



BOREUS

NEWSLETTER OF THE ENTOMOLOGICAL SOCIETY

OF BRITISH COLUMBIA

Volume 20, Number 1, July 1999

CONTENTS:

NOTICES AND MESSAGES

- President's Corner
- Graduate Scholarships
- First Notice IOBC, IPM in Glasshouses
- Notice of AGM
- Message from the Journal Editor

SCIENTIFIC NOTE

- Observation of fishing behavior in *Gnamptogenys tortuolosa* (Hymenoptera: Formicidae).

B. Aucone and R.W. Hartdegen

REPORT

- Butterflies and Moths of the Chilcotin District, BC. *A. Fischer, J. Shepard and C. Guppy*

PROFILES

- Jeff Jarrett

REFLECTIONS ON OUR PAST

- George J. Spencer Memorial Lecture - Revisited
- Our Dusty Past - Vancouver Daily Province, July 31, 1947

NEWS AND BOOK CORNER

- Monographs on *Moths of America North of Mexico*
- *Monarchs*, by Alex Shoumatoff

SOCIETY BUSINESS

- Publications of the ESBC
-

PUBLICATIONS

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 have 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 should be sent to the Editor, Dr. Dave Raworth, Agriculture and Agri-Food Canada, Pacific Agri-Food Research Centre, PO Box 1000, Agassiz, BC, V0M 1A0, Canada: tel 604-796-2221; fax 604-796-0359; e-mail raworth@em.agr.ca

The deadline for submissions to be included in the 2000 issue is **September 1, 2000**.

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 emphasising the Society's affairs, *Boreus* provides members with a forum for their views and news of British Columbia entomology. Please send correspondence concerning *Boreus* to the Editor, Philip A. Jones, P.O. Box 1943, Vernon, BC V1T 8Z7 Canada; tel 250-549-1596; e-mail philip_jones@telus.net.

The deadline for submissions to be included in the December 2000 issue is **November 10, 2000**.

Membership

of the Entomological Society of BC is available to anyone interested in entomology. Annual dues are Can\$20 (regular member) or Can\$10 (student member). Members receive the Journal, *Boreus* and Occasional Papers (the latter published intermittently).

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

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

NOTICES AND MESSAGES

President's Corner

President's Message: "Get Involved"

I want to use this opportunity to elicit involvement from the membership. When we have participation and direction from the members the ESBC executive is better able to move the Society ahead.

There are several avenues that are open to make your views known. Have you visited the website at <http://www.harbour.com/commorgs/ESBC/index.html>? What else would you like to see included on the website? Have you contacted your executive with ideas, interesting entomological quips, quotes and concerns? We're only a phone call or email away. Have you thought about contributing to Boreus or to the Journal? Have you extolled the virtues of the society to your best friend? How about participating in the executive and standing for election? We **need** to see **many more people** being nominated for the executive to avoid the election by acclamation. The oldest and most important means of sharing information is by word of mouth as it provides the opportunity for a two-way exchange of information. We want to hear from you!

We all have a role to play in disseminating information about the significance of insects, their interactions with the environment, their spectacular diversity, and impacts from the backyard to the park. This summer an insect display will open at Goldstream Provincial Park on Vancouver Island. The object of this display is to generate enthusiasm for insects, provide factual information about insects and their roles in Goldstream's ecosystem, and to 'introduce' the ESBC. Extension and demonstration is very important- wouldn't it be nice if this type of display had nodes throughout the province-or at least where several members live?

I encourage all members and friends to attend the upcoming Annual General Meeting to be held in Victoria on October 20, 2000. This would be the perfect setting for the exchange of ideas and entomological discussions. I hope to see you at the meeting and perhaps also hear from you before the AGM.

With regards,

Neville Winchester

President, ESBC; Biology Department, University Victoria, P.O. Box 3020 Victoria, B.C. V8W 3N5

Ph. (250) 721-7100

Email: tundrast@uvvm.uvic.ca

ANNOUNCEMENT

ENTOMOLOGICAL SOCIETY OF BRITISH COLUMBIA

3rd ANNUAL GRADUATE STUDENT

SCHOLARSHIPS

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

For consideration, applicants must be:

- Graduate students and ESBC members in good standing

and must submit:

- name and locality of conference to be attended,
- title and abstract of research to be presented, and
- current CV

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

Deadline for receipt of applications for 2000 Scholarships is 31 August 2000. This year's Scholarships will be awarded at the ESBC AGM at the Pacific Forestry Centre, Victoria on Friday, October 20nd 2000. Send applications to:

Robb Bennett

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

or e-mail to: Robb.Bennett@gov.bc.ca

First Announcement - IOBC, IPM in Glasshouses

The IOBC, IPM in Glasshouses, West Palearctic and Nearctic working groups will meet jointly, on the 8, 9, 10 and 11 May, 2002, at the Laurel Point Inn, in Victoria, British Columbia, Canada. The meeting will feature 4 days of presentations and workshop discussions on Integrated Pest Management in Glasshouses, and will include a research tour of the dynamic glasshouse industry in southwestern British Columbia. The meeting will be restricted to 150 delegates, on a first-come, first-served basis. To be placed on a mailing list to receive further details, please contact: D.R. Gillespie, Pacific Agri-Food Research Centre, Agriculture and Agri-Food Canada, P.O. Box 1000, Agassiz, British Columbia, Canada. V0M 1A0.; fax (604) 796-0359, or email gillespied@em.agr.ca.

2000 ANNUAL GENERAL MEETING

CALL FOR PAPERS/PARTICIPATION

The 2000 ESBC AGM will be held at the Pacific Forest Centre, Victoria.

FRIDAY, 20 OCTOBER, 2000

Get enthusiastic and show your support for the Society by:

Presenting a paper or poster

Participating in the meeting

IMPORTANT: Please submit titles and abstracts for presentation to Neville Winchester by September 29th

QUESTIONS: Regarding locality and other meeting details should also be directed to Neville.

ABSTRACT: Fifty words, Journal of ESBC format, send an electronic copy to Neville.

REGISTRATION COST: \$20 regular member, \$10 student—payable at the door.

Dr. Neville Winchester ph: (250) 721-7100

Biology Department fax: (250) 721-7120

University of Victoria e-mail: tundrast@uvvm.uvic.ca

P.O. Box 3020

Victoria, B.C. V8W 3N5

A message from the Editor of the JESBC:

Three manuscripts have been submitted for publication in the Journal this year. If you have a manuscript you wish to submit, please send it to the Editor before 1 September. Manuscripts submitted in September will be considered, but time constraints become more difficult. After 1 October, chances of publication in December 2000 are slim.

David Raworth, Editor JESBC Tel: (604)796-2221 (local 213)

Pacific Agri-Food Research Centre Fax: (604)796-0359

P.O. Box 1000 - 6947 #7 Highway E-mail: raworthd@em.agr.ca

Agassiz, BC V0M 1A0

Canada

Erratum - JESBC

Correction to JESBC Vol. 96, with apologies from the Editor:

Naumann, K., W.B. Preston and G.L. Ayre. 1999. An annotated checklist of the ants (Hymenoptera: Formicidae) of British Columbia. Page 55, drawings for Figs. 10 and 11 should be transposed.

SCIENTIFIC NOTE

Observation of fishing behavior in *Gnamptogenys tortuolosa* (Hymenoptera: Formicidae)

Brian Aucone and Ruston W. Hartdegen, Dallas Zoo Department of Herpetology, 650 South R.L. Thornton Freeway, Dallas, Texas 75203, contact: rustonh@sprintmail.com.

From 10 January to 20 January 2000, we conducted a field survey of the local reptile and amphibian assemblage at the Madre Selva II Biological Research Station, Loreto, Peru (3°37.175 S, 72°14.873 W, error=13.5m). This reserve constitutes approximately 200 hectares of lowland tropical rainforest, including primary and secondary successional growth. The survey took place during the beginning of the rainy season, which lasts from late October to April. Our primary search area consisted of a single 900m long trail which transverses all habitat zones described. The trail was marked in 50 meter increments.

On 20 January 2000, at the 350 m mark of the trail, we noticed a trail of ants, *Gnamptogenys tortuolosa*, crossing a fallen log (45.72 cm diameter). This tree had four small irregularly shaped cavities filled with rain water, forming temporary pools. All four pools contained mosquito larvae in various stages of development as well as tadpoles of the poison arrow frog, *Epipedobates hahneli*. The largest pool which measured 55.88 X 15.25 X 11.43 cm was lined with leaf litter and debris. Upon closer inspection we observed one specimen of *G. tortuolosa* approach the water's edge, where upon it captured a mosquito pupae.

The genus *Gnamptogenys*, subfamily Ponerinae, contains approximately 100 species worldwide. According to Lattke's (1990, 1995) taxonomic revision, there are currently 76 New World species (within 6 groups). Little is known about this species ecology and natural history of *G. tortuolosa*. This species is known only from approximately 10 museum collections, all with origins centering around Amazonia.

Literature Cited

Lattke, J.E. 1995. Revision of the ant genus *Gnamptogenys* in the New World (Hymenoptera: Formicidae). *Journal of Hymenoptera Research* 4: 137-193.

Lattke, J.E. 1990. Revision del genero *Gnamptogenys* en Venezuela. *Acta Terramaris* 2: 1-48.

REPORT

Butterflies and Moths of the Chilcotin District, British Columbia

Fischer, Aud I., Jon H. Shepard and Crispin S. Guppy. 2000. Macrolepidoptera Inventory of the Chilcotin District. Report to the Ministry of Environment Lands and Parks (Wildlife Section in Williams Lake, and Conservation Data Centre in Victoria).

This study was undertaken to learn more of the distribution, status and habitat requirements of B.C. macrolepidoptera (butterflies and the larger moths), the group of insects given the highest priority by the BC Environment Conservation Center. The study was conducted in the Chilcotin District near Williams Lake and Riske Creek in central B.C. The study area contains a wide variety of habitats, including rare habitat types that elsewhere occur only in the Lillooet-Lytton area of the Fraser Canyon and, in some cases, the Southern Interior. Specimens were collected with light traps and by aerial net. The project was funded by Forest Renewal BC through the Victoria headquarters and Williams Lake regional offices of the Ministry of Environment, Lands and Parks.

A total of 538 species of macrolepidoptera were identified during the two years of the project, which is 96% of the estimated total number of species in the study area. There were 29,689 specimens collected, and 9,988 records of the number of specimens of each species captured on each date at each sample site. A list of the species recorded from the Chilcotin is provided, with a summary of provincial and global distributions. The habitats, at site series level as determined through terrestrial ecosystem mapping (TEM), are provided for each sample. A subset of the data was provided to the Ministry of Forests (Research, Williams Lake) for use in a Flamulated Owl study. A voucher collection of 2,526 moth and butterfly specimens was deposited in the Royal BC Museum.

There were 25 moth species that are rare in BC, with most known only from the Riske Creek area. They were assigned a conservation ranking from S1 to S3, depending on BC distribution, abundance near Riske Creek, and distribution outside BC. There are clear habitat associations for some of the species, with one provincially rare species (*Xestia substrigata*) being very abundant in three dry IDFxm Douglas-fir forest habitat types. This is the first information on the conservation status of moths in the Cariboo Forest Region, and includes the first information on habitat use by each species.

(slightly modified from the Abstract of the report, by Cris Guppy).

PROFILES

Jeff Jarrett

I stopped killing insects for fun, and started killing insects for research purposes, after taking Dr. Richard Rings entomology course at the University of Victoria in 1989. It was also then that I started to love these charismatic microfauna. Since then I've had a number of entomology related jobs. First of all as a work-study student in Victoria, I helped out with the Carmannah canopy research project headed by Dr. Winchester and Dr. Ring, collecting, sorting, and pinning insects. After graduating in 1991 with a biology degree, I then went to work for Agriculture Canada on their Asian Gypsy Moth eradication project. At feeling satisfied with eradicating the moth population on the lower mainland, I then moved back home to Alberta, where I landed a couple summer jobs in northern Alberta.

Working with Dr. David Langor from the Canadian Forest Service, in association with Western Canada Wilderness Committee, I spent two summers studying the insect biodiversity of old growth spruce stands along the Peace River, near Fort Vermilion. This research focused mainly on studying the canopy arthropods in these old growth spruce stands, using malaise and light traps suspended 25m in the canopy, but I also had time to study ground beetle (Coleoptera:Carabidae) communities in a number of old growth stands. In addition to my work at the Boreal Forest Research Station, I also worked part-time for the Diashowa-Marubeni International Ltd. owned High Level Forest Products, investigating woodborer problems at their sawmill yard in High Level.

I returned to BC in 1994 and was fortunate enough to meet up with Dr. Geoff Scudder who was looking for some help with his research in the South Okanagan grasslands. After almost three years of collecting, sorting, pinning, and identifying insects, I then decided to go back to school and get my masters degree in 1998.

My masters project involves measuring ground beetle communities in response to various forest harvesting practices in the IDF forests just north of Kamloops, at the Opax Mountain Silvicultural Systems Site. As part of my studies I also worked in the Spencer Entomological Museum reorganizing and identifying over 20,000 carabid specimens collected from BC over the past 80 years. From this work in the museum, and from Dr. Scudders work in cataloging the BC carabids from museums across Canada, we are in the process of publishing a paper on carabid beetles new to BC.

I hope to continue with my carabid research after graduating, doing systematics research if possible, but if not I'll always be around if somebody needs the odd carabid beetle identified.

Jeff Jarrett

Department of Zoology

University of BC

Vancouver, BC V6T-1Z4

REFLECTIONS ON OUR PAST

George J. Spencer Memorial Lecture - Revisited

Editor's Note: The following is the introduction by Robert Spencer Taylor, to the 33rd and last Spencer Memorial Lecture, presented in March, 1999 by Professor Geoff Scudder.

I'd like to welcome you all to thirty-third - and last - Spencer Memorial Lecture. My name is Robert Spencer Taylor. Professor George Spencer was my Grandfather.

The lecture series began in 1967, one year after his death. I have attended almost all of these annual lectures, and although the material was often beyond me I always came away feeling that some new window of understanding had been opened.

- The series was opened in 1967 by Professor Sir Vincent Wigglesworth, generally regarded as the father of insect physiology.
- In 1969, Professor Roeder described how a moth would execute an elegant ballet of avoidance upon detecting the sonar of an approaching bat.
- In 1971, Professor Dobzhansky lectured on the genetics of behavior in *Drosophila*. For several months after, I kept small jars of fruit flies. My most significant finding was that when I opened the lid of the jar to check on them, they escaped and colonized my bedroom.
- In 1983, Professor Gabriel Dover lectured on how random slippage in the DNA molecule could serve as a force for evolution. For someone quite comfortable with the idea that Darwin had neatly wrapped up evolutionary theory with the four words "Survival of the Fittest", the concept of additional mechanisms for change came as a considerable shock.
- And in 1993, Professor Wyatt reviewed his research into juvenile insect hormone. About fifteen minutes into the lecture I realized that this man's research had led to the development of a truly effective anti-flea spray. I have three dogs. I gave Professor Wyatt a standing O.

The power of scent to evoke a strong memory is well documented. The reverse can also be true, a memory being accompanied by an awareness of an associated scent. I was ten when Granddad Spencer died. In a kind of mental museum of Kodak Moments, my recollections of him take the form of fragmentary snapshots; a number of them so powerfully associated with a fragrance that it borders on synthesis. I'd like to briefly share a few of these memory snapshots with you.

CLICK. The slightly sweet smell of Chloroform rises from a brown killing bottle, into which my Grandfather is carefully transferring the catch from my butterfly net as we stand knee deep in meadow grass and wildflowers, the air hazy with drifting clouds of insects.

CLICK. The arid perfume of parched dryland bunchgrass surrounds us as he peers through a tiny brass triplex magnifier at a beetle in a flower pod on a sun-scorched hilltop trail overlooking Okanagan Lake

CLICK. Aromatic fumes from the paint-stained pot of linseed oil on the back of the workbench and the coppery smell of the 3-in-1 oil that he rubbed all his steel and iron tools with; Granddad perches on a stool in his basement workshop behind the grumbling old oil furnace, light diffusing through the tiny window as he fusses over a broken wooden toy.

CLICK. The air redolent with the smells of formaldehyde and balsam gum, Granddad hunches over his microscope in the entomology museum, surrounded by shelves overburdened with textbooks and specimen jars.

My brother and I would browse through the collections, opening drawer after drawer, sure that eventually we'd find where the empty drawers started.

As I said, this is the last Spencer Memorial lecture, and it is only fitting that it be given by his student, his friend, and his successor to the curatorship of the museum that bears his name. I would personally like to thank Geoff for his work facilitating these lectures over the years.

This afternoon, Geoff (Scudder) will speak to us on "Insects in Biodiversity Conservation; Some Perspectives from the South Okanagan". Given my Grandfather's love of the Okanagan drylands, this is an especially appropriate choice of topic.

Editor's Note: The above will introduce readers of the Newsletter to an eclectic assortment of papers and memorabilia from the office and files of the late Prof. Spencer, under the general heading of **George J. Spencer Memorabilia**. Karen Needham and the Boreus editor will select items of interest for inclusion, at irregular intervals, in future issues of Boreus.

Our Dusty Past - Vancouver Daily Province, July 31, 1947

This news report from the Vancouver Daily Province, submitted by Robb Bennett, was found by Julie Brooks (a forest entomologist) under her floor in Gibsons Landing. The news story from the July 31, 1947, issue was in regard to the agitation for a Dominion entomological station in response to depredations by forest defoliators and bark beetles.



Editor's Note: My first positions, as an employee of the Canadian Dept. of Agriculture, Entomology Division, Forest Insect Branch, were in the summers of 1947 and 1948 at the Trinity Valley Field Station, east of Vernon. Forest Insect Survey collections, made by Forest Insect Rangers, were from most areas accessible by road in BC and the Rocky Mtn. National Parks. All immature insects in the collections, processed in Vernon, were sent to the Field Station for rearing to the adult stage. In the summer of 1947 I earned the princely sum of \$125.00 per month as a Student Assistant Grade I, and in 1948 as a Student Assistant Grade II it was \$155.00 per month with the added responsibility of supervising two Student Assistants and a casual laborer as a cook! How times have changed! In February 1947 at UBC I had been interviewed for the position by George Hopping, Officer-in-Charge of the Vernon Forest Insect Lab, and Hector Richmond, two icons of forest entomology in B.C.

NEWS AND BOOK CORNER

Monographs on *Moths of America North of Mexico*

Editor's Note: The following is a press release from the Wedge Entomological Research Foundation.

Twenty-three fascicles are currently available, and they range in price from \$22.00 to \$115 US.

In September 1970, Richard B. Dominick and Charles R. Edwards drafted the introduction to the first fascicle of the venerable *Moths of America North of Mexico* series of publications. Affectionately known as MONA, that first monograph, Fascicle 21 Sphingoidea, Hawkmoths, by Ronald W. Hodges began an ambitious publication project that successfully continues to document that portion of the lepidopteran fauna, known as moths, of the Nearctic Region plus Greenland.

In 30 years of publication, the MONA series has documented the occurrence of 2,381 species from the region. Three hundred thirteen species and 23 subspecies were described as new to science in the series. Larger showy and popular moths such as the sphinx moths and giant silk worm moths are included as well as some of the smallest moths, the Cosmopterigidae.

In its conception MONA was meant to be an authoritative replacement for the long out of date W. J. Holland's *The Moth Book*, originally published in 1903 and reprinted in 1968 by Dover. The highly popular and, until 1968, much sought after Holland provided some color illustrations, brief annotations about the species, and briefer taxonomic notes. Yet the number of species in Holland was limited, and nearly all species of smaller moths could not be identified with this, the only guide to moths in North

America.

The idea for MONA needed time to develop, and eventually a nucleus of people including R.B. Dominick, C.R. Edwards, D. C. Ferguson, J. G. Franclemont, R. W. Hodges, E. R. Hodges, E. G. Munroe, E. W. Classey, B. Harley and others joined their knowledge, enthusiasm, and tenacity to publish the first MONA fascicle.

Five years after the first monograph was published, a public non-profit foundation, the Wedge Entomological Research Foundation, named in honor of Dominick's home in South Carolina, was formed to continue the vision of Richard Dominick, who unexpectedly died after just a few years and after only a few monographs were published.

Now in its 26th year, the foundation continues to publish the highly acclaimed series. The Entomological Society of America awarded Ronald W. Hodges its prestigious Thomas Say Award in 1990 for his leadership with the MONA series. Published reviews of the monographs in the MONA series have been highly complimentary.

Upcoming fascicles include the the tribe Macariini (Geometridae) and the genus *Catocala* (Noctuidae). The Wedge Entomological Research Foundation is actively searching for competent authors of monographs for the

series. In addition, the board of directors of the foundation desires to publish suitable monographs beyond the scope of the MONA series. Interested persons should contact the Foundation at: The Wedge Entomological Research Foundation, 85253 Ridgetop Drive, Eugene, Oregon 97405-9535, USA.

The Wedge Entomological Research Foundation gratefully thanks its subscribers, its supporters, the persons who provide the data and energy to assist the authors, and the users of the monographs. Were there not a need, the project could not be sustained. Were there not an interest and dedication of moth collectors, the project would be impeded. Completion of the preliminary survey remains a major goal.

For further information, contact:

Dr. Ronald W. Hodges, Managing Director,

The Wedge Entomological Research Foundation

85253 Ridgetop Drive,

Eugene, OR 97405-9535 USA

Phone: (541) 684-0484

E-mail: rwhodges@continent.com

Monarch Butterflies

An article titled "Monarchs", by Alex Shoumatoff, published in the November 1999 issue of "Vanity Fair" (pp.269-273, 295-300) examines the recent past of locating and protecting the over-wintering sites for this remarkable migratory butterfly. As most of you know the earliest work on tagging Monarchs in Ontario and their recapture, in the high mountains of Mexico was initiated by Dr. Fred A. Urquhart, a zoologist at the University of Toronto. His studies commenced in the late 1930's and continue to this day with the help of associates in Canada, the U.S. and Mexico and the backing of various environmental organizations in those countries. In the early 1970's and in parallel with Dr. Urquhart's research, and unknown to him, an American entomologist Lincoln Brower, was also following the paths of the Monarchs. Alex Shoumatoff's article is well written and delves into the history, folklore, intrigue, personal conflicts, and science, emanating from the flights of the Monarchs. His article notes results of recent research on use of DNA to identify particular populations of the Monarch., and also on the possible impact to monarch populations by their exposure to corn pollen genetically engineered to carry the gene for *Bacillus thuringiensis* (Bt).