



# BOREUS

**NEWSLETTER OF THE  
ENTOMOLOGICAL SOCIETY  
OF BRITISH COLUMBIA**

**Volume 24 (2)**

**December 2004**

# ENTOMOLOGICAL SOCIETY OF BRITISH COLUMBIA

The Entomological Society of British Columbia is a scientific Society founded in 1902 for the advancement of entomological knowledge in the province.

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## **Publications of the ESBC**

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### ***Journal of the Entomological Society of British Columbia***

The *Journal of the Entomological Society of BC* is published annually. Papers for the *Journal* need not have been presented at meetings of the Society, nor is it mandatory, although preferable, that authors be members of the Society. The chief condition for publication is that the paper has some regional origin, interest or application. Line drawings or photographs as candidates for the cover are also accepted. Contributions should conform to the standards outlined in the *Journal* and the Website (<http://esbc.harbour.com/>), and should be sent to the Editor, Dr. Ward Strong, BC Ministry of Forests, 3401 Reservoir Road, Vernon BC, Canada V1B 2C7; tel 250-549-5696; fax 250-542-2230; e-mail [Ward.Strong@gems7.gov.bc.ca](mailto:Ward.Strong@gems7.gov.bc.ca).

The deadline for submissions to be included in the 2005 issue is **September 1, 2005**.

### ***Boreus***

*Boreus*, the Newsletter of the Society is published in June and December. It contains entomological news, comments, reports, reviews and notices of meetings and other events. While emphasizing the Society's affairs, *Boreus* provides members with a forum for their views and news of British Columbia entomology, as well as informal articles, notes regarding research projects, and anything else that may be of interest to entomologists. Please send correspondence concerning *Boreus* to the Editors, Jennifer Heron ([JMHeron@Victoria1.gov.bc.ca](mailto:JMHeron@Victoria1.gov.bc.ca)) or Suzie Lavallee ([slavalle@interchange.ubc.ca](mailto:slavalle@interchange.ubc.ca)).

The deadline for submissions to be included in the June 2005 issue is **May 1, 2005**.

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**Membership** of the Entomological Society of BC is available to anyone interested in entomology. Annual dues are Can\$20.00 (regular member) or Can\$10.00 (student member). Members receive the *Journal*, *Boreus* and *Occasional Papers* (the latter published intermittently).

**Inquiries** concerning membership and back issues should be sent to the Secretary/Treasurer, Dr. Robb Bennett, BC Ministry of Forests, 7380 Puckle Road, Saanichton, BC, V8M 1W4, Canada; tel 250-652-6593; fax 250-652-4204; e-mail [Robb.Bennett@gems6.gov.BC.ca](mailto:Robb.Bennett@gems6.gov.BC.ca)

**Cover:** *Boreus elegans* (Mecoptera: Boreidae); one of the more conspicuous snow scorpionflies in BC. Larvae and flightless adults live in, and feed on, moss and clubmoss. Adults appear in the fall and are active on snow on warm winter days.

## Editor's Notes

### Jennifer Heron

I have enjoyed the natural world since I was a child. My sister and I grew up with a large backyard full of a jungle of plants, and we used a dilapidated old garden shed as our refuge from the parental units. We both were scientists that studied our backyard's life forms and at the same time tried to create our own. We collected snails and slugs, worms and bugs and gave them names, some animals faring better than others within the confines of our living laboratory. The cat always had something to eat. Eventually the shack leaned sideways (a lot), my sister's attention was diverted elsewhere but what remained was my curiosity for nature and more specifically entomology.



Photo by Leah Ramsay

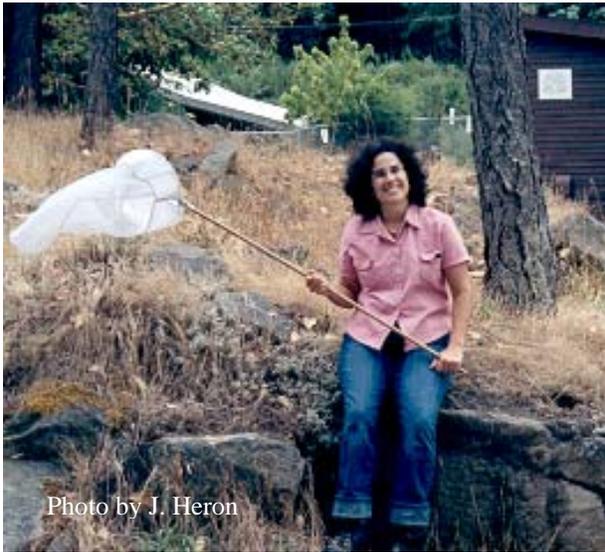
I am looking forward to contributing to Boreus and facilitating the sharing of current news and knowledge in entomology in British Columbia. This afternoon I attended a fabulous talk by Dr. Helen Schwantje, the provincial wildlife veterinarian. She enthusiastically spoke about wildlife diseases that are transmissible by insects and I sat in rapt attention as she described lesions, ulcerations and bulbous puss boils. But oozing gross stuff aside, entomology is a broad subject and getting others enthused and informed about this subject is

something I feel strongly about. Although my interests lie with biodiversity and species at risk, I enjoy learning about the many facets of both the professional and hobby entomologist. Suzie and I are excited to share with you our enthusiasm for entomology but we also would like to know about the entomological subjects that motivate you.

*Jennifer Heron*

## Suzie Lavallee

The popularity of insects as model study organisms throughout the history of biology is undeniable. From Thomas Park's work on competition between two species of *Tribolium* beetle to Dobzhansky's work on the genetics of *Drosophila*, insects have simplified building model ecosystems in the classroom and the laboratory. Even in science today, insects provide us with simplified systems to question the fundamentals of ecology. A recent review by Srivastava *et al.* (2004) found that insect-based microcosms are at the forefront of many ecological investigations and are a powerful tool to use in ecology. Even in the field of applied ecology, biomonitoring frequently uses the response of insects to assess impacts of pollution, water quality and forest health.



Studies of insects are made even more alluring by their interdisciplinary appeal. Parasite and plant ecology, semiochemistry and aeronautics are just a few examples where an elegant blend of two fields of science converged to study insects. In the current drive for more interdisciplinary research and teaching in Canadian universities, the study of insects can only become more popular with time.

While some in ecology seem to be currently riding the wave of black-box ecosystem science, the resurgence of taxonomy and the importance of individual species is quietly growing. With the current Species At Risk Act (SARA) in Canada, the

importance of correct identification and protection of invertebrates is currently being written into government policy. Insects are excellent model organisms for habitat restoration programmes under SARA, as they require the incorporation of food plants and habitat features that may benefit other species as well. Studies on the projected impacts of global warming often look to the vast and detailed records that entomology provides. As temperatures creep slowly upwards, the use of insect models and indicators may provide early warning of changes in ecosystems' functioning. Another current and growing issue is the globalization of trade markets and the spreading of invasive plant and insect species. Work by Judy Myers and Imre Otvos, both featured in this fine edition of *Boreus*, have provided the world with excellent examples of how insects can help classical biological control to be achieved.

In the past, present and future, entomology provides a strong foundation for many biological disciplines and a charismatic set of study organisms for many interdisciplinary studies as well.

*Suzie Lavallee*

### Reference:

Srivastava *et al.* 2004. Are natural microcosms useful model systems for ecology? *Trends in Ecology and Evolution* 19(7): 379-384.

# Society Business

**Fall 2004 Business Meeting** (complete version of these Minutes available on our website)  
Halpern Centre, Simon Fraser University, Burnaby, BC  
29 October 2004 – 2:00 – ~2:55 pm

## SUMMARY OF ACTION ITEMS

<b>Future of <i>Boreus</i></b>	<b>Executive</b>
<b>Journal article formatting</b>	<b>Executive</b>
<b>New Editorial Board members</b>	<b>Strong</b>
<b>New Regional Director</b>	<b>Bennett / Raworth</b>

### 1) Call to Order (Bob Vernon)

Vernon called the 2004 business meeting to order at 2:00 pm.

### 2) Approval of Agenda (Vernon)

Agenda approval moved by Sheila Fitzpatrick, seconded by Rob Cannings.

### 3) Approval of Minutes from Fall 2003 Business Meeting (Vernon)

Fall 2003 Business Meeting Minutes approval moved by Fitzpatrick, seconded by Bernie Roitberg.

### 4) Business Arising from Minutes

#### 4.1) Library issues (Robb Bennett)

No real progress to report. Bennett has discussed options for funding long-term curation of library holdings with Pacific Forestry Centre librarian, Alice Solyma, but no action has been taken.

#### 4.2) Grant & Madsen Awards (Anderson, Bennett)

Thanks extended to sponsors of James Grant (North Okanagan Naturalists) and Harold Madsen (PheroTech Inc.) awards. Madsen Award annual contribution now matches Grant Award (\$200).

### 5) Reports

#### 5.1) Secretary-Treasurer's Report (Bennett)

Society rolls are stable with 59 subscribers and 149 members currently paid up. With the death of Mac MacCarthy earlier this year, there are now 9 Life Members. 2004 year-end ESBC financial and Joint Annual Meeting balance statements read into Minutes (see attachments). ESBC is in excellent financial shape. \$2,500 JAM advance has been repaid to Ent. Soc. of Canada; \$11,876.53 (50% of profits from JAM) has been paid to ESC in support of the John Borden fund. Books will be passed to Anderson for audit. Acceptance of Secretary-Treasurer's Report moved by Rex Kenner, seconded by Terry Shore, carried.

#### 5.2) *Boreus* Editor (Vernon for Cris Guppy)

Report read into minutes by Vernon (see attached). Guppy has indicated his desire to step down as *Boreus* Editor. Some discussion on the future of the newsletter ensued – is it time to terminate, reformat, or otherwise change *Boreus*? General interest expressed in retaining *Boreus* and maintaining publishing format (web and hardcopy versions).

**5.3) Journal Editor (Ward Strong)**

Report read into minutes (see attached). Options for new Journal title page formats discussed. Opinions from membership regarding new formats are welcome. Two new Editorial Board members are needed, one replacement and another to help with increasing workload. **Executive will provide final resolution of formatting. Strong will seek out new Editorial Board members.**

**5.4) Website Editor (Bill Riel)**

Report read into minutes (see attached). Website reorganization is underway.

**5.5) Entomological Society of Canada Regional Director (Terry Shore)**

Report read into minutes (see attached). After many years of service, Shore is stepping down as Regional Director. Vernon initiates a round of applause in thanks to Shore. **Bennett will review by-laws (see 4.5 above) with respect to replacement of Reg. Director. Raworth will oversee replacement of Shore.**

**5.6) President (Vernon)**

Report read into Minutes (see attached).

**6) New Business**

**6.1) Student Scholarships and Madsen and Grant Paper Presentation Awards (Vernon)**

Dan Johnson (ESBC member from Lethbridge AB and 2004 MacCathy Lecturer) generously contributed \$100.00 for a one-time student award. Vernon expressed ESBC's thanks to Johnson. Ward Strong presented the following paper presentation awards: Sue Senger - Harold Madsen Award; Melanie Hart - James Grant Award; Veronica Cervantes - Dan Johnson Award.

Interest in ESBC's graduate student Travel Scholarships (two annual awards of \$500 each) remains low but there were sufficient applications to run competitions for PhD and MSc scholarships. Vernon announced the following successful applicants for 2004 Travel Scholarships: Kathy Bleiker (PhD) and Shauna Hawkins (MSc).

**6.2) Installation of New Officers (Vernon)**

New President-Elect is Karen Needham; new Directors are Niki Hobischak, Jen Perry, and long-time ESBC member Hugh Philip. With a satisfied grin and a barely audible sigh of relief, Vernon then passed the gavel and burden of presidency to incoming President Dave Raworth.

**7) Other New Business (Dave Raworth)**

Raworth thanked the outgoing executive members for their service. Special thanks were extended to Vernon and Markus Clodius for putting together an excellent Annual General meeting, to all the student participants for contributing an unprecedented number of papers, and to Bennett and Strong for shouldering the main burden of running the ESBC.

**8) Adjournment (Raworth)**

There being no further new business, Raworth called for a motion of adjournment. Moved by Leslie Wood, seconded by Clodius, carried at 2:55.

**Minutes submitted by: Robb Bennett, Secretary, 10 January 2005.**

# Upcoming Events

## Conferences

**April 8<sup>th</sup>–10<sup>th</sup>, 2005**

**5<sup>th</sup> International Symposium on Butterfly Conservation**

Southampton University (UK)

Meeting theme is: “Lepidoptera as indicators of Biodiversity Conservation”

More information at: <http://www.butterfly-conservation.org>

**June 26–30, 2005**

**American Arachnological Society**

University of Akron, Akron, OH

More information at: [http://www.americanarachnology.org/AAS\\_Meetings/AAS\\_meetings.html](http://www.americanarachnology.org/AAS_Meetings/AAS_meetings.html)

**August 14–19, 2005**

**9<sup>th</sup> International Conference of the Orthopterist’s Society**

Canmore, Alberta.

More information at: <http://people.uleth.ca/~dan.johnson/orthoptera.htm>.

**August 22-27, 2005**

**European Congress on Social Insects**

Annual meeting of the European Sections of the IUSSI (International Union for the Study of Social Insects)

St. Petersburg, Russia.

<http://www.bio.pu.ru/win/entomol/Kipyatkov/iussi/2005/index.shtm>

**November 2-5, 2005**

**Entomological Society of Canada – Annual General Meeting**

Joint Meeting of the Entomological Society of Canada and the Entomological Society of Alberta

Radisson Hotel & Conference Centre, Canmore, Alberta

Meeting Theme: "Entomology: A Celebration of Life's Little Wonders"

**November 6-10, 2005**

**Entomological Society of America**

Fort Lauderdale, Florida

Annual meeting of the Entomological Society of America

**6<sup>th</sup> International Society of Hymenopterists Conference**

**Sun City Cabanas, Northwest Province, South Africa**

The conference is held near to the Pilanesberg National Park where all the “big-and-hairies” can be seen!

## Lectures

### March 24, 2005

Merrill Peterson (Western Washington University) will speak on: "Sexual isolation and reinforcement in a beetle hybrid zone" at SFU (Room 7172 in SSB) at 3:30.

Further details available at: <http://www.biol.wvu.edu/peterson/index.html>

## Getting out there

### Behr's Blitz 2005



The **Behr's hairstreak** is a nationally threatened butterfly that lives in the Antelope-brush ecosystems of the south Okanagan. The butterfly typically starts its flight period in mid June. The Behr's Blitz Butterfly Event was started a few years ago to help survey for this butterfly and raise public awareness for this and other species that depend on Antelope-brush. This year the Behr's Blitz is scheduled from **Monday, June 13 – Friday, June 17, 2005**. Both experts and novices are encouraged to participate.

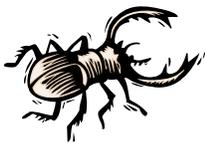
The event starts with a training session at the **Desert Centre in Osoyoos** on Monday, June 13, 2005 around 9:30am. Participants are then grouped and head off to survey polygons throughout the south Okanagan. We provide nets, identification cards, maps and encouragement; we just want your help.

A few years ago, a CBC television crew attended and this entomological event made the news. If you can't make the dates above, but still want to be involved, we can still provide you with the information.

Those interested in volunteering for the event should contact **Jennifer Heron** at 604-222-6759 or [jmheron@victoria1.gov.bc.ca](mailto:jmheron@victoria1.gov.bc.ca).

There is a similar event for the **mormon metalmark** from **Monday, August 15 – Saturday, August 20, 2005**. The details of the training and meeting points aren't finalized, contact Jennifer Heron for more information.

### Bugs and Beers



Those of you interested in being social, we are starting a "Bugs and Beers" monthly social event. Our first event will be held on Monday, **March 21** at the **Foggy Dew Irish Pub**, 405 North Road, Coquitlam, BC around 7pm.

Subsequent events will be held the third Monday of every month. We will change the venue regularly.

## **New and Upcoming Publications**

### **Spiders of North America – an Identification Manual**

Ubick, D., P. Paquin, P.E. Cushing, and V.D. Roth (eds.). 2005. American Arachnological Society.

More information can be found at the American Arachnological Society website:

<http://www.americanarachnology.org/>

Our own Robb Bennett wrote six chapters on as many families in this review of spider identifications. It is due out in March 2005.

### **The Black Flies (Simuliidae) of North America**

Adler, P.H., D.C. Currie and D.M. Wood. 2004. Cornell University Press, Cornell, NY. 941 pp. All you ever needed to know about black flies.... a stupendous achievement.

### **Wetlands of British Columbia: A Guide to Identification**

MacKenzie, W.H. and J. R. Motran. 2004. Handbook No. 52, Research Branch, BC Ministry of Forests, Victoria. 287 pp.

An excellent and useful guide to the types of wetlands in BC. Indispensable to the serious aquatic entomologist.

### **Borror and DeLong's Introduction to the Study of Insects, 7th Edition**

Triplehorn, C.A. and N.E. Johnson 2005. Brooks/Cole, Thomson Learning. 864 pp.

The newest edition of the standard, well-known and superb university text on insect systematics. Updated with new material, including an expanded spider section!

## Notes and News

### Entomological Society of Canada – Gold Medal – Judy Myers



**Judy Myers receives the ESC Gold Medal award  
from ESC President Charles Vincent.**

*Photo courtesy of Barry Lyons*

The 2004 recipient of the Entomological Society of Canada's Gold Medal for Outstanding Achievement in Canadian Entomology is Dr. Judith H. Myers, University of British Columbia, Vancouver. This award is presented in recognition of her contributions to research in insect ecology, particularly her work on the theory and practice of biological control, graduate education, and scientific leadership.

Judy Myers came to the University of British Columbia in 1972 from a Miller Post-doctoral Fellowship at the University of California, following a Ph.D. in ecology at Indiana University. Judy began her academic career in the Department of Plant Science and Institute of Animal Resource Ecology, subsequently joining the Zoology Department, and rising to the rank of Professor in 1989. She has maintained an active involvement in research, education, and administration at this institution, with sabbatical periods in Australia, United Kingdom, and USA.

Throughout this busy academic career, Judy Myers made and continues to make important contributions on the population dynamics and evolutionary ecology of insects. Judy has published over 100 papers on research on more than 20 different species of insects, using them to address specific ecological hypotheses with an experimental approach. Perhaps best known is her work on biological control, both control of pest plants by insect herbivores and pest insects by parasitoids and microbes. Her thinking on the planned introduction of exotic organisms, and the possibility of eradicating accidental introductions, has also been influential. In addition, she and colleagues have made unique contributions to understanding the ecology and evolution of viral disease in cyclic populations of tent caterpillars.

This research places applied entomology within a strong theoretical framework of population dynamics, bringing clarity to and sometimes challenging our basic assumptions on how humans can use interactions between organisms to their benefit. These thoughtful, well-crafted projects have resulted in many widely cited publications, and invitations to organize symposia, and present lectures and symposia papers in Europe and North America. Recently she co-authored a book titled “Ecology and Control of Introduced Plants”.

Those of us who first encountered Judy Myers when we were graduate students know how important a role she plays in training Canadian entomologists. Not only has Judy been a dedicated advisor to 32 graduate students and 5 postdoctoral fellows, she fostered a stimulating and collegial atmosphere for many other students of insect ecology who passed through U.B.C. over the past 32 years. She introduced many to the study of insects in her courses on Insect Ecology, Biological Control, Conservation Biology, Population Ecology and Ecological Genetics. Judy's students have gone on to prominent careers at the University of Toronto, University of Alberta and Simon Fraser University in Canada, at the University of Chicago and University of San Diego in USA, and in Agriculture and Agri-Food Canada, the Department of Fisheries and Oceans, and the Canadian Forest Service, as well as in private business.

Judy Myer's scientific and academic leadership is illustrated by her contributions to ecological, entomological and conservation organizations. Judy has served on international editorial boards of Biocontrol Science and Technology, Ecoscience, Oecologia, and the Annual Review of Entomology. She has been a reviewer of research and academic programs for organizations as diverse as the USDA Forest Service Biological Control Programs in Hawaii, the Queens University Department of Biology, and the Weed Control Program for the Nature Trust of Canada. From 1991-1998 Judy served as Associate Dean of Science at U.B.C. She has actively fostered the role of women in science, and has served as Chair of the B.C. Science Council Committee on Women in Science and Technology from 1996-1999, and as a board member of the Society of Canadian Women in Science and Technology.

These outstanding contributions to entomological research, to the education of entomologists and ecologists, to the application of biological control, and to many scientific institutions make Judith H. Myers eminently qualified to receive the Society's Gold Medal.

*Text courtesy of Robert Lamb*

## **4<sup>th</sup> Annual Dr. G.G.E. Scudder Lecture – Dr. May Berenbaum**

May Berenbaum's talk on the effects of plant toxins on insect ecology was a rare blend of humour, ecology, physiology and chemical ecology. Despite a raging snowstorm, May delivered an entertaining and rigorous seminar to a crowd of about 50 attendees at the UBC's Peter Wall Institute for Advanced Studies on January 7, 2005. Her work has revealed the importance of a metabolic enzyme (P450 monooxygenase) common to insects that may mediate the ability of insects to feed on some unusual host plants. Perhaps the most striking feature of May's work is her depth of investigation into this system, at all levels of its application. From the ecology of herbivorous insects in agriculture to the molecular structure of P450 monooxygenases, May's work has explored the relationship between insects and their food plants. For more details on her talk, please see the following abstract she submitted.

*Suzie Lavallee*

Appearances notwithstanding, insects actually do have a few things in common with humans; among these is an appetite for, and dependence upon, plants as food. The ways in which insects and humans go about the business of eating plants, however, differ dramatically. Humans are spectacularly broad with respect to their intake of plant food; in a single day, a person can consume representatives of dozens of plant families. In contrast, insects are staggeringly narrow in their foodplant choices; over 90% of all herbivorous insects feed on 3 or fewer plant families and in many species larval development is completed on a single species. Insects also share with humans an ability to metabolize plant toxins via cytochrome P450 monooxygenases, heme-based enzymes that are responsible for a broad range of oxidative reactions. The dietary challenges imposed on insect P450s are fundamentally different from the dietary challenges imposed on human P450s. The biochemistry and molecular biology of cytochrome P450s in the swallowtail butterflies (Papilionidae), which feed primarily on furanocoumarin-containing plants in the carrot and citrus family, reveals striking differences in the structure and function of these enzymes in the life of these insects and provides insights into the process by which plant-feeding insects have come to be the most abundant multicellular organisms in terrestrial ecosystems today.

The recipient of many awards from the National Science Foundation, Ecological Society of America, and Entomological Society of America, May Berenbaum has been the head of the Department of Entomology at the University of Illinois at Urbana-Champaign since 1992.

### **New Forest Arthropods Newsletter**

The Biological Survey of Canada (BSC) is going to publish a new newsletter: 'Forest Arthropods Newsletter' to feature Canadian work on forest arthropod biodiversity, systematics, faunistics (not pest management). The first issue will appear and be distributed (electronically) in late February 2005. At this time Dave Langor is gathering items to appear in the "News" section (grad student opportunities, jobs, conferences, etc.). There will also be a recent literature section to announce publications released from 2004 to date. Please send him the citations at: [dlangor@nrcan.gc.ca](mailto:dlangor@nrcan.gc.ca).

The database of Canadian Forest Arthropod Projects is also being updated on the BSC website. Please have a look (<http://www.biology.ualberta.ca/bsc/english/forestprojectsummary.htm>) and contact Dave Langor know if your current entries need to be adjusted or whether you have something new to add.

# Funding Opportunities

## 8th Annual Graduate Student Scholarships

The Entomological Society of British Columbia announces the eighth annual Graduate Student Scholarship competition. Two \$500.00 Scholarships (one M.Sc., one Ph.D.) are awarded each year at the Annual General Meeting. Scholarships are to be used to defray research paper or poster presentation related costs (including travel) incurred by graduate students for participation in conferences other than the ESBC AGM.

### For consideration, applicants must be:

- Graduate students and ESBC members in good standing, and **must submit a Word file containing:**
  - name and locality of conference to be attended
  - title and abstract of research to be presented
  - current CV

Abstract should be double spaced, 12 font, and a **maximum** of 200-250 words (based on processor electronic word count). Applications will be judged on the basis of scientific importance, quality of the application, and qualifications of the applicant. Applications from M.Sc. and Ph.D. students will be judged in separate categories; a singleton application in either category will be judged with applications in the other.

Deadline for receipt of applications for 2005 Scholarships is 30 September 2005. This year's scholarships will be awarded during the ESBC Annual General Meeting, 21 October 2005. Send applications to:

**Robb Bennett**  
Secretary/Treasure, ESBC  
BC Ministry of Forests  
7380 Puckle Road  
Saanichton, BC V8M 1W4

or by e-mail to: [robb.bennett@gems6.gov.bc.ca](mailto:robb.bennett@gems6.gov.bc.ca)

## **H. R. MacCarthy Memorial Education Fund**

Ever wanted to raise caterpillars in your classroom, collect insects on a spring field trip, or set up an ant farm? Now is the time. The Entomological Society of British Columbia is offering small grants to schools in BC to help fund insect-related projects. These grants, usually from \$50-\$150 apiece, will provide the funding required to purchase equipment and supplies for entomological class projects. Grades K-12 are eligible, or the school can apply for supplies for general use. Have you visited a pond but didn't have nets and screens to view the abundant aquatic insect life below the surface? Apply now and you soon might.

The ESBC has funding for 10-15 grants. This program is offered every 3 years or so; last time interest was high, so get your application in early. Funds can be used for the purchase of entomological equipment like butterfly nets or display cases; for reference materials such as books and posters; or for class projects such as butterfly or silkworm rearing, to name but a few.

Sound interesting? Visit the ESBC website (<http://esbc.harbour.com>) which has an on-line application form as well as links to many entomological supply houses from which materials can be purchased. You can also request that an application form be faxed to you by phoning the number below.

When applying, please provide details of a specific project that you would like to pursue and an itemized list of equipment or materials needed. The deadline for applications is February 28<sup>th</sup>, 2005. Applications will be reviewed and decisions made by mid-March, 2005. This should give time for spring projects if desired, or the grant can be used for fall projects in the following school year. Good luck!

Karen M. Needham  
Chair, Education Committee, ESBC  
c/o Spencer Entomological Museum  
Department of Zoology, UBC  
Vancouver, BC V6T-1Z4  
(604) 822-3379  
[needham@zoology.ubc.ca](mailto:needham@zoology.ubc.ca)

THE H. R. MACCARTHY MEMORIAL EDUCATION FUND  
APPLICATION FORM

School Name and Address:	<b><i>Return to:</i></b> Karen Needham, Chair ESBC Education Committee c/o Spencer Entomological Museum Department of Zoology, UBC Vancouver, BC V6T 1Z4 Ph: (604) 822-3379; Fax: (604) 822-2416 needham@zoology.ubc.ca
Teacher or Contact Person:	
Grade(s):	
Nature of Project:	
1. Number of students involved: 2. Project description:	
3. Equipment and materials required:	
4. Timeframe for completion of project:	
5. Budget required: (Please be specific. Include shipping and taxes in price estimates.)	

# Submitted Works

## BC Natural Disturbance Database Project

By Patricia Perkins and Steve Taylor

For over 70 years, the Forest Insect and Disease Survey (FIDS) and its predecessors— a Canadian Forest Service program monitored forest insect conditions in British Columbia through ground surveys, aerial overviews, and permanent sampling stations. FIDS collected a vast amount of information on forest insects in BC<sup>1</sup>. To make this resource more readily accessible and useable, researchers at the Pacific Forestry Centre (PFC) in Victoria have been working on compiling and digitizing much of this historical data (Parfett et al. 1994; 1995 ). This work has been ongoing since 1985, and has been a joint effort between various groups at PFC. Additionally, a synthesis of studies of insect impacts on forest tree mortality and growth in British Columbia is underway. Approximately 50 studies -- recent and historical, published and unpublished -- have been located for 11 major forest insects. These studies are being abstracted to aid in estimating impacts.

During annual assessments of the province, insect outbreaks were recorded in detail on provincial overview maps. Digitized maps have recently been completed and updated with recent BC Ministry of Forests provincial overview data, along with historical forest fire records as part of the "British Columbia Natural Disturbance Database" project. There are approximately 60 insects represented in the overview survey database, in over 100 000 infestation polygons. In addition to GIS coverages, the data are available in an Access database. Data analyses are currently focusing on examining mountain pine beetle range expansion in relation to climate change, and interactions between forest fire and insect outbreak occurrence (Carroll et al. 2004; Taylor and Carroll 2004). Outbreak history for mountain pine beetle, *Dendroctonus ponderosae* (Hopkins), is shown in Fig. 1; animations of the outbreak history for this and ten other insects have been compiled and are available online at [http://www.pfc.cfs.nrcan.gc.ca/fires/disturbance/index\\_e.html](http://www.pfc.cfs.nrcan.gc.ca/fires/disturbance/index_e.html)

FIDS also carried out extensive population sampling, focusing primarily on defoliating insects (Harris et al. 1972). "Three tree beatings" at permanent sample stations throughout the province over about a 45-year period yielded approximately 70,000 collection records for close to 1,200 taxa. Population data from this network of permanent sample stations was entered in the national FIDS-INFOBASE. Researchers at PFC are re-examining population trends in several important native and introduced species, and will make the data available in Access format after further error checking is complete. This information may be used to update interpretations of historic outbreak cycles (e.g. Harris et al. 1985 a,b,c).

For more information about the BC Natural Disturbance Database project please contact:

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<sup>1</sup> The history of FIDS and forest entomology in BC has been elegantly recorded in Hall et al. (2001), Van Sickle et al. (2001), and Rajala (2001); interested readers are directed to these sources for more information.

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## Member Profiles

Our entomological society currently has over one hundred members. What do you do? Please send us your name, job title and affiliation, email and phone number along with a sentence about what you do. We plan to publish this information in the next issue of Boreus thus allowing our members to get acquainted with one another!

### Greg Smith



Greg, hard at work examining an infested tree

Greg Smith is a Master's student at UNBC co-supervised by Dr. Staffan Lindgren (UNBC) and Dr. Allan Carroll (CFS, PFC). His research is in bark beetle ecology, specifically the interactions between an engraver beetle, *Pseudips mexicanus* (Hopkins) and endemic *Dendroctonus ponderosae* Hopkins (the mountain pine beetle) in suppressed lodgepole pines. The project has three components: 1) investigation of the little known life history strategies of *P. mexicanus*, 2) the effect *P. mexicanus* has on endemic mountain pine beetle resource utilization and, 3) the characterization of the level of primary attraction exhibited by mountain pine beetles to trees infested with *P. mexicanus*. The overall purpose of his work is to determine the net effect *P. mexicanus* has on endemic mountain pine beetle resource use in suppressed lodgepole pines. Currently, Greg is in the proposal writing stage and will be starting his first full field season in the Merritt and Kelowna areas of southern BC in 2005.

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## **Dr. Imre Otvos**

### **Parasites, predators and pathogens pave path to fame**

The walls of Dr. Imre Otvos' lab may look solid enough, but they extend way beyond the small confines of the nine by seven metre room where this Natural Resources Canada senior research scientist develops ecologically sound and environmentally friendly biological control methods.

Researchers from as far away as China, Hungary and the United States not only know of Dr. Otvos and his expertise in integrated pest management; they've welcomed him formally into their academic circles with accolades and memberships.

Over the years, Dr. Otvos has been made a member of the Hungarian Academy of Sciences; a Fellow of the Royal Entomological Society of London; a Research Professor at the Key Laboratory of Forest Protection in China (equivalent to a Centre of Excellence in Canada); and a Life Member of the Entomological Society of British Columbia. Most recently he was named a Fellow of the Entomological Society of Canada at the Society's 2004 Annual Meeting in Charlottetown, Prince Edward Island.

The United States Forest Service has also acknowledged the significance of Dr. Otvos' work, following completion of the first of two long-term cooperative projects on the ecology of a virus registered for the control of Douglas-fir tussock moth (an important forest pest in the Pacific Northwest).

Dr. Otvos used environmentally-friendly biological control when he worked on the western spruce budworm, the western hemlock looper and the blackheaded budworm. Along with research scientist Dr. Roy Shepherd (retired), Dr. Otvos developed a pest management system for the Douglas-fir tussock moth that is now part of the BC Forest Practices Code and is used operationally. He's also had success using classical biological control to suppress winter moth on Vancouver Island and larch casebearer in the Interior of B.C.

Imre Otvos came to Canada in 1956 as a member of the Sopron Group of Hungarian forestry students. He earned a Bachelor of Science in Forestry at UBC and then went to University of California, Berkeley where he earned his M.Sc. and Ph.D. in entomology. "Those were the interesting hippie years of the 1960s", he says.

His career with the Canadian Forest Service began in 1969 at the Newfoundland Forest Research Centre where he evaluated the roles of natural enemies in the control of defoliators including the eastern hemlock looper and the eastern spruce budworm. A visit to China in 1984, as part of a four-person Canadian scientific delegation examining that country's use of biological control methods, set the stage for Dr. Otvos to be invited back several more times to consult on forest insect problems and give presentations at international conferences, universities and research institutions.

Dr. Otvos is a modest man. He'll quickly point out that he works with a team of dedicated individuals in his lab. And a quick look at who's who on that team speaks volumes about his commitment to support and mentor young men and women, particularly students. At the moment, his research group includes GIS Analyst Kangakola Omendja, research technicians Nicholas Conder and Andrea Schiller, students Meaghan Complin, Andrea Fritz and Karolina Monge Monge and Youth Intern Janine Jell.

Dr. Otvos is also an Adjunct Professor at the University of Victoria and the University of British Columbia (UBC). He's directed the research and obtained funding for seven MSc students and one PhD student and has written close to 100 research articles and publications.

*By Lynda Chambers*