

Boreus



Newsletter of the Entomological Society of British Columbia



December 2006
Volume 26 (2)



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Top to bottom photographs: Spotted Lake outside Osoyoos; Rob Cannings looking for the elusive *Tanypteryx hageni* at Herman Lake, Terrace; day of collecting at White Lake, near Penticton; dragonfly at Nighthawk Ecoreserve near Keremeos

The Executive

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

Entomological Society of BC Executive

<i>President</i>	Richard Ring, University of Victoria,
<i>President-Elect</i>	John McLean, University of British Columbia
<i>Past-President</i>	Karen Needham, University of British Columbia
<i>Secretary / Treasurer</i>	Robb Bennett until December 31, 2006 BC Ministry of Forests 7380 Puckle Rd. Saanichton BC V8M 1W4 Lorraine Maclauchlan, starting January 1, 2007 BC Ministry of Forests, 515 Columbia Street, Kamloops, BC, Canada V2C 2T7
<i>Editorial Committee (Journal)</i>	Ward Strong (Editor), BC Ministry of Forests Robb Bennett, BC Ministry of Forests Lorraine Maclauchlan, BC Ministry of Forests Joan Cossentine, Agriculture Canada, Agassiz Jennifer Heron, BC Ministry of Environment
<i>Editor (Boreus)</i>	Naomi DeLury, (1st), Agriculture Canada, Agassiz
<i>Directors</i>	Dezene Huber (1nd), University of Northern BC Mike Smirle (1nd), Agriculture Canada, Summerland Marcus Clodius (2nd), Agriculture Canada, Agassiz Rob McGregor (2nd), Douglas College, New Westminster
<i>Honorary Auditor</i>	Karen Needham, University of British Columbia
<i>Regional Director of National Society</i>	Allan Carroll, Canadian Forest Service, Victoria
<i>Web Page Editor</i>	Bill Riel, Canadian Forest Service, Victoria
<i>Web page</i>	http://www.harbour.com/commorgs/ESBC/

Publications of the ESBC

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@gov.bc.ca.

The deadline for submissions to be included in the 2007 issue is **September 1, 2007**.

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 (Jennifer.Heron@gov.bc.ca).

The deadline for submissions to be included in the June 2007 issue is **May 1, 2007**.

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. Lorraine Maclauchlan, BC Ministry of Forests, 515 Columbia Street, Kamloops, BC, Canada V2C 2T7; tel 250 828-4179; fax 250 828-4154; e-mail Lorraine.Maclauchlan@gov.bc.ca

Cover Sketch: *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.

Cover Photograph: Lycaenid butterflies are common throughout the province. Can you name this butterfly?



Busy wasps at the Nighthawk Ecoreserve near Keremeos

Editor's Notes

What is the relationship between an archaeologist, a treasure hunter and an endangered species entomologist? All three shares a fascination with finding something that hasn't been seen or located in many years. I must admit I am a trinket collector, and have closets; storage lockers, containers, boxes and basements filled with treasures from many garage sales and thrift stores. I grew up with a grandmother who had an antique store, and from an early age I would accompany her to rummage sales in search of collectables. I think it partially explains my interest in entomology, as looking for trinkets is very similar to searching for a population of an elusive insect species not seen for a number of years. Locating such a population, recording its habitat and mapping the record is immensely satisfying, regardless of the frequency of actually finding such a rare population.

This past summer brought a number of treasures. A local naturalist confirmed a population of the Endangered Taylor's Checkerspot butterfly, possibly the only location in Canada. An insect foray to Bute Inlet located a number of rare finds, including a cryptic spider, a rarely seen dragonfly, and an elusive crane fly. A search of the saline aquatic habitats in the south Okanagan did not reveal the Parawana Tiger Beetle, but a number of us sure did try finding the insect. The treasure hunt continues, and with this next season brings the hope of another new record, and the satisfaction of a further understanding of the arthropod diversity in our province. See you in the field!

Jennifer Heron



The Island Marble butterfly has not been seen in BC for over 100 years. Perhaps a population remains hidden somewhere in southern Vancouver Island or the gulf islands.

Society Business

ENTOMOLOGICAL SOCIETY OF BRITISH COLUMBIA

Fall 2006 Business Meeting
Richmond Nature Park - Kinsmen Pavilion
11851 Westminster Hwy., Richmond, BC
13 October 2006 3:26-4:20 pm

SUMMARY OF ACTION ITEMS

<i>TCE</i> manuscript review process transition	Allan Carroll
Amateur entomologists issue	Carroll
Formats of future AGMs	Executive
Monitor rate of manuscript submissions	Ward Strong
<i>Boreus</i> editorial needs	Jennifer Heron
Sec'y/treasurer transition	Robb Bennett / Lorraine Maclauchlan
New JESBC subject editor	Strong

- 1) **Call to Order (Karen Needham)**
Needham called the 2006 business meeting to order at 3:26 pm.
- 2) **Approval of Agenda (Needham)**
Agenda approval moved by Dave Gillespie, seconded by Dave Raworth.
- 3) **Approval of Minutes from Fall 2005 Business Meeting (Needham)**
Fall 2005 Business Meeting Minutes approval moved by Richard Ring, seconded by Raworth.
- 4) **Business Arising from Minutes**
 - 4.1) **2005 JESBC printing costs monitoring (Ward Strong)**
ESBC was overcharged by approximately \$1,000 (\$5,500) for publication of 2004 JESBC. In compensation, 2005 publication expenses were reduced by a similar amount to \$3,500. See also item 5.2.
 - 4.2) **TCE formatting and electronic review (Ring)**
The Canadian Entomologist will be moving to web-based system of

manuscript management in the near future. Systems currently being looked at are National Research Council's "Osprey" system (~\$15k) and SFU-based "Open Journal System" (free!). Transition will be discussed at November AGM of Ent. Soc. of Canada. See also item 5.5. **Regional Director Allan Carroll will track progress.**

4.3) Amateur entomologists issue (Ring for Carroll)

Issue of how best to encourage/support amateur entomologists continues to be discussed at national level. Quebec has a separate association for amateur entomologists. Discussion will continue at November ESC AGM. **Carroll will track progress.**

4.4) ESBC library issues (Robb Bennett)

Library management discussions with Canadian Forest Service are on-going (led by Vince Nealis). Library maintenance (recording & shelving new issues) in summer 2006 was organized by Greg Smith and done by his parents, David and Susanne.

4.5) 2-day AGM planning (Needham)

Planning for the current 2-day AGM and symposium went well but illustrated the need for greater help in future efforts. Meetings usually are organized almost entirely by current president; committee process is probably warranted for future 2-day meetings. **Executive will plan future AGM formats and determine need for establishment of planning committees on case-by-case basis.**

5) Reports

5.1) Secretary-Treasurer's Report (Bennett)

Bennett has announced his decision to step down as Secretary-Treasurer in order to take over *The Canadian Entomologist* editorial duties from Richard Ring. See also item 6.1 and 6.3. Society membership and subscription rolls remain stable. 2006 year-end financial statement read into minutes (see attached). Acceptance of Secretary-Treasurer's Report moved by Strong, seconded by Rex Kenner, carried.

5.2) Journal Editor (Strong)

Report read into minutes (see attached). See also item 4.1. Apparent low submission rate may be a consequence of attempts to address "impact factor" issue. **Strong will monitor manuscript submissions** for one more year to determine if manuscript

deadlines should be adjusted. Acceptance of Journal Editor's report moved by Rob McGregor, seconded by Smith, carried.

5.3) *Boreus* Editor (Jennifer Heron)

Suzie Lavallee has resigned as co-editor. Article submission deadlines remain 1 May and 1 November for June and December issues, respectively. **Heron will look for new co-editor if necessary.** Acceptance of *Boreus* Editor's report moved by Markus Clodius, seconded by Kenner, carried.

5.4) Website Editor (Needham for Bill Riel)

Report read into minutes (see attached). Test website appears to be a major improvement over the current site. Acceptance of website Editor's report moved by Raworth, seconded by Gillespie, carried.

5.5) Entomological Society of Canada Regional Director (Ring for Carroll)

Paraphrased report read into minutes (see attached). Main issues are amateur entomologists, *TCE* manuscript management, and the need for new images for cover of *TCE* and *Bulletin*. See also item 4.2. Acceptance of Regional Director's report moved by Lorraine Maclauchlan, seconded by Strong, carried.

5.6) President (Needham)

Report read into minutes (see attached). In thanks for his service to the ESBC, on behalf of the society Needham presented Bennett with a (much appreciated) bottle of fine Scotch. Bennett thanked Needham and the rest of the ESBC for the opportunity to contribute to the development of entomology in BC. Acceptance of President's report moved by John McLean, seconded by Kenner, carried.

6) New Business

6.1) Society Secretary/Treasurer (Needham)

Needham thanked Lorraine Maclauchlan for volunteering to take over secretary/treasurer duties when Bennett steps down at the end of December. **Bennett will work with Maclauchlan to ensure a smooth transition.**

6.2) Subsidy of ESBC activities (Bennett)

Bennett reminded membership that his Ministry of Forests base budget annually subsidizes copying of *Boreus* and mailing of it and JESBC (current value about \$1,500). Maclauchlan has indicated that

she should be able to continue this procedure but there is no guarantee that the subsidy will continue indefinitely.

6.3) JESBC subject editor (Strong)

Bennett has resigned as morphology/taxonomy subject editor effective as soon as the current issue has been published (Dec. 2006). **Strong will lead search for new subject editor.**

6.4) Student awards (Needham)

To thunderous applause the following student awards were presented: ESBC travel scholarships (\$500 each) to Gwylim Blackburn (UBC) and Claudia Copley (UVic), the James Grant Award (best MSc presentation, \$200 from North Okanagan Naturalists Club) to Tim Hazard (SFU), and the Harold Madsen Award (best PhD presentation, \$200 from Phero Tech Inc.) to Gwylim Blackburn (UBC).

6.5) Installation of New Officers (Needham)

Eight candidates (a new record for executive elections) ran for 3 director positions. New President-Elect is John McLean; new Directors are Naomi DeLury, Dezene Huber, and Mike Smirle. Needham thanked the outgoing directors (Niki Hobischak, Jen Perry, and Hugh Philip) and Past-President (Dave Raworth) for their service to the ESBC. Then, with a look of apparent great relief, she passed the ESBC gavel to incoming President Richard Ring.

7) Other New Business (Ring).

7.1) Position opening (Bernie Roitberg)

A competition to fill the new “Thelma Finlayson Chair of BioControl” position at SFU will soon be posted. Anyone interested should contact Roitberg.

8) Adjournment (Ring)

There being no further new business, Ring extended his personal thanks to Needham for organizing the 2-day meeting (remarking especially upon the fine venue and food), to Rob McGregor for setting up the diverse scientific program, and to Robb Bennett for taking over from him as the new *TCE* Editor. Ring then called for a motion of adjournment. So moved by Kenner, seconded by Raworth, carried at 3:40, followed by dispersion to enjoy what remained of a beautiful fall afternoon.

Minutes submitted by: Robb Bennett, Secretary, 26 October 2006.

Minutes revised 1 November 2006

ENTOMOLOGICAL SOCIETY OF BRITISH COLUMBIA
2006 Year-End Financial Statement (1/x/2005 - 30/ix/2006)

FORWARDED

1. Bank balance forwarded on 30 September 2005		16,913.42
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RECEIPTS

1. Dues		3,932.00
Memberships	2,766.25	
Subscriptions	1,165.75	
2. Publication		2,969.53
2005 page charges (Vol. 102)	2,798.43	
Back issues	171.10	
3. Miscellaneous income		2,305.25
Dan Johnson Award 2005	100.00	
J. Grant Award 2006 (NONC)	200.00	
Invertebrates SAR Symposium income	520.00	
I-SAR reimbursement (MoEnv.)	494.00	
AGM 2005 income	990.00	
Term deposits interest transfer	0.00	
Interest	1.25	
4. Total Receipts		9,206.78

EXPENDITURES

1. Publication		9,425.00
2004 Journal printing	5,500.00	
2005 Journal typesetting	375.00	
2005 Journal printing	3,500.00	
2005 Journal delivery	50.00	
2. Miscellaneous expenditures		3,999.28
Dan Johnson Award (Z. Lindo)	100.00	
Travel Scholarships (W. Van Herk / J. Allison)	1,000.00	
James Grant Award (MSc. Nt.Ok.Nat. – W. Van Herk)	200.00	
Harold Madsen Award (Ph.D. Ph.Tech. – S. Vibert)	200.00	
Society registration (2006)	25.00	
I-SAR Symposium expenses	1,014.00	
2005 AGM expenses	1,014.00	
Web site fees (2005)	205.20	
Web site fees (2006)	180.00	
Library volunteer gift certificate (G. Smith)	50.00	
Subscription overpayment refund	5.60	
Service charges	5.48	
3. Total Expenditures		13,424.28

BALANCE

16,913.42 + 9,206.78 – 13,424.28 = 12,695.92		12,695.92
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OTHER ASSETS – Island Savings Credit Union

1. Savings		1,094.50
Balance forward	41.14	
Transfer in Interest from Term 5	760.00	
Transfer in Interest from Term 3	225.00	
Credit interest	0.40	
Patronage deposit	67.96	
2. Membership Equity Shares		5.00
3. Term Deposits		42,974.40
3 @ 3.75% (start 17/i/05, matures 17/i/10)	6,000.00	
5 @ 3.80% (start 17/i/03, matures 17/i/08)	20,000.00	
6 @ 3.00% (start 18/v/04, matures 18/v/07) + 494.40 interest (18/v/2006)	16,974.40	
4. Total Other Assets		44,073.90

BANK BALANCE on 30 September 2006 **\$12,695.92**

OTHER ASSETS on 30 September 2006 **\$44,073.90**

TOTAL ASSETS on 30 September 2006 **\$56,769.82**

Year-End Statement prepared 9 October 2006 Robb Bennett, ESBC Secretary/Treasurer
Audited - Dave Raworth, Past President



We do not have a current photograph of Ward, but will work hard to obtain one next field season. HeeHee.

Executive Reports

Editor's Report – Journal of the Entomological Society of British Columbia

Volume 103, 2006, is on target for publication in December. There were only nine manuscripts submitted before the deadline. One was rejected before it went out to review, as being less than the Least Publishable Unit, while a second was rejected after review for fatal experimental flaws. Three late submissions are being hurried through in hopes they will be ready for publication by press time. I would like to thank subject editors Joan Cossentine, Robb Bennett, and Lorraine Maclauchlan, various anonymous reviewers, and typesetter Jen Perry for all their help and assistance so far in getting this volume together.

Volume 102, 2005, was printed and distributed by December 14, 2005. This marks the first time in recent history that a volume has been distributed in its publication year. It contained eight regular papers and four Scientific Notes. The excellent cover graphic of a lygaeid bug collected in BC and first described by Geoff Scudder in 1999, *Peritrichus pilosulus*, was kindly provided by artist

Launi Lucas. Printing from electronic files was done by John Peters and crew at Simon Fraser University Reprographics. PDF reprints were sent to authors and posted on the ESBC website.

The low submission number this year may be related to our new, earlier, submission deadline of September 1. Our deadline has been October 1 for years, and has been only loosely adhered to. As authors become aware of the new and stricter deadline, submissions may climb again. It could be that September 1, following close on the heels of field season, is too early in the year for a submission deadline. This new deadline was chosen so that the Journal could be in compliance with Thomson ISI timeliness requirements, improving our chances of being listed in Web of Science and Current Contents, and of being rated with an Impact Factor.

We are still searching for a cover graphic for Volume 103. Any and all suggestions of entomological art will be entertained.

Respectfully submitted,

Ward Strong

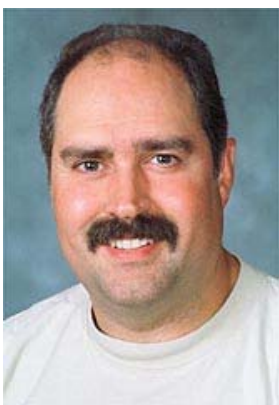
Web Editor's Report

A big effort has gone into re-designing the website to give it a more modern look and simplify navigation. Along with this, the file structure of the website has been streamlined and organized much more coherently, which should simplify the management of the site in the future.

The "new look" website has not replaced the existing site just yet: I will wait on feedback from the executive before committing the changes. The old site will be carefully archived so that nothing will be lost in the conversion.

Special thanks go to Patricia Woods Perkins for her design effort and work on the website contents.

Bill Riel



http://www.pfc.cfs.nrcan.gc.ca/profiles/riel-b_e.html



http://www.pfc.cfs.nrcan.gc.ca/profiles/carrol-a_e.html

Report of the ESBC Regional Director

Action items

During 2006, the issue of facilitated access to the ESC-SEC AGM for amateur entomologists was considered. Based upon discussions with members of the ESC-SEC executive, there appears to be two ways that involvement by this segment of the entomological community can be encouraged. First, lower fees for meeting attendance can be implemented. However, the fees for attending a joint annual meeting are almost entirely at the discretion of the regional society hosting the event. A consistent “special” fee for amateur entomologists attending the joint annual meetings would therefore require the consensus of all regional societies. To explore the potential for this consensus, I have approached the Chair of the Annual Meeting Committee, Terry Shore, who will raise the issue with each of the other regional societies. Second, the involvement of amateur entomologists in the ESC-SEC could be encouraged through lower membership fees. At the 2006 joint annual meeting in Montreal, I will raise this issue with the Membership Committee, chaired by Jon Sweeney.

ESC-SEC activities - 2006

The 2006 ESC-SEC executive initiated a series of actions arising from the recent strategic review. All of these actions have developed as a consequence of the increased and increasing reliance on information technologies by scientific societies. Consequently, an ad-hoc IT committee was formed, chaired by Michel Cusson, and tasked with addressing the following issues:

1. Electronic submission of manuscripts to *The Canadian Entomologist*
 - a. Assess the current electronic review process via email
 - b. Assess (and eventually implement) a web-based submission/review system
 - c. Design electronic review forms
2. Electronic publication of *The Canadian Entomologist*
 - a. Assess the current use of electronic copies of TCE articles
 - b. Determine which and how many databases provide hyperlinks to TCE papers
3. Electronic publication of *The Bulletin of the Entomological Society of Canada*
 - a. Assess the possibility of providing individual columns in PDF format, on the ESC-SEC website, from a searchable database

4. ESC-SEC web site
 - a. Suggest and implement improvements
 - b. Post ESC-SEC financial statement in the member section of our website
5. Standardization of ESC-SEC electronic communication format
 - a. Assess current situation
 - b. Convert/edit TCE form letters

Preliminary results from the ad-hoc IT Committee will be tabled at the ESC-SEC AGM in Montreal in November. Those results will be summarized and presented as part of the Regional Director's spring report.

Allan Carroll

ESBC President's Report (Fall Meeting 2006)



<http://www.zoology.ubc.ca/zoology/z/needham/index.html>

The winter of 2005 (post-AGM) was spent getting up to speed on Society business, both past and present. A big thank-you to past-president Dave Raworth, who was kind enough to send me all the background documents I needed to do this and has been extremely supportive throughout my term. I only hope I can return the favor when Richard steps into the ring.

Negotiating the incorporation of the ESBC library holdings into the PFC library continues with Vince Nealis kindly facilitating discussions between the ESBC executive and Jim Wood at the PFC. We hope to have a meeting with them in the near future.

The ESBC has been asked to be an official sponsor of the bid for the 2012 International Congress of Entomology, to be held in San Diego. After a lively email discussion on the subject, we decided to offer our sponsorship as long there will be no financial liability for the Society should the Congress run at a deficit. A letter of support was sent in August.

We have also been asked for our input on a review of the arrangements between the ESC and regional societies when hosting Joint Annual Meetings. Thanks to all of you who provided valuable comments on the process, which I collated and forwarded to Allan Carroll on our behalf.

In other ESC news, the Scudder Symposium issue of *The Canadian Entomologist* arrived this month. It opens with an introduction by our own Rob Cannings, detailing Scudder's career (40 years of which was spent in UBC's Department of Zoology!), and contains 10 refereed papers by ex-students, colleagues, and friends of GGE, many of whom are current or past ESBC members. Congratulations, Geoff!



Karen in the field in the south Okanagan

Kudos to Ward Strong and his subject editors, whose refinement of our journal editing/production process and reformatting of the journal itself resulted in the first issue ever (well, in a really long time anyways!) to reach the membership in the month listed on the cover. And all with no sacrifice in the quality of the product or its contents. Bill Riel worked on updating the look of the ESBC website and making it easier to navigate. Boreus, too, took on a new look and feel under the direction of Jennifer Heron and Suzie Lavallee.

Sadly, we were also charged with the task of finding a new Secretary/Treasurer, as Robb Bennett has decided to step down after 12 years in this capacity. The search has been a difficult one, because Robb leaves some mighty big shoes to fill. Fortunately for all of us, Lorraine MacLauchlan has agreed to step into this demanding and crucial position. Thank you, Lorraine, for your willingness to serve the Society. And a tremendous thanks to Robb – your attention to detail, your vast knowledge of procedure and policy, and (perhaps most importantly) your love of the profession have made your contribution to the Society invaluable and immeasurable. The ESBC has flourished under your care and attention. We wish you the best in your new position as editor of *The Canadian Entomologist*.

A final nod to the outstanding and dedicated members of the Executive, whose assistance has been essential and greatly appreciated. They have shared the work and the responsibilities with me, in a dynamic and yes even fun (!) atmosphere. The ESBC is a productive, financially sound, and energetic group thanks to all of them, and to you, our members. Being a part of it is truly an honor. I look forward to continuing our work together on Society business throughout the term to come.

Karen M. Needham, President, ESBC



Boreus Editor's Report

This past year Boreus has been an enjoyable newsletter to produce. Suzie has resigned from co-editor, so I will continue to produce the newsletter. Articles, stories, photographs, requests for information, requests for graduate students and other entomological

news are welcome. Send submissions to Jennifer.Heron@gov.bc.ca.

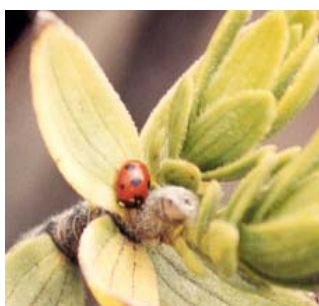
Jennifer Heron
Boreus Editor



Rob Cannings setting a malaise trap at Mahoan Lake, south Okanagan this past summer

2006 AGM & Aquatic Entomology Symposium

Karen Needham did an outstanding job of organizing this year's AGM held at the Richmond Nature Park Kinsmen Pavilion. It was an immense success, with sixty people attending. Rob McGregor put together a great list of speakers for the day. Japanese food was served for lunch, and many attendees took advantage of the great weather to stroll through some of the nature trails surrounding the pavilion.



Speakers that presented at the ESBC AGM October 13, 2006.

Presentation	Authors
Predicting reactivation of over-wintering spider mites, <i>Tetranychus urticae</i> : an exercise in apatial and temporal scales	Dave Raworth Agriculture Canada, Agassiz
Response of the Pacific coast wireworm, <i>Limonius canus</i> LeConte, after to insecticide treated seeds in soil	Chandra Moffat, Wim van Herk, Bob Vernon and Chantelle Harding
Sickness induction and recovery of the Pacific coast wireworm, <i>Limonius canus</i> LeConte, after exposure to insecticide treated seeds	Wim van Herk and Bob Vernon
The life cycle of an invasive spider species: contending with the natives and other invaders	Samantha Vibert and Maxence Salomon Simon Fraser University
Breeding behaviour of jumping spiders in the wild	Gwylim Blackburn University of British Columbia
Life history tradeoffs in the malaria vector <i>Anopheles gambiae</i>	Kelly Walker and Bernard Roitberg Simon Fraser University
Mosquito foraging decisions under different physiological conditions	Brian Ma and Bernard Roitberg Simon Fraser University
Antennal arista apomorphies: a touchy, feely talk?	John Swann

Speakers that presented at the ESBC AGM October 13, 2006.	
Presentation	Authors
Beetles pining for lodgepole homes	Alex Chubaty, Bernard Roitberg and Chao Li
The life history of a secondary bark beetle and interactions with endemic mountain pine beetles	Greg Smith, Allan Carroll and Stephan Lindgren University of Northern British Columbia
Impacts of <i>Formica aserva</i> colonies on the carabid community: preliminary results from an introduction experiment	Duncan McColl and Staffan Lindgren University of Northern British Columbia
Induced preference, reproductive performance and adaptive divergence in parasitoids	Lee Henry, Bernard Roitberg and David Gillespie Simon Fraser University
A retrospective analysis of classical biological control release against cabbage seedpod weevil, <i>Ceutorhynchus obstrictus</i>	David Gillespie, P.G.Mason, L.M. Dodsall, P.Bouchard and G.A.P. Gibson
How prey defenses and cues influence prey foraging by a true omnivore	Tim Hazard, David Gillespie and Bernard Roitberg Simon Fraser University



Student Award Recipients

One **2006 ESBC Travel Scholarship** was awarded to Claudia Copley, University of Victoria. Claudia used the award to travel to Montreal and present a poster at the Canadian Entomological Society AGM. Claudia's MSc project is titled **Phylogenetic analysis of North American *Cybaeus* spp. (Araneae: Cybaeidae) utilizing morphological and molecular characteristics**. The abstract from her poster is as follows:



Claudia enjoying the view from a water-taxi, cruising up Bute Inlet this past summer.

Cybaeus is the largest genus in the family Cybaeidae and contains some of the most common spider species encountered in the forests of western North America. However, it has been surprisingly understudied from phylogenetic perspective. Due to a lack of other distinguishing characteristics, identification of members of the genus *Cybaeus* is based almost exclusively on genital morphology, the established method used to differentiate spider species. Unpublished systematic work has placed sixty-one North American species of *Cybaeus* (including descriptions of thirty-three new species) into eight species groups. As an independent test of hypothesized *Cybaeus* species group designations and relationships, we will use

molecular phylogenetic analysis of a portion of the mitochondrial cytochrome c oxidase I (COI) gene. Genetic data will be drawn from various members of the Holarctic “*tetricus*” (*C.tetricus*, *C.eutypus*, and *C.morosus*) and “*angustiarum*”: species groups (*C.angustiarum*, *C.signifer*, *C.reticulatus*) as well as from some members of the Nearctic species groups (“*adenes*”, “*consocius*”, “*aspenicolens*”, “*septatus*”, “*devius*”, “*tardatus*”). Morphological data will be gathered through specimen examinations and from existing data.

The second **ESBC travel scholarship** was awarded to Gwylim Blackburn, University of British Columbia Department of Zoology. Gwylim also received the **Harold Madsen Award** sponsored by **Phero Tech Inc.** for best PhD presentation. Gwylim's presentation was titled *Breeding behaviour of jumping spiders in the wild*.

We don't have a photograph of Gwylim or Tim, but we will seek to find one for the next Boreus issue.

Tim Hazard, Simon Fraser University, was the recipient of the **James Grant Award** sponsored by **North Okanagan Naturalists Club** for best MSc presentation. Tim's presentation was titled *How prey defenses and cues influence prey foraging by a true omnivore*.



Aquatic Entomology Symposium October 14, 2006

The Aquatic Entomology Symposium brought together experts from western Canada, who represented academia, the government, and private industry, to present on current topics. This unique location provided an opportunity for some outdoor time during breaks: a walk on a nature trail, a visit to the nature house, and a ‘pond poke’ at lunchtime. Once again, Karen Needham did an outstanding job of organizing both the symposium and great line-up of fabulous speakers.



Presentation Title	Author
Water beetles (Coleoptera: Dytiscidae) south to north in Manitoba.	Rob Roughley University of Manitoba, Winnipeg
Preparations for the arrival of West Nile Virus – is BC ready?	Michael Jackson Culex Environmental Ltd., Vancouver
Waiter, there’s a wasp in my water! A survey of the aquatic Hymenoptera of the world.	Andrew Bennett, Canadian National Collection of Insects, Ottawa
Entomology in environmental consulting: the role of invertebrates in EAs and ERAs.	Lynn Westcott Golder Associates Ltd., Castlegar
Water bug ecology.	Geoff Scudder UBC Department of Zoology, Vancouver
A new species and genus of crawling water beetle (Coleoptera: Haliplidae) from China.	Rex Kenner UBC Department of Zoology, Vancouver
Ten years after: history and current status of the 1992-1997 biological control releases of <i>Galerucella</i> beetles to control purple loosestrife, <i>Lythrum salicaria</i> , in Ontario.	Jim Corrigan BC Ministry of Forests, Kalamalka Seed Orchards, Vernon
Marine forensic arthropodology: the use of a baited camera to study carrion decomposition in the Saanich Inlet.	Gail Anderson Simon Fraser University School of Criminology, Burnaby

Upcoming Events



Meloid beetle at White Lake, near Penticton

The Entomological Society of British Columbia was approached to support a bid to bring the 2012 International Congress of Entomology to San Diego. The ESBC Executive supports the application, and our President, Karen Needham wrote a letter on the Society's behalf. Below is a copy of the letter.



Entomological Society of British Columbia

31 August 2006

To Whom It May Concern:

On behalf of the Entomological Society of British Columbia, I am writing in support of the bid to bring the 2012 International Congress of Entomology to San Diego, California, USA.

The ICE has not been held in North America for nearly twenty years (Vancouver 1988) and the USA has not hosted this important event for three decades (Washington DC 1976). Therefore, bringing it to this part of the world again is timely. San Diego is a picturesque, accessible, and entomologically interesting location. With an active and committed group of western North American entomological societies behind the bid, able to lend support throughout the planning process, and San Diego as the venue, the 2012 Congress is sure to be a success.

Although the ESBC supports the bid, the Members of the Society and the Executive assume no financial responsibility for debts or losses associated with the 2012 ICE meeting.

Sincerely,
Karen Needham, President, ESBC

Do you have an entomological event that you would like posted in Boreus? Send us your announcement by May 15 and we will post it in the June issue.

Upcoming meetings and conferences

1. Entomological Society of America Branch Meetings
 - a. Meeting of the Southwestern Branch of the Entomological Society of America February 19 - 22, 2007 in Corpus Christi, Texas
 - b. Meeting of the Southeastern Branch of the Entomological Society of America March 4 - 7, 2007 in Knoxville, Tennessee
<http://n-fl-bugs.ifas.ufl.edu/SEB/>
 - c. Meeting of the Eastern Branch of the Entomological Society of America March 18 - 20, 2007 in Harrisburg, Pennsylvania
<http://www.ento.vt.edu/EBESA/esaeb.html>
 - d. Meeting of the North Central Branch of the Entomological Society of America March 25 - 28, 2007 in Winnipeg, Manitoba, Canada
http://esa.ent.iastate.edu/2007_winnipeg/meeting
 - e. Meeting of the Pacific Branch of the Entomological Society of America March 25 - 28, 2007 in Portland, Oregon
<http://oregonstate.edu/pbesa/>
2. 15th Annual Nebraska Urban Pest Management Conference January 23 - 24, 2007 in Lincoln, Nebraska
<http://entomology.unl.edu/urbanent/UPMbrochure2007.pdf>
3. *XXIII International Congress of Entomology* July 6 - 11, 2008 in Durban, South Africa
<http://www.ice2008.org.za/default.asp>
4. Joint meeting of the Entomological Society of Canada and the Entomological Society of Saskatchewan
30 September - 3 October 2007 Delta Bessborough Hotel, Saskatoon, Saskatchewan
<http://www.deltahotels.com/hotels/hotels.php?hotelId=8>
Theme - Insects: Microscale Subjects for Megascale Research

Bugs and Beers

Bugs and Beers was off to a fun start this past year. At times, it was just I, but I can always find amusement in the scenery, so come and join me at a local establishment for a few beers (I actually don't really drink beer but I will do it in the name of good entomological discussion). If you can't join me, let me know where you meet and I will post it in the next Boreus issue. This is meant to be an informal setting for amateurs, enthusiasts, and professionals to meet and talk bugs. Come out and meet other entomologists!

Tuesday January 16, 2007 6:30 pm	Spinnaker's Brew Pub 308 Catherine Street, Victoria, BC http://www.spinnakers.com/brewpub/index.htm Phone 1-877-838-2739
Wednesday February 21, 2007 6:30 pm	Planet Earth Espresso & Deli 6336-A Vedder Road, downtown Chilliwack This local café makes the most fabulous deserts and has great coffee!
Thursday March 15, 2007 6:30 pm	The Foggy Dew Irish Pub 405 North Road, Coquitlam
Thursday April 19, 2007 6:30 pm	The Orange Room 620 Sixth Street, New Westminster, 604-520-6464 www.theorangeroom.ca
Thursday May 10, 2007 6:30 pm	The Fort Pub and Grill Langley, BC
Thursday June 14, 2007 6:30pm	The Dream Café, 67 Front Street, Penticton Telephone : 1-250-490-9012 This fabulous café brings together food and music that makes you feel like you are on vacation. The beer and the great atmosphere will make for an enjoyable evening. http://www.thedreamcafe.ca/
Wednesday August 21, 2007 6:30 pm	Alexander's Beach Pub 12408 Kal Lake Road, Vernon



New and Upcoming Publications


Gilbert Waldbauer Publications Gilbert Waldbauer retired in 1995 after a distinguished career as Professor of Entomology at the University of Illinois. His research interests were widespread, including syrphids (flower flies), mimicry, and a 15-year study of *Cecropia* moths. Since his retirement he has been writing books for the general public—seven so far—in order to share his love and fascination for insects. Six of these books are briefly cover here. All his books share a central message of the importance of insects and their place in the biosphere, along with some basic biology and ecology, generally woven around some unifying theme. These are not books that deal directly with the vast numbers and diversity of insects. Instead, they address specifics of behaviour and other adaptations to their environments.

Do you have a favourite book that you would like others to know about? Old or new publications, submit your review to Boreus.

If you have occasion to deal with the public and want to impress upon them the importance of insects and the study of entomology, these books are full of well thought out examples to cite. If you have friends that show an interest in insects, these books will be an excellent introduction. They are not beginners books, Waldbauer does not “dumb down” the discussions or avoid scientific terms or names but they should be easily read and understood by most educated people.

The first of his post retirement books, *Insects through the Seasons* (Harvard 1996), is loosely built around the life cycle of the *Cecropia* moth. This book is, however, far from just an account of the biology of these moths—it is a wide-ranging, very readable discussion of insects, their ecology, and the scientists who study them. It deals with all the various aspects of life that insects must cope with in order to survive and reproduce.

His second book, *The Birder's Bug Book* (Harvard 1998) sets the style for all the later books in having a more focused theme—in this case the interaction of birds and insects. Everyone will immediately think of insects as food for birds but there are many more interactions. These range from dealing with parasites to insects providing protection for birds. If you are a birder and want to know more about the interactions of birds and insects or if you just want to defend insects as equally (we all know that they are actually more interesting) interesting to your birding friends, this book will provide you with many fascinating examples.



In *Millions of Monarchs, Bunches of Beetles: How Bugs Find Strength in Numbers* (Harvard 2000), Waldbauer deals with the various advantages non-social insects gain from aggregation: defense against enemies, coping with weather, finding and subduing food, and finding mates. Some of the tactics employed by these insects will impress readers with how deeply natural selection can fine-tune a trait.

What Good are Bugs? Insects in the Web of Life (Harvard 2003) is a well researched discussion of the importance of insects. We all know many arguments and examples of the value of insects but this book will probably introduce you to some of which you hadn't thought. Waldbauer categorizes the "good" roles of insects under the broad themes: helping plants, helping animals, limiting population growth and "cleaning up". Each of these themes is divided into more specific topics to each of which he devotes a chapter. This book treats insects in a more generic way than some of his others to keep the focus on their ecosystem services.

In the provocatively titled *Insights from Insects: What Bad Bugs can Teach Us* (Prometheus Books 2005), Waldbauer focuses on "pest" species. Though insects truly warranting the term represent just a miniscule fraction of known species, they cause enormous losses and can have dire consequences in terms of human and animal health. On the other hand, because of the need to mitigate their effects, they are among the best-studied insects. This is a fascinating book about the battle between humans and insects. One will come away from it with a new respect for the "enemy" and a better understanding of the need for detailed research into all aspects of their existence. In my opinion this just may be his best book to date—highly recommended.

In his latest book, *A Walk Around the Pond, Insects in and over Water* (Harvard 2006), Waldbauer deals in his usual easy-to-read, informative style with my favorite group of insects, those that spend at least part of their lives in water. I came to my current passion for insects relatively late in life. Waldbauer started young, in part with an aquarium which he populated with organisms from a local pond. These included dragonfly larvae, which proceeded to eat his fish. Although aquatic insects were not a focus of his later research, he clearly has a special interest and immense knowledge of this varied group.

Although life evolved in water, the ancestral insects were terrestrial and all groups of aquatic insects are only secondarily adapted to life in water. The aquatic environment presents a number of challenges—obtaining oxygen immediately comes to mind—but even dealing with the air-water interface can present a major challenge (or opportunity) to a small insect. Waldbauer begins the book by introducing the various groups of aquatic insects, from mayflies to

true flies. Almost every group has managed to enter the water in some way: there are aquatic moths, wasps, and even spiders (yes, I know these are not insects). He then introduces some of the “aquatic” habitats insects have managed to colonize, from crude-oil ponds to brine ponds, the water in carnivorous pitcher plants, hot springs, even the ocean. Although I was taught that insects have invaded only the surface of the ocean, one species of midge, called the one-hour midge, lives on the bottom just above the extreme low tide mark. Its life cycle has to be in complete synchrony with the tides, as it must emerge, mate and oviposit during a brief period during the full or new moon when the lowest tide exposes its habitat to the air. In another fascinating ecosystem, tropical katydids lay eggs in the internodes of bamboo. The slots cut by their ovipositors give other insects, including mosquitoes and a species of damselfly, access to the water secreted there by the plant.

Apart from the challenge of obtaining oxygen, to which Waldbauer devotes an entire chapter, aquatic insects have to deal with the same problems terrestrial insects do: finding food, avoiding being eaten, coping with climate cycles, and reproducing. Waldbauer explains some of the ways aquatic insects accomplish these tasks through specific examples, bringing in personal stories and essential biology as needed to make the discussions both easily accessible and widely applicable.

All these books are worth a read and with the wide range of themes there should be at least one that will be of particular interest to any reader. These books are also well supplied with references so that one can dig deeper into points of particular interest. If you are not acquainted with these books, you should check them out.

Rex D. Kenner, Curator
Cowan Vertebrate Museum, University of British Columbia
kenner@zoology.ubc.ca



Rex is an avid entomologist, with a specific interest in aquatic beetles. In recent years, Rex has become a self-taught expert in this area of entomology. Rex (centre) on a Saturna Island insect foray in 2004.

Notes from the Field: Bute Inlet trip

This past summer a group of entomologists traveled to Bute Inlet, in an effort to survey a part of the BC coast that has not been inventoried before. One of trip challenges was to try and capture the elusive Black Petaltail, *Tanypteryx hagenii*, a dragonfly for which there are only seven records in the province. Throughout the week we all had moments where we thought that we had seen the dragonfly cruise by our net, always out of the range of capture. But on the last day, Patrick, Darren and I were walking along a dusty logging road, when Patrick exclaimed “there it is!!” I went in for the capture with a very large net, and Darren carefully extracted the specimen from the tangles of the mesh to display the eighth specimen and record for the province.



Left to right: Patrick Carrier; Claudia Copley; Dave Holden; Darren Copley; Robb Bennett; Jennifer Heron; Sharon and Chuck (camp operators); Rob Cannings and Louise Blight.

Interesting Entomological Information

Websites

- **Invertebrate Conservation News**
<http://www.amentsoc.org/icn.htm>
- **Buglife, the Invertebrate Conservation Trust** www.buglife.org.uk

Books

- **Butterflies of British Columbia** by John Acorn, illustrated by Ian Sheldon, Lone Pine Publications. This field guide was published in June 2006, and is a great little guide to the butterflies of our province.
- **Insects: Their Natural History and Diversity: with a photographic guide to insects of eastern North America** by Stephen A. Marshall
- **Insects of the Pacific Northwest** by Peter Haggard and Judy Haggard. Timber Press Field Guide

Events

- **National Insect Week – United Kingdom**
<http://www.nationalinsectweek.co.uk/resources.htm>

Longevity of Entomologists

From the “Newsletter for Senior Entomologists”, Ed. Becker, February 2005
Longevity of Entomologists in Canada:

80-85 years = 22

86-90 years = 13

91-95 years = 10

96-102 years = 7

Married for 50-65 years = 43 couples

Longevity table for Professionals from Carl Swanson, 1973. Natural History of Man, 2nd Edition.

Top of the list (longest lived professionals): "Conductors of Classical Music"

Second "Entomologists"

The bottom of the list: "Hereditary Monarchs of Europe".

In Richard Ring's Gold Metal Address, he quoted some great statistics regarding the longevity of Entomologists.

An added bonus to an already great profession!

Notes and News



Robb Bennett has accepted the prestigious position of Editor-in-chief with the Canadian Entomological Society. Robb thus decided to resign as ESBC Secretary/Treasurer this December. For the past 12 years, Robb has served on the ESBC Executive, keeping the Society's financials together, recording and tracking all meetings, elections and business, as well as editorial support to both the journal and *Boreus*. Robb has leveraged resources from the BC Ministry of Forests, to assist with mail outs and administrative support. Robb has also taken the financial aspects of the Society to a sound financial situation. Lorraine Maclaughlan will be assuming the Secretary/Treasurer responsibilities this upcoming January, with a transition of duties throughout the fall. Lorraine works for the BC Ministry of Forests as the Southern Interior Regional Forest Entomologist, in Kamloops.



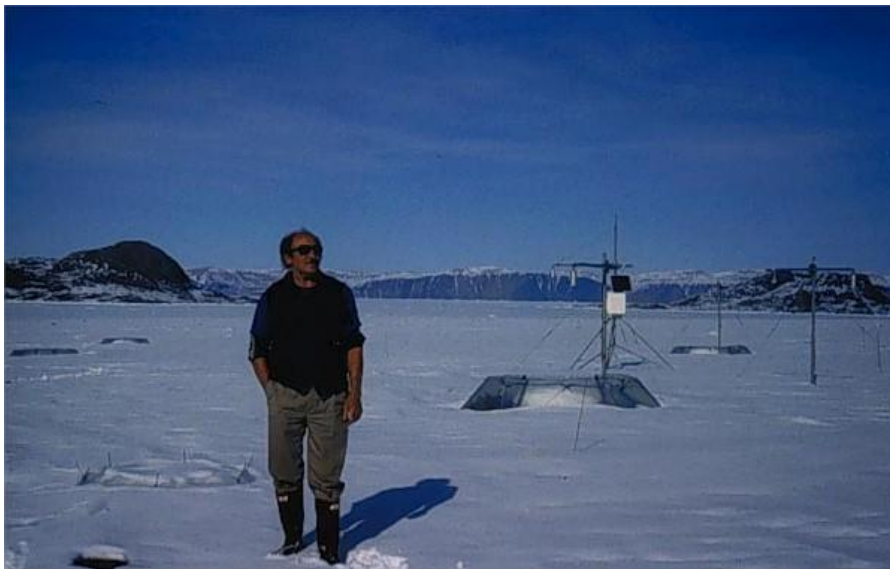
ESC Gold Medal Awarded to Richard Ring

The 2006 recipient of the Entomological Society of Canada's Gold Medal for Outstanding Achievement in Canadian Entomology is Dr. Richard A. Ring. This award is presented in recognition of his broad legacy to entomology in Canada, particularly in research on the physiology and ecology of arctic insects and biodiversity, and extensive involvement in graduate education and scientific leadership.

Born in 1938 in a small farm outside Glasgow, Scotland, Richard was educated in Glasgow schools and completed a B.Sc. (Hons.) in Zoology in 1961 and a Ph.D. in Entomology in 1965, both at Glasgow University. Richard began his academic career as Assistant Professor in Zoology at the University of British Columbia, followed by an NSERC Postdoctoral Fellowship at the Entomology Research Institute, Agriculture Canada, in Ottawa (1965-1966). He joined the

Department of Biology at the University of Victoria as Assistant Professor in 1966, and remained there throughout his career, rising to the rank of Professor in 1988. In 2004, Richard Ring retired from a long and distinguished career at the University of Victoria as Professor Emeritus.

Richard is a world leader in insect cold-hardiness research and has been one of the most active Canadian entomologists researching insect physiology and ecology in Polar Regions, especially in the Canadian arctic. Working on bark beetles, he was among the first to discover that a single species can contain multiple cryoprotective compounds which protect the insect from damage at low temperatures. Early on he realized the significance of connections between adaptations for cold hardiness and for resisting dehydration, as well as the role played by trehalose, an important molecule for protection against both cold and desiccation. Richard's contributions to these areas of study remain relevant for



understanding insect cold hardiness, overwintering strategies and adaptation to extreme environments, including not only the arctic and Antarctic but also saline habitats. Despite his focus on ecophysiology, Richard has pursued research in other areas including the use of native chironomids and caddis larvae in the control of Eurasian watermilfoil, the effects of Btk on non-target Lepidoptera, and, more recently, the fauna of ancient rainforest canopies, conservation and climate

change.

Richard has published over 65 articles in peer-reviewed journals, 9 book chapters and numerous symposium proceedings and many others. In 2003, a symposium, "Adaptations and Constraints: a Symposium in Honour of Richard Ring", was organized at the annual meeting of the ESC in recognition of Richard's research achievements.

Over 38 years, Richard taught over 16,000 biology and entomology students! In his teaching he is renowned for his enthusiasm and accessibility. His 24 M.Sc. and 6 Ph.D. students have gone on to successful careers and he has guided dozens of undergraduates. In 2003 he was awarded the University of Victoria's prestigious Science Faculty Teaching Award for educational excellence. As the first entomologist at the University of Victoria, Richard originally developed all the entomology courses. He co-coordinated the large first-year Biology course and was the driving force behind the Biology Co-operative Education Program.



Richard was President of the Entomological Society of Canada (1991-1992) and was elected Fellow in 2001. He was and is President of the Entomological Society of BC (1971, 1983, 2006) and was granted a lifetime membership in 2003. He is a member of the Entomological Society of America, the Canadian Society of Zoologists, the Royal Entomological Society of London, the Society for Cryobiology and many others. He is well known as a reviewer for primary journals, was editor of the Journal of the Entomological Society of B.C. (1988-1994) and is currently Editor-

in-Chief of The Canadian Entomologist (2004-2006). He was a valued member of the Scientific Committee of the Biological Survey of Canada (1990-2002).

These outstanding contributions to entomological research in the arctic, to the education of entomologists and biologists, and to various scientific institutions and entomological organizations, make Richard Ring eminently qualified to receive the Society's Gold Medal.

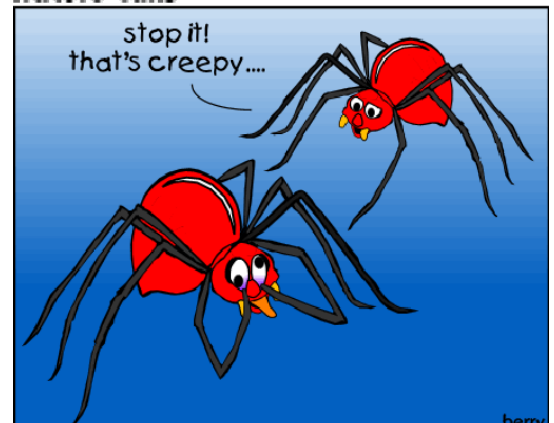
Written by Rob Cannings, and used with permission from Entomological Society of Canada. Photographs from Dr. Ring's website at <http://web.uvic.ca/~canopy/arctic.html>

Entomological Humour

Do you have artistic talent? Do you have a good entomological joke? Send your ideas to the Boreus editor for the June 2007 issue

Berry Wijdeven is a Species At Risk Biologist for the BC Ministry of Environment in Queen Charlotte/Haida Gwaii. Berry has had his work published in McLeans, the National Post, Vancouver Sun and numerous other weekly publications. Among his artistic talents, he creates the weekly comic *Nature Calls*. Register for Berry's weekly email comics by sending him an email at Berry.Wijdeven@gov.bc.ca

nature calls



nature calls



Requests for information on the Monarch Butterfly in Canada

Dear Fellow Entomologist:

The **Journey North Program** has been following the spring migration of monarch butterflies into eastern North America, and the data has been used by about 450,000 students in Canada and the U.S.A. to study animal migration through "first sightings" (www.learner.org/jnorth). Migrating monarchs have now been spotted in 7 Canadian Provinces. I understand that monarchs, possibly from California, are seen every year in the Okanogan Valley and Fraser River area, and I am asking you to please send me reports of any sighting of adult monarch butterflies, eggs or larva. Please also spread the word to internet-based discussion groups, to field naturalists or others who might be in a position to share their observations.

Here is a link to my report and two pages of pictures of over-wintering monarchs in Mexico that I took during my March 2006 trip to Mexico:
<http://www.learner.org/jnorth/tm/monarch/DavisDonMX031706.html>

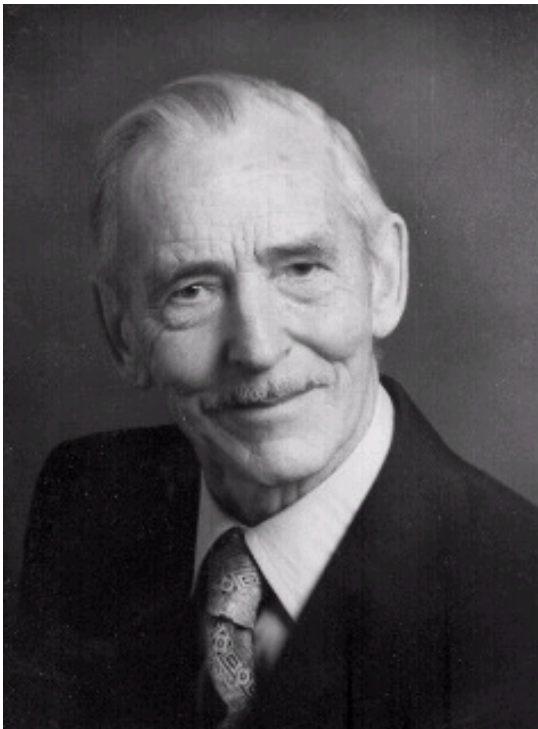
Thank you
Don Davis, Toronto, Ontario
Member Toronto Entomologists' Association



In Memory


John Douglas "Jack" Gregson
June 17, 1910 - October 29, 2006
written by Jack's son, John A. Gregson

Jack Gregson, only child of Arthur Douglas and Ettie Elizabeth Gregson passed away peacefully in his home with his family by his side.



Jack was born in Blackfalds, Alberta and attended a one-room school to Grade 7. The family moved to Courtenay when he was in his teens. There his interest in 'bugs' established his lifelong association with nature. He was a world-renowned scientist, a naturalist, artist, poet, musician, author, photographer, gardener, traveler and most of all, a family man. He eschewed the trappings of the rich and famous and reveled in the bounties of nature.

He received an Honours Bachelor of Arts degree from UBC in 1934, a Masters Degree in Medical Entomology from the University of Alberta in 1936 and was honoured with a Doctorate of Letters from the UCC in 2000. Jack moved to Kamloops in 1936 where he wooed and wed Barbara Claxton, his wife and soul mate of sixty-seven years. It was there he embarked on a career with the Canada Department of Agriculture to study insects injurious to human and animal health. He specialized in the study of wood ticks and was recognized globally for his scientific contributions. This resulted in many trips throughout the world, often accompanied by Barbara and whetted their appetite for further travels after retirement. The author of more than 80 scientific publications, he named three species of ticks, discovered and had a stonefly (*Capnia gregsoni*) named for him, as well as a new species of tick, *Ixodes (Pholeoixodes) gregsoni*. They managed as well to raise five children and create their lovely heritage garden, 'Grenehalgbe', which became a source of enjoyment for many beside themselves.



Jack was a true naturalist and environmentalist. In 1936 he established the Kamloops Outdoor Club, better to share his appreciation of nature with others. The highlight of many years was the week long 'Alpine Trip' to some of the remote areas of the province that he recorded on film and in paint. His patience was rewarded with many exquisite photos, or 'slides' that captured the highlights of his trips to the mountains and around the world. Some of these he transferred, with 'artistic license', to canvas. He said "I've moved trees, and sometimes mountains, but always have had a high regard for Nature's beauty and composition." Some of these paintings have hung in the Vancouver Art Gallery and the Kamloops Art Gallery, but for the most part are still in the family home(s).

During his 70 years in Kamloops, Jack was an outspoken environmental advocate. He is also credited with founding the Kamloops and District Garden Club (1950) and the Kamloops Naturalist Club (1970). He received many awards for his efforts but his greatest reward was the recognition of and appreciation shown for the environment that his efforts generated. Among them was the Waterway Park at McArthur Island, the Butterfly Gardens at Riverside Park and McArthur Island, and the bicycle /footpath east of his property on the South Thompson River. He received the Grassroots Award for beautification and protection of Kamloops' natural landscape, BC Federation of Naturalists Club service award, the Kobayashi Award for best-landscaped property and was made a Freeman of the City of Kamloops in 1990.

Jack loved music and played the cornet in high school. He was an accomplished harmonica player, but any thoughts of a professional career were thwarted by his non-union status and his performance on the CBC show '*Klahanee*' was short lived. He was a romantic and never failed to remember Barbara's birthday and their anniversaries with special poems he wrote for the occasions. His own birthday was always recognized with a home baked strawberry shortcake and an ever expanding coterie of family and friends.

Jack and Barbara's urge to travel waned as they grew older and their interests centered around garden, family and friends. He was very proud of the oasis they created out of a patch of tumbleweed acquired in 1946. He is survived by his devoted wife of 67 years, children John, Sandra (Jud Thompson), Petrina (Sandy Crane), Sally (David Foster) and Ian (Jenny), nine grandchildren and four great grandchildren. A celebration of Jack's life took place at St. Paul's Anglican Cathedral on Thursday, November 2nd, 2006.