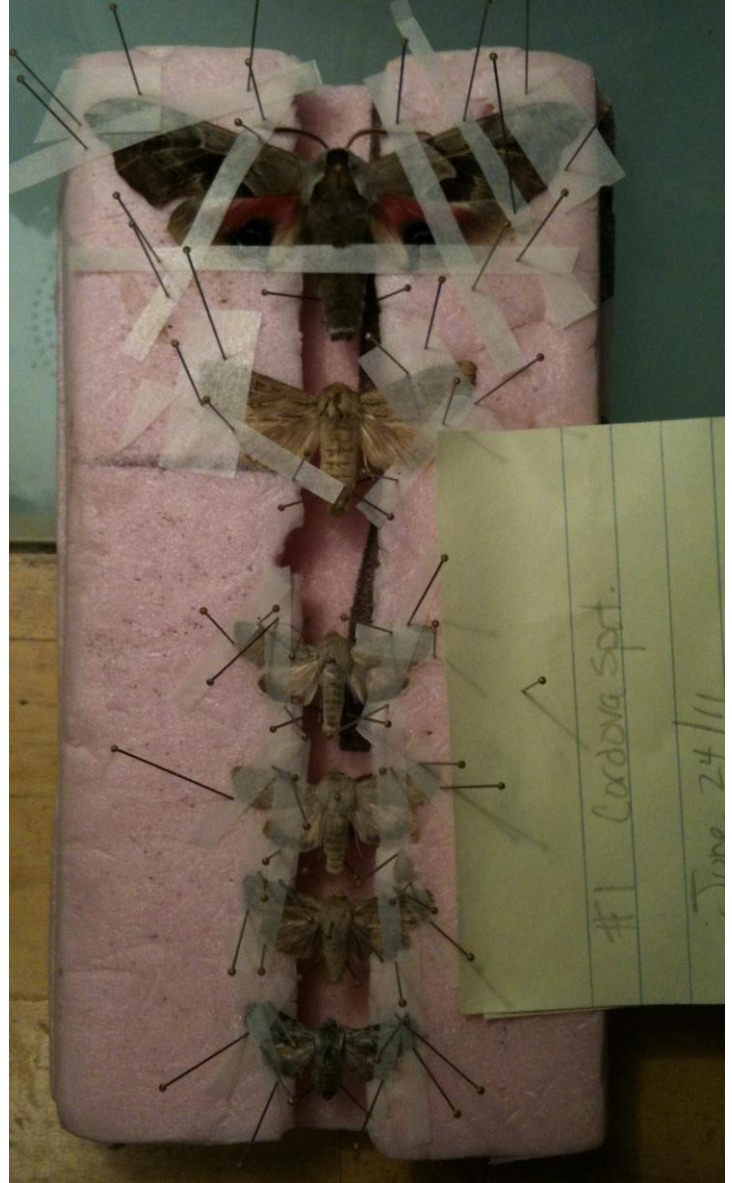


Boreus



Newsletter of the Entomological Society of British Columbia



June 2011
Volume 31 (1)



Table of Contents

The Executive 4

Publications of ESBC 5

Journal of the Entomological Society of British Columbia 5

Boreus..... 5

Membership..... 6

Society Business..... 7

Announcement and call for papers for ESBC Annual General Meeting 2011 7

Call for nominations for the ESBC Executive 7

Big changes at JESBC 7

Student Affairs 8

Graduate Student Director’s Note 8

Entomological Society of British Columbia 9

Student Scholarships and Awards 2011..... 9

Announcements..... 10

Spencer Entomological Collection Photo Gallery now online! 10

The ‘Arthropods of Canadian Grasslands’ Series..... 11

5TH Whistler BioBlitz 12

Supporting Butterfly Conservation in British Columbia: The BC Butterfly Atlas 13

Leftover merchandise from ESC JAM in Vancouver 14

Calendar of events 17

Articles 19

Checklist of the Bumble Bees of British Columbia 19

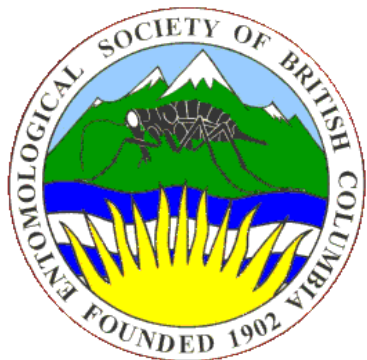
The European Fire Ant (*Myrmica rubra*) in British Columbia 22

ESBC Executive contact information..... 24

Photographers in this issue..... 25



The Executive



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

President	Rob McGregor Douglas College, New Westminster
President-Elect	Ward Strong, B.C. Ministry of Forests & Range, Vernon
Past-President	Tom Lowery Agriculture and Agri-Food Canada, Agassiz
Secretary	Leo Rankin B.C. Ministry Forests & Range, Williams Lake
Treasurer	Lorraine Maclauchlan B.C. Ministry of Forests & Range, Kamloops
Editorial Committee (Journal)	Dezene Huber (Editor) University of Northern B.C., Prince George Hugh Barclay (Assistant Editor) Canadian Forest Service, Victoria Robert Cannings, Royal B.C. Museum, Victoria Lorraine Maclauchlan B.C. Ministry Forests & Range, Kamloops Bob Lalonde University of British Columbia – Okanagan, Kelowna Steve Perlman University of Victoria, Victoria Leland Humble Canadian Forest Service, Victoria
Editors (Boreus)	Jennifer Heron B.C. Ministry of Environment, Vancouver Jeremy deWaard Royal B.C. Museum, Victoria
Directors	Naomi Delury Agriculture and Agri-Food Canada, Summerland Dezene Huber University of Northern B.C., Prince George Jim Corrigan B.C. Ministry Forests & Range, Vernon Arthur Stock B.C. Forest Service, Nelson Tracy Hueppelsheuser B.C. Ministry of Agriculture and Lands, Abbotsford
Student Representative	Chandra Moffat UBC - Okanagan, Kelowna
Honorary Auditor	Tom Lowery Agriculture and Agri-Food Canada, Agassiz
Regional Director of National Society	Bill Riel Canadian Forest Service, Victoria
Web Page Editor	Bill Riel Canadian Forest Service, Victoria
Web Page	http://www.sfu.ca/biology/ESBC/



Publications of ESBC



Journal of the Entomological Society of British Columbia

The Journal of the Entomological Society of B.C. 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://www.sfu.ca/biology/ESBC/>), and should be sent to the Editor, Dr. Dezene Huber, University of Northern British Columbia, Prince George, 250-960-5119, email: huber@unbc.ca

The deadline for submissions to be included in the 2011 issue is September 1, 2011.



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 co-editors Jennifer Heron (Jennifer.Heron@gov.bc.ca) and Jeremy deWaard (Jeremy.deWaard@gmail.com), or the new dedicated Boreus email account (editorboreus@gmail.com).

The deadline for submissions to be included in the December issue is November 15, 2011.



Membership

Membership of the Entomological Society of B.C. 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 Treasurer, Dr. Lorraine Maclauchlan, B.C. Ministry of Forests, 515 Columbia Street, Kamloops, B.C., 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 B.C. 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. Credit Ward Strong and Robert A. Cannings.

Cover Photographs: Photographs by Jennifer Heron.



A few (thousand) springtails (*Podura aquatica*), photograph by Kevin Buxton.



Society Business

Announcement and call for papers for ESBC Annual General Meeting 2011

Mark your calendars! The Annual General Meeting (AGM) of ESBC will be held in Abbotsford, BC on Friday October 14th and Saturday October 15th 2011. Contributed papers will be presented at the AGM on October 14th at the University of the Fraser Valley, 33844 King Road, Abbotsford, BC. A symposium and tour (tentative topic: Invasion Biology) will occur on October 15th also in Abbotsford (location to be determined).

We are seeking oral presentations for the AGM. Contributions are welcome from members of ESBC, students and other interested entomologists. Please encourage your students to submit papers - Cash prizes will be awarded for best BSc, MSc & PhD student presentations. Oral presentations will be scheduled for 15 minutes each including time for questions.

If you are interested in presenting at the ESBC AGM, please send a title and short abstract (50 words or less) via email to Rob McGregor at mcgregorr@douglas.bc.ca by September 14, 2011.

Call for nominations for the ESBC Executive

Nominations are sought for election to the ESBC Executive at our AGM on October 14, 2011. At this year's AGM, we will require nominations for President-elect, Treasurer and two Directors. Please submit nominations to Rob McGregor, ESBC President and Chair of the Nominations Committee by September 1, 2011.

Big changes at JESBC

We are delighted to announce that Dezene Huber of UNBC has accepted the position of Editor of the Journal of the Entomological Society of British Columbia. Many thanks are due to Hugh Barclay for his excellent work as Editor over the last three years. Hugh will remain as Assistant Editor of JESBC.

We have also established a new and improved Editorial Board for the journal that includes returning and new members: Rob Cannings, Lorraine Maclauchlan, Bob Lalonde, Steve Perlman, Lee Humble and Rob McGregor will sit on the Editorial Board for 2011.

The Editors and Editorial Board and the ESBC Executive are currently in the process of restructuring the journal. Effective immediately, submissions to JESBC will be accepted continuously throughout the year for a planned online delivery format. Please send your papers to the Editor, Dezene Huber, at huber@unbc.ca.



Student Affairs

Graduate Student Director's Note

Chandra Moffat
Graduate Student Director, ESBC

Happy summer everyone! Whether you are out in the field, in the lab or just working away at your computer I hope you are enjoying some sunny weather and the long days! I am spending my first summer working indoors in a long time. It feels strange to watch the days tick by and have the year not marked by the start of the field season! Instead, I am marking time by the progress of my garden (and of my thesis of course)!

I hope to see lots of undergraduate and graduate students attend and present at the Annual General Meeting of the ESBC this fall, so make sure you submit an abstract! I have exciting news to announce... at the Spring Executive Meeting of the ESBC, the Executive unanimously voted to create a new undergraduate prize for the best undergraduate talk given at the AGM! This is in addition to the MSc and PhD prizes awarded, so now students at all levels have the chance to compete for an award! Please see the scholarship and award information here in *Boreus* for more details.



Joint Annual Meeting of the Entomological Society of Canada (ESC) and the Acadian Entomological Society

If you are planning on or thinking of attending the national meeting this year, the meeting will be held in Halifax from 6 to 9 November 2011. The deadline to apply for the ESC Ed Becker Conference Travel Award, the abstract submission deadline for the President's Prize Competitions, and the application/abstract submission deadline for the Graduate Student Symposium are all 1 August 2011. All of the information about the meeting can be found at <http://www.acadianes.ca/2011jam/> and more information on awards offered by the ESC can be found at <http://www.esc-sec.ca/studentawards.html>. That's all I have for now – please feel free to contact me anytime!

- Chandra
chandra.moffat@gmail.com



Entomological Society of British Columbia Student Scholarships and Awards 2011

Student Oral Presentation Awards

The Entomological Society of British Columbia announces the annual Student Oral Presentation Awards for the 2011 Annual General Meeting (AGM). This year, awards will be made for the best student oral presentations in BSc, MSc and PhD categories. For consideration, students must be registered at a post-secondary institution and at the AGM. Cash prizes will be awarded at the AGM.

Graduate Student Scholarship Competition

The Entomological Society of British Columbia announces the annual Graduate Student Scholarship competition. Two \$400 scholarships (one M.Sc., one Ph.D.) are awarded each year at the Annual General Meeting. Scholarships must be used to defray 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 single PDF file containing:

- Name and location of conference to be attended
- Title and abstract of research to be presented
- Current CV

Abstracts should be submitted double spaced, in 12 point font, and with a maximum of 200 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 should be sent to the ESBC Secretary, Leo Rankin, at Leo.Rankin@gov.bc.ca. Deadline for receipt of applications for 2011 Scholarships is 16 September 2011.



Announcements

Spencer Entomological Collection Photo Gallery now online!

Two and a half years of fabulous images, shot by Don Griffiths at the Beaty Biodiversity Museum, are now online. Link is below:

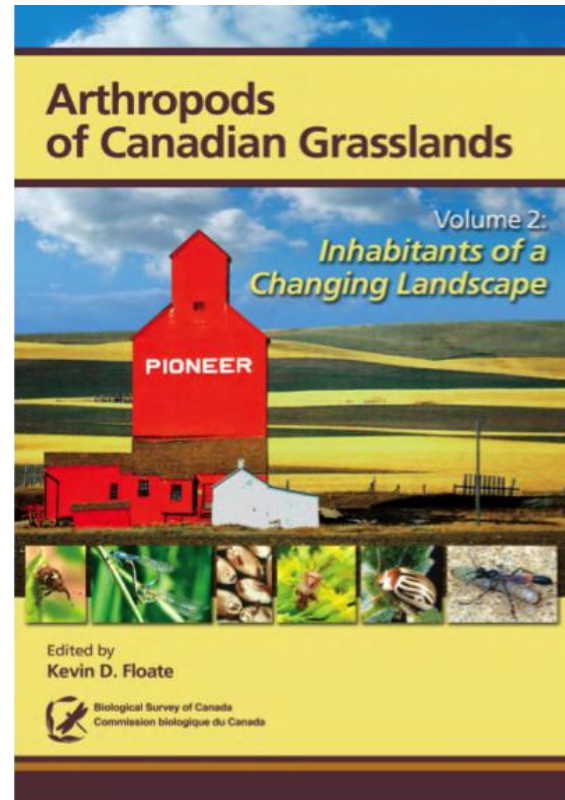
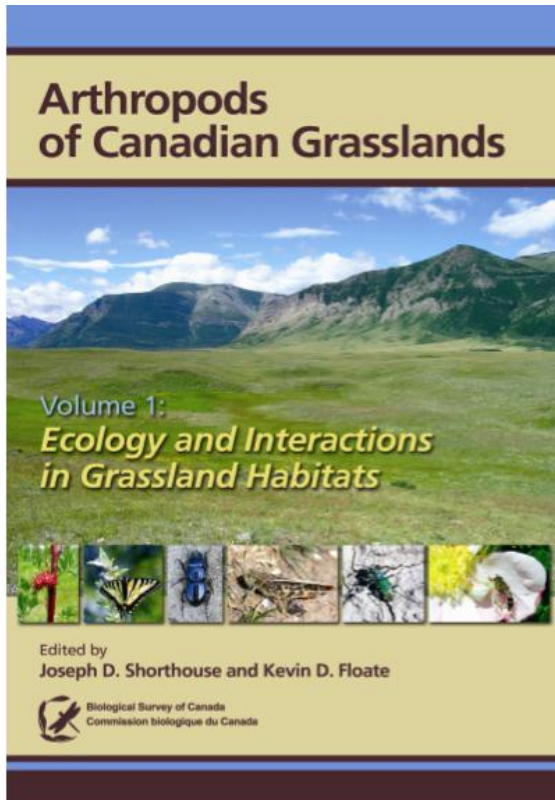
http://www.biodiversity.ubc.ca/entomology_photos/



Welcome to the photo gallery of the Spencer Entomological Collection at the Beaty Biodiversity Museum.



The 'Arthropods of Canadian Grasslands' Series



Congratulations to those contributing to Volumes 1 & 2 of *Arthropods of Canadian Grasslands*! Published in 2010 and 2011 by the Biological Survey of Canada, these richly illustrated books examine native and altered grasslands as habitat for Canada's arthropods. Both books are **free** online at: <http://www.biology.ualberta.ca/bsc/english/grasslands.htm>

Volume 1 (358 pp, 17 contributors): AAFC authors – Lethbridge (Kevin Floate, Derrick Kanashiro, Sean McGinn); Ottawa (Valerie Behan-Pelletier, 'Andy' Hamilton).

Volume 2 (371 pp, 26 contributors): AAFC authors – Beaverlodge (Jennifer Otani); Lethbridge (Héctor Cárcamo, Rosemarie De Clerck-Floate, Kevin Floate, Tim Lysyk, Walter Willms); Ottawa (Paul Catling, Peter Hall, Don Lafontaine); Saskatoon (Julie Soroka); Winnipeg (Colin Demianyk, Paul Fields, Noel White).



5TH Whistler BioBlitz

Alpha Lake Park

August 6-7th, 2011

Calling all entomologists! Whistler BioBlitz is fast approaching and we're always looking for more scientists knowledgeable about arthropods. Over 40 scientists from a wide variety of specialties are already confirmed, and the only thing lacking is ***more entomologists!***

It won't surprise ESBC members that insects remain the least known species group in Whistler. Last year we made big strides thanks to additions from specialists like Claudia and Darren Copley, Robb Bennett, James Miskelly, Jordan Rosenfeld, Christine Olsen, Mike Toochin, Dennis Knopp and Rick and Libby Avis. As a result of their efforts, more than 100 new species were documented for the first time in Whistler.

This year we'd like to focus even more on invertebrates, and insects in particular, so we'd like to send a special invitation to all ESBCers. We want you to come and will do everything possible to make it happen. We supply accommodation at the Legends Hotel, some meals (mostly pizza), and a snappy t-shirt.

Fun is our organizing principle. We'll again be at the south (Creekside) end of town, which allows lots of opportunities for participants to kibitz with each other. As in past years, the event includes:

- Arrival Friday night with beer and pizza reception
- Official BioBlitz count from noon to noon Saturday/Sunday
- Surveys in wetland, forested, and alpine areas
- Public event Saturday evening, outside if weather permits
- Announcement of final tally at noon on Sunday, followed by more pizza.

We hope you can join us! For more information or to confirm your attendance, please contact Bob Brett (bob@snowlineresearch.ca; 604-932-8900). For updates see: www.whistlerbioblitz.ca.



Supporting Butterfly Conservation in British Columbia: The BC Butterfly Atlas

Project Purpose: To promote the conservation of butterflies and to increase our knowledge of the distribution and abundance of butterflies throughout BC by developing a citizen-based butterfly survey program and atlas.

Project Goals:

- Increase public interest in butterflies and involvement in butterfly watching;
- Promote butterfly populations as a useful conservation monitoring tool;
- Increase information on the distribution, abundance, and habitat relationships of butterflies in British Columbia; and
- Increase support and resources for the conservation of butterflies and their habitats.

Project Details:

Mapping biodiversity is a growing stewardship activity around the world. The information collected is invaluable for the conservation of species and their habitat. Following on the recent success of the BC Breeding Bird Atlas (www.birdatlas.bc.ca) and butterfly atlasing projects in other jurisdictions (e.g., Butterflies of the New Millennium (UK) – <http://www.butterfly-conservation.org>, Maritimes Butterfly Atlas – <http://www.accdc.com/butterflyatlas.html>, and atlases in several US states), we are seeking to initiate a citizen-based survey and atlasing program for butterflies in British Columbia. Despite their important ecological role and value as habitat indicators, butterflies in BC lack adequate information on their distribution, abundance, and habitat relationships needed for effective conservation. An atlasing project would seek to fill this information gap while increasing public awareness and support for butterfly conservation.

Like the BC Breeding Bird Atlas, butterfly atlasing would be conducted by volunteers using a set methodology within 10 km x 10 km grid squares covering the whole province. Participants would also be encouraged to report observations of butterflies from throughout the province. Methods used will seek to balance participation with the needs of rigorous identification and documentation standards (such as identifying photos and voucher specimens). As our province is large compared to the number of potential observers, we hope to develop methods that can engage participants with a range of skills and abilities.

Why a BC Butterfly Atlas?

Butterflies are important pollinators, key indicators of ecosystem health and change (such as large-scale responses to climate change), and increasingly endangered due to habitat loss or change. In BC, 26% of the known butterfly taxa (79 of 305 taxa) are currently classified at risk of extinction (BC Conservation Data Centre, 2010). Other more common butterflies have particular associations with sensitive natural landscapes (e.g., grasslands, riparian ecosystems) or ecosystem types (e.g., Garry oak ecosystem). Yet, despite their ecological importance, information on the distribution of butterfly species in BC is incomplete and inconsistent. Existing records are becoming out-of-date and recent small-scale surveys for rare species have shown that many existing populations have yet to be documented, even in relatively well-surveyed areas. Moreover, specific butterfly-habitat relationships (such as relationships with larval host plants) are not well-documented (Guppy, 2008). Search efforts to collect this information are sporadic and often depend on expensive surveys by professional biologists or committed local naturalists. Without detailed information on the locations of butterfly populations and their habitat, they cannot be effectively conserved.

The BC Butterfly Atlas will provide an effective and financially-efficient structure to increase and coordinate data collection efforts among organizations and agencies, encourage grassroots involvement by a broad range of participants, and educate the general public as well as landowners and decision-makers about the importance of butterflies. These are important precursors towards a long-term goal of increased butterfly habitat conservation in BC. Butterflies are also charismatic creatures that are an important flagship for other forms of biodiversity and a useful tool to increase public interest in environmental stewardship and habitat conservation generally.



Project Objectives

The BC Butterfly Atlas' objectives are: (1) to increase public interest in butterflies and involvement in butterfly watching; (2) to increase information on the distribution, abundance, and habitat relationships of butterflies in British Columbia; (3) to actively educate British Columbians on the importance of conservation of butterflies and their habitat; and (4) to create strategic partnerships to increase butterfly and butterfly habitat conservation in BC. Data collected will serve many uses, such as prioritizing species and landscapes for conservation efforts, building support for butterfly habitat conservation, and as a basis for tracking trends in butterfly populations over time.

Work Plan

In 2011, we propose to complete the following tasks:

- Form a steering committee and advisory group for the project;
- Recruit partners, sponsors, and potential observers;
- Develop and test a detailed methodology and other resources for monitoring (including protocols, data collection forms, and maps); and
- Set up a basic informational website that will provide a foundation for a future interactive web atlas.

In 2012, it is our hope the atlassing program will be piloted in one or more regions of BC followed by eventual implementation province-wide and data collected over several years.

Project Contact:

Patrick Lilley Raincoast Applied Ecology #102-1661 West 2nd Avenue, Vancouver, BC V6J 1H3 Phone: 604-742-9890 Fax: 604-742-1339 Email: patrick@raincoastappliedecology.ca

References

- B.C. Conservation Data Centre. 2010. BC Species & Ecosystems Explorer [www.env.gov.bc.ca/atrisk/toolintro.html].
 B.C. Conservation Data Centre, B.C. Ministry of Environment, Victoria. [November 1, 2010]
- Guppy, C. 2008. Introduction to the Butterflies of British Columbia. In: Klinkenberg, Brian. (Editor) 2010. E-Fauna BC: Electronic Atlas of the Fauna of British Columbia [www.efauna.bc.ca]. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. [November 1, 2010]

Leftover merchandise from ESC JAM in Vancouver

While supplies last:

Prints = \$80

Mugs = \$10 each or 3 for \$25

T-shirts (just XL, XXL) = \$10 each or 3 for \$25

Please contact Lorrain Maclauchlan at Lorrain.Maclauchlan@gov.bc.ca



Sweep of the Net

A miscellany of recent entomological media caught on the internet.

Video podcast shot at the "Insect Compactor" at the American Museum of Natural History in New York describing springtime insects:

<http://www.sciencefriday.com/program/archives/201104015>

Audio podcast on the diversity of insect life in Costa Rica:

<http://education.eol.org/podcast/insects>

Columnist Pete Heule's entomological podcasts called 'Critters n' Bugs' can be found here:

<http://www.cbc.ca/radioactive/columnists/bugs/>

Audio podcast from CBC's 'Quirks and Quarks' about the ongoing warfare between stingless bees and small hive beetles in Australia:

http://cbc.ca/quirks/media/2010-2011/qq-2011-06-11_03.mp3

Article on the recently announced '5,000 Insect Genome Project': <http://www.genomeweb.com/sequencing/initiative-launched-sequence-5000-insects>

And even nominate a species for sequencing here:

<http://arthropodgenomes.org/wiki/i5K>

Video podcast discussing how fire ants form rafts to survive floods and how caterpillars are inspiring novel soft-bodied robots:

<http://www.sciencefriday.com/program/archives/201104294>

Article and photo gallery in Time magazine about Cicada ice cream and other 'ento-culinary' treats:

<http://www.time.com/time/nation/article/0,8599,2078830,00.html>

An interesting blog on all subjects bug aptly named the 'Bug Girl's Blog':

<http://membracid.wordpress.com/>

A 'Science Daily' news story on the impact of mountain pine beetle on snow accumulation and melt:

<http://www.sciencedaily.com/releases/2011/06/110608131334.htm>

Audio podcast from CBC's 'Quirks and Quarks' about the recent discovery of giant hummingbird-sized ants of the Eocene by Paleo-entomologist Dr. Bruce Archibald from Simon Fraser University:

http://cbc.ca/quirks/media/2010-2011/qq-2011-05-07_03.mp3

An RSS feed to get the latest insect science news sent directly to you:

http://www.sciencedaily.com/rss/plants_animals/insects_and_butterflies.xml



Audio podcast on the diversity of insect life in Costa Rica:

<http://education.eol.org/podcast/insects>

Audio podcast on the Red-Shouldered Soapberry Bug (*Jadera haematoloma*):

<http://education.eol.org/podcast/red-shouldered-soapberry-bug>

Several Twitter feeds with an entomology theme: @AboutInsects @ARCropInsects @InsectsArthropo @bug_girl @cuckoowasp @helpthebees @BugladySuzanne

Blog on Scientific American about the seeing leaf-cutter ants through the eyes of an artist:

<http://www.scientificamerican.com/blog/post.cfm?id=ant-thrills-seeing-leafcutter-ants-2011-06-10>

Article on the record-breaking song of the lesser water boatman, *Micronecta scholtzi*:

<http://blogs.discovermagazine.com/notrocketscience/2011/06/17/tiny-water-insect-makes-record-breaking-song-with-his-penis/>

Insect photographs resized for use as wallpaper:

http://fineartphotography.imgur.com/my_macro_world_insect_portraits

Facebook page for the Entomological Society of Canada student group:

<http://www.facebook.com/group.php?gid=13552445022>



Calendar of events

JUNE 2011						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

June 19 – Beaty Biodiversity Museum Wetlands Outdoor Festival Day

JULY 2011						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

July 31 to Aug. 3 – The 82nd Rocky Mountain Conference of Entomologists will be held at the Cathedral Ridge Conference & Retreat Centre in Woodland Park, Colorado.

AUGUST 2011						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Aug. 5 to 6 – 5th Annual Whistler BioBlitz at Alpha Lake Park



SEPTEMBER 2011

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

OCTOBER 2011

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Oct. 14 to 15 – ESBC Annual General Meeting at the University of the Fraser Valley, Abbotsford campus

Oct. 25 to 27 – 2011 Salish Sea Ecosystem Conference will be held Sheraton Wall Centre in Vancouver, BC

Nov. 6 to 9 – The 2011 ESC Annual Joint Meeting will be hosted by the Acadian Entomological Society and held at the Westin Nova Scotian Hotel in downtown Halifax, NS

Nov. 13 to 16 – ESA's Annual Meeting will be held at the Reno-Sparks Convention Center in Reno, Nevada.

Nov. 15 – Submissions for the December edition of Boreus due

NOVEMBER 2011

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			



Articles

Checklist of the Bumble Bees of British Columbia

Rob Cannings, Royal BC Museum

Family Apidae: Subfamily Apinae: Tribe Bombini, Genus *Bombus*

Bumble bees are large or medium sized bees conspicuously marked with yellow and black hairs, sometimes with additional red or white hairs. Most of the species collect pollen but those in the subgenus *Psithyrus* live as social parasites in the nests of other *Bombus* species. The genus is distributed in North and South America, in Eurasia and from the Philippines to western Indonesia. Some species have been introduced to other places, such as New Zealand and Australia.

The following list of 32 known British Columbia species is assembled from various publications and museum collections. The list will probably be changed as more specimens are examined and should be considered preliminary. The taxonomy used is that of Natural History Museum (London) (Williams 2008), a fine, up-to-date systematic summary of the bumblebees of the world, although I have maintained *B. occidentalis* separate from *B. terricola*. *Psithyrus* has long been considered a genus separate from *Bombus* but most authorities now place it as a subgenus in *Bombus*; the four species in BC are listed separately for convenience. Except for *Psithyrus*, none of the subgenera often used in *Bombus* classification are included in this list. A few synonyms are listed (indents) to indicate the fate of some familiar names, especially those noted in Buckell (1951), Milliron (1973a, b) and Hurd (1979).

Bombus impatiens Cresson, a common species from eastern North America, is included here. It has been imported into BC as a pollinator in greenhouses since 1999. Some queens have evidently escaped and the species may be established in the Lower Mainland.

Bombus appositus Cresson
Bombus auricomus (Robertson)
Bombus balteatus Dahlbom
 B. kirbyellus Curtis
Bombus bifarius Cresson
Bombus centralis Cresson
Bombus fervidus (Fabricius)
 B. californicus Smith
Bombus flavifrons Cresson
 B. pleuralis Nylander
Bombus frigidus Smith



Bombus griseocollis (Degeer)
Bombus huntii Greene
Bombus hyperboreus Schonherr
Bombus impatiens Cresson (introduced and possibly established)
Bombus lapponicus (Fabricius)
 B. sylvicola Kirby
Bombus lucorum (Linnaeus)
Bombus melanopygus Nylander
 B. edwardsii Cresson
Bombus mixtus Cresson
Bombus morrisoni Cresson
Bombus neoboreus Sladen
 B. strenuus Cresson
Bombus nevadensis Cresson
Bombus occidentalis Greene
Bombus perplexus Cresson
Bombus polaris Curtis
Bombus rufocinctus Cresson
Bombus sitkensis Nylander
Bombus ternarius Say
Bombus terricola Kirby
Bombus vagans Smith
Bombus vosnesenskii Radoszkowski

Bombus (Psithyrus) ashtoni (Cresson)
Bombus (Psithyrus) fernaldae Franklin
Bombus (Psithyrus) insularis (Smith)
Bombus (Psithyrus) suckleyi Greene

References

- Barnewall, E. 2006. The bumblebees (Hymenoptera: Apidae) in British Columbia: Royal British Columbia Museum Entomology Collection. Unpublished report for the University of Victoria Biology Co-operative program. Royal BC Museum, Victoria.
- Buckell, E. R. 1951. Records of Bees from British Columbia: Bombidae. Proceedings of the Entomological Society of British Columbia 47: 7-23.
- Hurd, P.D. Jr. 1979. Superfamily Apoidea. Pp 1741-2209 *in* K.V. Krombein, P.D. Hurd, Jr., D.R. Smith and B.D. Burks (eds.). Catalogue of Hymenoptera in North America north of Mexico. Vol 2. Apocrita (Aculeata). Smithsonian Institution Press, Washington DC.



- Milliron, H. E. 1973a. A monograph of the Western Hemisphere bumblebees (Hymenoptera: Apidae; Bombinae), II. The genus *Megabombus*, subgenus *Megabombus*. *Memoirs of the Entomological Society of Canada* 89.
- Milliron, H. E. 1973b. A monograph of the Western Hemisphere bumblebees (Hymenoptera: Apidae; Bombinae), III. The genus *Pyrobombus*, subgenus *Cullumanobombus*. *Memoirs of the Entomological Society of Canada* 91.
- Stephen, W. P. 1957. Bumble bees of western America (Hymenoptera: Apoidea). *Technical Bulletin, Oregon State College, Agricultural Experiment Station* 40.
- Thorp, R. W. 1962. Notes on the distributions of some bumblebees of western North America (Hymenoptera: Apidae). *Pan-Pacific Entomologist* 38: 21-28.
- Williams, P. 2008. *Bombus* bumble bees of the world. Natural History Museum. Available at <http://www.nhm.ac.uk/research-curation/research/projects/bombus/>



The European Fire Ant (*Myrmica rubra*) in British Columbia

Rob Higgins, Thompson Rivers University, Williams Lake

This past winter, specimens of ants causing concern in a community in North Vancouver were passed along to me by Agriculture Canada. They were the European fire ant (*Myrmica rubra*), the first identification of this species in BC for which locality information was available (these ants were identified a few years ago but their origin was lost in the chain of handling). Since identifying these ants in North Vancouver I have also found these ants in a community garden in Burnaby and suspect these ants are established in other locations in southwestern BC.

The European fire ant (*Myrmica rubra*) is native to Europe and western Asia (Radchenko and Elmes 2010). It was introduced to eastern North America in the Boston area around 1900 (Grodén et al. 2005) and while first reported in Quebec in 1915, was not considered problematic for decades (Wetterer and Radchenko 2011). In the last few decades, though, this ant has begun to expand its range, moving into southern Ontario and more recently into the Maritimes. In the last ten years records have greatly increased in eastern N. America (Wetterer and Radchenko 2011). The new records for BC are the only Canadian records west of southern Ontario and the first records above 49° N.

The concern with this ant is its tendency to nest in high densities in raised garden beds and lawns, swarm when disturbed and readily sting. No other ant in BC has these combined characteristics. Mature nests are often comprised of approximately 1000 workers with dozens of queens. The sting has been described as equivalent to stinging nettle (Radchenko and Elmes 2010), a description consistent with my experience. Some people, however, react more seriously, developing significant edema requiring medical attention. One such case, in which an arm became seriously edematous, has already occurred in Burnaby. I am unaware of any report of an allergic reaction that would be life-threatening.

Discussions with homeowners in N. Vancouver suggest this ant was introduced into their city block possibly 12 years ago, when a homeowner at one end of the block may have brought them in with landscaping plants (they often nest in root wads in loose soil). This is consistent with descriptions of infestations in eastern Canada (Grodén et al. 2005). Since this introduction, the colonies have been spreading throughout the neighbouring yards, and are now common over approximately 2/3rds of the city block (up to 4 nests m²). Unlike *Myrmica rubra* in its native habitat, nuptial flights do not appear to occur in its introduced range, although Barry Hicks has recently described male based flights occurring in Newfoundland (Hicks 2012 [early online]), supporting the hypothesis that most queens are mating within or near their natal nest. Thus, this polygynous species becomes polydomous, when one or more queens walk to a nearby nesting site (probably less than 1 m) with recruited workers from an established nest. They do not appear, fortunately, to often cross paved city streets (Susan Horton, M.Sc. student, Saint Mary's University, Halifax, pers. comm.).



In the east it is believed that landscaping nurseries are hubs for the distribution of this ant. They prefer soil (often loose) with high moisture making lawns with tall grass or sites underneath lawn clutter ideal. To date, efforts at control in eastern N. America have been unsuccessful. Where they have spread into recreational areas such as campgrounds, efforts are made to limit local infestations, but no infestation has been successfully eradicated. This, however, may be a consequence of the extent of the infestations prior to control effort. Efforts are now underway to attempt to eradicate these ants in the two locations in which they have been identified in BC.

For more information please see: http://www.tru.ca/faculty/rhiggins/myrmica_rubra_index.htm

References

Groden E, Drummond FA, Garnas J, Francoeur A. 2005. Distribution of an invasive ant, *Myrmica rubra* (Hymenoptera: Formicidae), in Maine. *Journal of Economic Entomology*. 98:1774-1784.

Hicks B. 2012. How does *Myrmica rubra* (Hymenoptera: Formicidae) disperse in its invasive range? Record of make-only swarming flights from Newfoundland. *Myrmecological News*. 16:31-34.

Radchenko AG, Elmes GW. 2010. *Myrmica* ants of the Old World. *Fauna Mundi* 3:1-789.

Wetter JK, Radchenko AG. 2011. Worldwide spread of the ruby ant, *Myrmica rubra* (Hymenoptera: Formicidae). *Myrmecological News*. 14:87-96.

Figures





ESBC Executive contact information

President

• Rob McGregor • Douglas College Institute of Urban Ecology, New Westminster Telephone: 604-527-5522 Email: mcgregorr@douglas.bc.ca

President-elect

• Ward Strong • B.C. Ministry of Forests, Vernon Telephone: 250-260-4763 Email: Ward.Strong@gov.bc.ca

Past President

• Tom Lowery • Agriculture and Agri-Food Canada, Summerland Telephone: 250-404-3324 Email: loweryt@agr.gc.ca

Secretary

• Leo Rankin • B.C. Ministry of Forests and Range, Williams Lake Telephone: 250 398-4352 Email: Leo.Rankin@gov.bc.ca

Treasurer

• Lorraine Maclauchlan • B.C. Ministry of Forests, Kamloops Telephone: 250-828-4179 Email: Lorraine.Maclauchlan@gov.bc.ca

Editorial Committee (Journal)

• Dezene Huber • University of Northern British Columbia, Prince George Telephone: 250-960-5119 Email: huber@unbc.ca • Hugh Barclay • Canadian Forest Service, Victoria Telephone: 250-363-3338 E-mail: hbarclay@nrcan-rncan.gc.ca • Robert Cannings • Royal British Columbia Museum, Victoria Telephone: 250 356-8242 E-mail: RCannings@royalBCmuseum.bc.ca • Lorraine Maclauchlan • B.C. Ministry of Forests, Kamloops, Telephone: 250-828-4179 Email: Lorraine.Maclauchlan@gov.bc.ca • Bob Lalonde • University of British Columbia – Okanagan, Kelowna Telephone: 250-807-8764 Email: robert.lalonde@ubc.ca • Steve Perlman • University of Victoria, Victoria Telephone: 250-721-6319 Email: stevep@uvic.ca • Leland Humble • Canadian Forest Service, Victoria Telephone: 250-298-2352 E-mail: Leland.Humble@NRCAN-RNCan.gc.ca

Boreus Co-Editors



- Jennifer Heron • B.C. Ministry of Environment, Vancouver Telephone: 604-222-6759 Email: Jennifer.Heron@gov.bc.ca
- Jeremy deWaard • Royal British Columbia Museum, Victoria Telephone: 778-228-8903 Email: Jeremy.deWaard@gmail.com

Directors

- Dezene Huber (1st) • University of Northern British Columbia, Prince George Telephone: 250-960-5119 Email: huber@unbc.ca
- Tracy Hueppelsheuser • (1st) B.C. Ministry of Agriculture, Abbotsford Telephone: 604-556-3031 Email: Tracy.Hueppelsheuser@gov.bc.ca
- Art Stock(1st) B.C. Ministry of Forests, Nelson Telephone: 250-825-1188 Email: Arthur.Stock@gov.bc.ca
- Jim Corrigan (2nd) B.C. Ministry of Forests, Vernon Telephone: 250 549-5696 Email: Jim.Corrigan@gov.bc.ca
- Naomi Delury (2nd) Agriculture and Agri-Food Canada, Summerland Email: ndelury@shaw.ca

Student Representative

- Chandra Moffat • University of British Columbia Okanagan, Kelowna Email: chandra.moffat@gmail.com

Honorary Auditor

- Tom Lowery • Agriculture and Agri-Food Canada, Summerland Telephone: 250-404-3324 Email: loweryt@agr.gc.ca

Regional Director of National Society

- Bill Riel • Natural Resources Canada – Pacific Forestry Centre, Victoria Telephone: 250-363-6032 E-mail: briel@nrca-nrcan.gc.ca

Webpage Editor

- Bill Riel • Natural Resources Canada – Pacific Forestry Centre, Victoria Telephone: 250-363-6032 E-mail: briel@nrca-nrcan.gc.ca

Photographers in this issue

Kevin Buxton

Chandra Moffat

Rob Higgins

Jenny Heron