, mollusc and weed pests of vegetable crops including: asparagus, bean, beet, carrot, celery, corn, crucifers, cucurbits, eggplant, garlic, ginseng, greenhouse vegetables, herbs and spices, lettuce, mushrooms, onion, pea, potato, tomato and others.

This book provides information on symptoms/damage, disease cycle and epidemiology/life cycle and management of important diseases and pests of vegetable crops. It is indispensable to researchers, teachers, extension agents, producers and students.

**Regular price: $ 65.00 Cdn.**, 10% discount for members of the CPS and ESC, 10% discount for bulk purchase (five or more copies).

To order, contact Alexandra Devine, entsoc.can@bellnet.ca, (613) 725-2619 or download order form at http://esc-sec.org/diseases.htm

## Une révision stratégique de la SEC pour l'année 2005

Lors de la réunion annuelle de 2004, le Comité d'administration s'est entendu sur le fait qu'il était temps de revoir certains aspects des affaires et des services de la SEC. En tant que Président, j'ai été chargé de planifier et de réaliser cette révision. Mon objectif est de développer des recommandations concrètes, pratiques et succinctes qui pourront être formulées en tant que motions au Comité d'administration et à la réunion annuelle de 2005, afin de modifier les règlements intérieurs, les règles permanentes, ou les lignes directrices des comités de façon à mettre la SEC sur une bonne voie pour les prochaines années.

La dernière révision de ce genre a été complétée en 1996, soit il y a près d'une décennie. Les principaux enjeux étaient organisationnels : structure des comités, mise à jour des lignes directrices, et évaluation de la façon dont la SEC interagit avec les sociétés affiliées. Les recommandations de cette révision ont été largement exécutées et ont aidé à obtenir la société que nous avons aujourd'hui. Il n'est pas nécessaire de revoir toutes les questions posées en 1996.

Que devons-nous revoir? La SEC est une société nationale réussie et stable financièrement. Nos principales activités se déroulent bien. Les dernières réunions annuelles ont obtenu un excellent taux de participation, par les membres réguliers, mais également d'une façon importante par les étudiants gradués. Les réunions ont aussi été financièrement profitables, ainsi que scientifiquement stimulantes. *The Canadian Entomologist* continue d'être une revue d'entomologie générale lu par un grand public et bien respectée. Un grand nombre de nos membres participent bénévolement dans le fonctionnement quotidien de la société et dans les nombreux comités que nous avons présentement. Évidemment, des améliorations peuvent toujours être apportées. Tel que souligné dans le dernier numéro du *Bulletin*, les adhésions ont montré un lent, mais réel déclin depuis plus d'une décennie - un souci. Nous avons profité de surplus budgétaires pendant de nombreuses années, mais nous approchons apparemment d'un équilibre, voir même d'un léger déficit dans un futur rapproché. Il ne faut pas se satisfaire de l'état de santé actuel de notre Société.

Une des plus grandes opportunités, et source d'inquiétudes, pour une Société telle que la nôtre, est la technologie moderne de l'information. Notre but premier est la communication scientifique, et les moyens de communication changent rapidement. La communication par le biais du média d'impression traditionnel est coûteuse; la communication électronique peut offrir des alternatives économiques. D'un autre côté, comment pouvons nous financer, malgré les coûts réduits de la communication électronique, si nos publications sont offertes gratuitement sur internet. Est-ce que la technologie moderne de l'information accélèrera le déclin des adhésions et des inscriptions au journal, ou au contraire inversera-t-elle la tendance? Quels aspects de la technologie de l'information sont simplement du type 'populaire' et quels aspects vont véritablement améliorer la communication entomologique? Comment assurer une sécurité appropriée de nos documents? Ces questions forment l'essentiel de notre révision, et nous ne pouvons pas considérer la technologie de l'information séparément car elle a aussi des conséquences sur nos adhésions et nos finances.

La révision stratégique sera conduite comme un comité exécutif, avec le Président en tant que président de comité, avec quatre sous comités traitant de sujets particuliers :

- Impacts de la technologie de l'information (Dan Quiring, premier Vice-Président) - pour identifier les façons par lesquelles nous pouvons exploiter les technologies de l'information de façon plus efficace afin de poursuivre les objectifs de la SEC, de réduire les coûts de la communication, et de prévenir les pertes de revenus pouvant survenir suite au changement de technologie.

- Adhésions (Charles Vincent, Président sortant) - pour évaluer les tendances dans les adhésions, identifier les façons d'améliorer les adhésions et d'améliorer les services aux membres.

- Finances (Peggy Dixon, deuxième Vice-Présidente) - pour déterminer si les activités principales de la SEC sont viables financièrement, et quelle possibilités nous avons, si possible, pour

des nouvelles initiatives, ou pour augmenter les revenus ou réduire les coûts.

• Les progrès résultants de la révision de 1996 (Bob Lamb) - pour évaluer les progrès ayant été faits suite à la révision précédente, et se servir des acquis de cette première révision pour améliorer le processus actuel.

Nous espérons avoir un brouillon de la révision prêt pour discussion à la réunion exécutive de mi-session à la fin avril, et les recommandations prêtes pour discussion à l'assemblée générale annuelle qui se tiendra lors de la réunion conjointe annuelle à Canmore, en Alberta, au début novembre. Le Comité vous invite à y participer. J'espère que vous répondrez positivement si vous êtes appelés à servir dans un des sous-comités. J'espère également que tous les membres et amis de la SEC prendront le temps de considérer ces questions et d'envoyer au Comité leurs opinions et avis sur la façon d'améliorer la Société d'Entomologie du Canada.

Bob Lamb,
Président de la Société d'Entomologie du Canada

Steve Marshal

Eastern Lubber Grasshopper, *Romalea guttata*, found in grocery store.

## Executive council

The mid-term meeting of the Executive Council will be held at the Entomological Society of Canada office (393 Winston Ave., Ottawa) 23 April 2005. Matters for consideration at the above meeting should be sent to the Secretary (see page 62 for contact details).

## Couseil exécutif

La réunion de mi-session du Conseil exécutif aura lieu au Siège social de la Société d'entomologie du Canada le 23 avril, 2005. Veuillez faire part au secrétaire de tout sujet pouvant faire l'objet de discussion à cette réunion (voir page 62 pour coordonnées détaillées).

## 55th Annual General Meeting and Governing Board Meeting

The Annual General Meeting of the Entomological Society of Canada will be held at Radisson Hotel, Canmore Alberta on Friday, 4 November 2005, 17:15-18:30. The Governing Board Meeting will be held at the same location on Wednesday, 2 November 2005 from 8:30 to 16:30. Matters for consideration at either of the above meetings should be sent to Rick West, Secretary of the ESC.

## 55e L'assemblée générale annuelle et la réunion du comité directeur

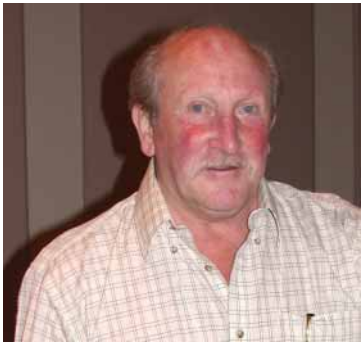
L'Assemblée générale annuelle de la Société d'entomologie du Canada aura lieu au Radisson Hotel, Canmore Alberta, le vendredi, 4 novembre 2005 à 17:15-18:30. La Réunion du comité directeur de la SEC aura lieu au même endroit le mercredi, 2 novembre 2005 de 8:30 à 16:30. Veuillez faire part au secrétaire, Rick West, de tout sujet pouvant faire l'objet de discussion à ces réunions.

## Message from the Editor-in-Chief

Now that you have recovered from the pleasant surprise (or is that bewilderment!) of the brand new cover design and format of *The Canadian Entomologist* in 2005, let me explain some of the rationale behind this change. For some time now, many of our members have been inclined to move towards "modernizing" our journal in order to meet the changing needs and desires of our readers and authors. However, this is being made not just for the sake of change. The change in the cover design, for instance, better reflects the diversity of research in entomology and related disciplines in Canada today. It is also more colorful and interesting! Changes to the insides of the covers have also been made to rationalize the history and mandate of both the Entomological Society of Canada (inside back cover) and *The Canadian Entomologist* (inside front cover). The changes in the format of the articles in the journal have been adopted to: (1) facilitate the transfer of information through the ease of reading and presentation of tables and figures, and (2) help harmonize our move towards the NRC of Canada family of scientific journals. These changes are reflected in the new *Instructions to Authors* which appear in the first issue of *The Canadian Entomologist Volume* 137, Number 1, Jan./Feb. 2005.

The mandate of our journal remains very similar to that developed by the former Editor-in-Chief, Jean Turgeon i.e., manuscripts from all aspects of entomology will be considered, both in English and French. They should report the results of original observations or research and should not have been previously published elsewhere. Reviews, Notes and Forum articles are also encouraged. Non-analytical items such as lists of specimens or bibliographies will normally not be considered.

My personal goals as Editor-in-Chief are to: (1) establish our criteria for publication in *The Canadian Entomologist* more clearly and more uniformly at a high level, (2) reach agreement among the editorial board that our highest priority is to support the great diversity of research in entomology and related disciplines in Canada, but (3) not stray from our responsibility as an internationally acknowledged journal. My efforts in these respects will be to have more open communication with prospective authors, as well as an on-going dialogue and exchange of ideas with the editorial board (25 members at present) and reviewers. I have met many students at our annual meetings and elsewhere, and I will continue to encourage graduate students to publish the results of their theses in *The Canadian Entomologist.*



Joe Shorthouse

Richard Ring, Editor-in-Chief of *The Canadian Entmologist.*

I would appreciate your feedback on the new design and format of the journal. Perhaps your letters could be published in the *Bulletin.*

Richard A. Ring
Editor-in-Chief
*The Canadian Entomologist*
(on behalf of a large number of people who have been instrumental in bringing about these changes).

## First annual photo contest

The Entomological Society of Canada is proud to announce its First Annual Photo Contest. In 2005, *The Canadian Entomologist* and the *Bulletin of the Entomological Society of Canada* launched a new format for their two publications, part of which involves colour images on the covers. These images are intended to represent the breadth of entomology covered by the Society's publications. Images will be changed with each year with the first issue of the new volume.

### Contest rules are as follows:

1. Photos can be submitted as an electronic file (preferred), a slide, or print (negative will be required if chosen). Digital images must have a resolution of at least 50 pixels/cm.

2. Entrants can submit more than one photo.

3. Photos must be taken by the entrant, or the entrant must own copyright.

4. The copyright of the photo remains with the entrant, but use must be granted to the Entomological Society of Canada for its inclusion on the cover of one volume (i.e. 6 issues) of *The Canadian Entomologist.*

5. The entrant must be a member in good standing of the Entomological Society of Canada.

6. The judging committee will be chosen by the Chair of the Publications Committee.

7. Photos need not be restricted to insect "portraits". To represent the scope of entomological research we encourage photos of field plots, laboratory experiments, insect impacts, sampling equipment, non-insect arthropods, etc. Please provide a few lines describing the photo.

8. A selection of the entries will be exhibited and the winners announced at the Joint Annual Meeting of the Entomological Society of Canada and Alberta in Canmore, Alberta, 2-5 November 2005.

9. There is no cash award for the winners, but photographers will be acknowledged in each issue the photos are printed.

10. Submissions should be sent by 1 September 2005 to:

Allan Carroll
Chair of the Publications Committee
506 West Burnside Rd
Pacific Forestry Centre
Victoria, BC, Canada V8Z 1M5
Tel: (250) 363-0639, Fax: (250) 363-0775
E-mail: acarroll@pfc.cfs.nrcan.gc.ca

Steve Marshal

An *Aeshna* eating a *Chrysops.*

## Mot de la Direction générale

Maintenant que vous vous êtes remis de l'agréable surprise, ou peut-être aussi de l'étonnement, de découvrir la revue *The Canadian Entomologist* en 2005 sous une couverture toute repensée et dans un nouveau format, voici quelques-unes des raisons qui motivent ces transformations. Depuis un certain temps déjà, plusieurs membres de notre Société suggéraient une "modernisation" de notre revue pour mieux rencontrer les attentes et les besoins changeants de nos lecteurs et de nos auteurs. Ce n'est pas un changement pour le changement. La modification de la facture de la couverte, par exemple, reflète mieux la diversité de la recherche en entomologie et dans les disciplines annexes dans le Canada d'aujourd'hui. La couverture est aussi plus colorée et intéressante! Les changements apportés aux pages internes de la couverture permettent une présentation plus rationnelle de l'histoire et du mandat de la Société d'entomologie du Canada (verso de la couverture avant) et de la revue *The Canadian Entomologist* (verso de la couverture arrière). Les modifications du format même des articles de la revue visent (1) à améliorer la diffusion de l'information par une lecture plus aisée et une meilleure présentation des figures et des tableaux et (2) à harmoniser notre incorporation dans la famille des revues scientifiques de CNR Canada. Ces changements se reflètent dans les nouvelles " Directives aux auteurs " qui apparaissent dans le premier numéro du volume 137 de *The Canadian Entomologist*, numéro 1, janv./fév. 2005).

Le mandat de notre revue reste très semblable à celui qu'elle avait sous la direction générale précédente de M. Jean Turgeon; en effet, les manuscrits, en anglais ou en français, traitant de tous les aspects de l'entomologie sont bienvenus. Ils doivent présenter les résultats d'observations ou de recherches originales qui n'ont pas été publiés antérieurement ailleurs. Les rétrospectives, les notes et les forums sont aussi bien accueillis. Les travaux sans analyse scientifique, tels que des listes de spécimens et les bibliographies, ne sont pas normalement considérés.

Hugh Danks

Richard Ring, Directeur général du *The Canadian Entmologist.*

Mes objectifs personnels en tant que directeur général de la revue sont (1) de présenter avec plus de clarté et de façon plus uniforme les critères de haut niveau exigés pour publier dans *The Canadian Entomologist*, (2) d'établir, en collaboration avec le comité scientifique, comme toute première priorité notre désir de soutenir la grande diversité de la recherche en entomologie et les disciplines connexes qui existe au Canada et (3) cela sans jamais reculer devant les responsabilités inhérentes à la publication d'une revue de calibre international. Pour atteindre ces buts, je compte établir un dialogue plus ouvert avec les auteurs potentiels et de maintenir des discussions régulières et des échanges d'idées avec le comité d'édition (qui compte actuellement 25 membres) et avec les évaluateurs des manuscrits. J'ai rencontré plusieurs étudiants des cycles supérieurs lors de nos réunions annuelles et dans d'autres circonstances et je continuerai à les encourager à publier les résultats de leur thèse dans The Canadian Entomologist.

Je vous invite à réagir à la nouvelle présentation et au nouveau format de la revue. Peut-être vos lettres pourraient-elles apparaître dans le *Bulletin.*

Richard A. Ring
Directeur général
(au nom de tous ceux et celles qui ont contribué à ces modifications)

## Premier concours annuel de photographie

La Société d'Entomologie du Canada est fière d'annoncer le premier concours annuel de photographie. En 2005, *The Canadian Entomologist* et le *Bulletin de la Société d'Entomologie du Canada* ont lancé un nouveau format pour leurs deux publications, impliquant entre autres des images en couleur sur les pages couvertures. Ces images ont pour but de représenter l'ampleur de l'entomologie couverte par les publications de la Société. Ces images seront changées à chaque nouveau volume.

### Les règlements du concours sont les suivants :

1. Les photos peuvent être soumises sous forme de fichier électronique (de préférence), de diapositive ou d'imprimé (le négatif sera requis si la photo est choisie). Les images numériques doivent avoir une résolution minimale de 50 pixels/cm.

2. Les concurrents peuvent soumettre plus d'une photo.

3. Les photos doivent avoir été prises par le concurrent, ou ce dernier doit en posséder les droits d'auteur.

4. Les droits d'auteur de la photo demeurent au concurrent, mais l'utilisation doit être accordée à la Société d'Entomologie du Canada pour son utilisation sur la couverture d'un volume (i.e. 6 numéros) dans *The Canadian Entomologist.*

5. Le concurrent doit être un membre en règle de la Société d'Entomologie du Canada.

6. Le jury d'évaluation sera choisi par le président du Comité des publications.

7. Les photos n'ont pas à être restreinte à des " portraits " d'insectes. Afin de représenter l'étendue des recherches en entomologie, nous encourageons les photographies de terrain, d'expériences de laboratoires, d'impacts des insectes, d'équipement d'échantillonnage, d'arthropodes non insectes, etc. S.V.P., fournir quelques lignes décrivant la photographie.

8. Une sélection des candidats sera exposée et les gagnants seront annoncés à la réunion conjointe annuelle de la Société d'Entomologie du Canada et de l'Alberta à Canmore, en Alberta, du 2 au 5 novembre 2005.

9. Il n'y a pas de récompense monétaire pour les gagnants, mais les photographes seront remerciés dans chacun des numéros où les photos apparaîtront.

10. Les soumissions doivent être envoyés avant le 1 septembre 2005 à :

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Steve Marshal

*Mantispa sayi*, a neuropteran parasitic on spider egg sacs.

# Entomological Society of Canada, 2004-2005
# Société d'entomologie du Canada, 2004-2005

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# The Buzz / Bourdonnements

## Paul Fields, Editor / Rédacteur

Winnipeg is a wonderful place to live for a cross-country skier, we have snow from November until well into March. What has this to do with entomology, you may ask. In January, I was out skiing at a provincial park, on a warm day, a few degrees below zero. I had to stop to rewax my skis, and I noticed that there were bunches of dark blue collembola on the snow, snow fleas, possibly *Hypogastrura nivicola*. I marvelled at how an insect could be active at such low temperatures. Because it is only a few millimetres long, I doubt that its body temperature is much different than the snow. Yet they were moving, and I presume feeding in the dead of winter.

We continued to ski, and I noted to my wife that there was a lot of klister on the ski tracks, in dull purple patches. She said that it was the melted snow. This didn't make sense to me, but she was right; there was too much of it to be klister. We skied along, and then it finally dawned on me that it was probably the flattened bodies of thousands of snow fleas. It was such a relief to me when the world made sense again, but I wonder what the hundreds of people that were skiing that day would think, if they knew they were skiing on dead bugs.

So, I think the theme for this year's meeting in Alberta, *Entomology: A celebration of life's little wonders*, is particularly appropriate, as I am amazed at how these small animals make their way in the world.

One final note, many have you have asked to receive the *Bulletin* electronically only. For this issue, it is being sent to all members in honour of the launch of the new colour cover of the Bulletin and its sister publication, *The Canadian Entomologist*.

Winnipeg est l'endroit pour vous si vous êtes amateur du ski du fond, parce qu'on a de la neige de novembre jusqu'à mars. Quel est le rapport avec l'entomologie, vous demandez ? En janvier, je faisais du ski, par une belle journée ensoleillée. Il faisait seulement quelques degrés en-dessous de zéro. Il fallait que j'arrête pour remettre du fard à mes skis, et j'ai remarqué qu'il avait énormément de collemboles bleu foncé sur la neige. C'étaient des collemboles des neiges, peut-être des *Hypogastrura nivicola*. J'étais émerveillé qu'un insecte puisse être actif à une température si basse. Les insectes étaient seulement quelques millimètres en longueur, et je doute que leur température corporelle étaient bien différente de la neige. Quand même, ils bougeaient, et je présume qu'ils mangeaient en plein hiver.

Nous skiions, et j'ai noté à ma femme qu'il y avait beaucoup de klister sur la piste dans les taches bleuâtres. Elle m'a dit que c'était de la neige fondue. Ça m'apparaissait croche, mais elle avait raison, il y en avait trop pour être du klister. Plus loin, je me suis rendu compte que c'étaient probablement les corps aplatis de milliers de collemboles des neiges. Je me suis senti tellement soulagé, que le monde était en ordre, mais je me demandais ce que des centaines de skieurs ce jour-là penseraient, s'ils savaient qu'ils skiaient sur des bibittes mortes.

Ainsi, je pense que le thème pour la congrès conjoint de cette année : *L'Entomologie : Une célébration des petites merveilles de la vie !* , est particulièrement apte, parce que je suis toujours étonné comment ces petits animaux font leur vie dans ce monde.

Un dernier mot; plusieurs d'entre vous aviez demandé de recevoir le *Bulletin* seulement par le Web. Seulement pour ce numéro, il est envoyé à tous les membres, en honneur de la nouvelle couverture couleur du *Bulletin* et de sa publication soeur, *The Canadian Entomologist*.

## *Bulletin of the Entomological Society of Canada*

Editor: Paul Fields
Assitant Editor: Lucie Royer

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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Rédacteur : Paul Fields
Rédactrice adjointe : Lucie Royer

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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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.

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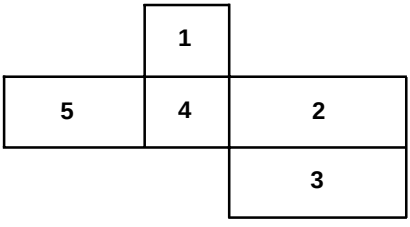


## Images

**On the spine**: The six-spotted tiger beetle, *Cicindela sexguttata* Fabricius (Cicindellidae), a common predaceous beetle in eastern North America, photo: H. Goulet.
**Beside title**: The emerald ash borer, *Agrilus planipennis* Fairmaire (Buprestidae), an invasive beetle from Asia that threatens North American ash trees, photo: K. Bolte.
**Photos on front cover:**
1. *Acyrthosiphon pisum* (Harris) (Aphididae), a species used in studies of seasonality, photo: R. Lamb.
2. Apple sawfly, *Hoplocampa testudinea* (Klug) (Tenthredinidae), trap used to determine population levels in orchards, photo: C. Vincent.
3. Dead lodgepole pine trees killed by mountain pine beetle, *Dendroctonus ponderosae* Hopkins (Scolytidae), in British Columbia, photo: A. Carroll.
4. *Syrphus ribesii* Linnaeus (Syrphidae), a common nectar-feeding hover-fly found in gardens, hedgerows and woodlands, photo: S. Marshall.
5. Research plots used to study the impact of *Macrosiphum euphorbiae* (Thomas) (Aphididae) on flax, photo: R. Lamb.
**Back cover**: *Ixodes gregsoni* Lindquist, Wu and Redner (Ixodidae), a tick parasite of mustelids, photo: K. Bolte.

Français à l'intérieur de la couverture avant

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