



BOREUS

NEWSLETTER OF THE ENTOMOLOGICAL SOCIETY
OF BRITISH COLUMBIA

Volume 21, Number 1, July 2001

CONTENTS:

PRESIDENT'S CORNER

ANNOUNCEMENTS & NOTICES

- Notice of Fall AGM
- Graduate Student Scholarships
- Notice of ESBC Policy on Journal reprints
- Errata – Butterflies of BC
- USDA Forest Service: Request for Proposals

PROFILES

- Cris Guppy
- Aud Fischer
- Rob Higgins
- Norbert Kondla
- Terry Shore

The BOOK CORNER: NEWS AND REVIEWS

- Bugs of BC
- Butterflies of BC

REFLECTIONS ON OUR PAST

Organization Charts - 1960 - Federal Laboratories & Research Institutes

- Entomology Research Institute

- Research Branch Field Crop Laboratories
- Research Institute for Biological Control

Portraits of entomologists – Circa 1914

- A.W. Baker
- W.R. Thompson
- J.D. Tothill

SCIENTIFIC NOTE

- Some New Genus Names for BC Butterflies

FIELD NOTE

- Butterflies of Shorts Creek Canyon Area, North Okanagan, BC

SOCIETY BUSINESS

- By-Laws of the Entomological Society of BC

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 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 2001 issue is **September 1, 2001**.

- *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 Dec. 2001 issue is Nov. 15, 2001.

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.

PRESIDENT'S CORNER

Rob Cannings, Royal B.C. Museum

Help a Kid

It's the Centennial Year of the Entomological Society of British Columbia, and such events naturally bring the past to mind. For example, the Society's Journal this year will feature a number of papers on the history of entomology in the province. But celebrations of history also look to the future. The point I'd like to make here relates to the future and to the simple encouragement of young entomologists. All of us have busy lives, but if each of us can take a bit of time during our work or play to inspire children and students to study insects, entomology will be better off in the years ahead. Believe me, the smallest gesture can leave a lasting impression.

I think of my own career and how it was guided by helpful mentors. In the last issue of *Boreus* I wrote about James Grant and Harold Madsen, two former ESBC members who took the encouragement of young people seriously and who personally urged me along the path of entomology. My father, a self-taught naturalist who, in his 85th year, was awarded an honorary doctorate from Okanagan University College for his lifelong work in public education and conservation, of course, was a major influence. He brought other natural history and entomology mentors to me because they were his friends and he knew they would have an influence. When I reached UBC, eager to learn biology but undirected, Geoff Scudder suggested clear directions and stimulated a professional career in the study of insects. Together, we have worked on projects ever since.

One particular incident always comes back to me, however, when I consider those early influences on my work. I mentioned it briefly in last issue's President's Corner in my tribute to James Grant, but here it is again in more detail. In 1979 I was the curator of the Spencer Entomological Museum at UBC. Dr Walter Lazorko, a retired psychiatrist and expert amateur coleopterist, would frequently come in to work on beetles and talk at length about his many entomological experiences. One day while we were lamenting the state of amateur entomology, he started talking about his pal Jim Grant.

"There should be more people like Jim", Walter almost shouted, "He always encouraged kids – there would be more young entomologists if more of us behaved like Jim!"

Walter could get excited in a gloomy sort of way. "Why", he went on, "once when I was on a collecting trip with Jim at Penticton, long ago, we found a Monarch butterfly caterpillar on a milkweed plant...very rare. Jim put it and a few leaves in a plastic bag and said "I know a young boy who would love to have this!" Jim and I drove a long way up to this boy's house, but he wasn't home, so we left the caterpillar with a note attached to the door handle. At the time, I thought maybe the caterpillar gift would help make the boy a keen lepidopterist, and I admired Jim for taking the time to do that. I still remember that day!"

I was stunned at the coincidence. The caterpillar on the door was a family legend. "Walter", I said softly, "that young boy was *me*."

Walter was even more flabbergasted -- almost unbelieving. After a long silence, tears welled in his eyes and he said with conviction, "You see, then you were a small boy and now you're an entomologist. That's what Jim did for you."

Of course, an exact cause and effect is a little far-fetched, but both incidents – the caterpillar on the door and the lunchtime conversation in the museum -- have stayed with me.

And the Monarch itself made a big impression. Of course, this was the quintessential butterfly, shown in all the books, but so rare in BC that it was the first one I'd ever seen in the three or so years I'd been collecting butterflies. I raised that Monarch caterpillar and my Dad and I took photographs of the various stages (I still use the pictures in slide shows). A holiday intervened during the pupal stage, and I was forced to carry the jar on a long camping trip to the Kootenays – the adult emerged a day or two after we arrived back home. Then came the big moral dilemma – to let the butterfly go or put it in my collection. I had grown attached to the insect over the weeks that I'd raised it; killing it seemed a bad idea. And Monarchs were rare in the Okanagan, so letting it go was sensible. But I knew I would probably never catch another, and I desperately wanted that specimen. In the end, possessiveness won out. With not a little guilt, I carefully added the butterfly to my collection. And, as Jim had taught me, I wrote out a label listing the collection data.

All this is to say that a small act can go a long way in stimulating the thirst for knowledge in a child. I hope that we all can do this more and more in our own insect studies.

ANNOUNCEMENTS & NOTICES

2001 Annual General Meeting

CALL FOR PAPERS/PARTICIPATION

**The 2001 ESBC AGM will be held at the
Pacific Agricultural Research Centre, Summerland
Thursday and Friday, Sept. 27-28, 2001
Welcome at 9:AM**

IMPORTANT: Please submit titles and abstracts for presentations to Rob Cannings by Aug. 31st.

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

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

LOCAL ARRANGEMENTS: Contact

Keith Deglow (PARC)

deglowe@em.agr.ca

(250) 494-7711; fax (250) 494-0755

Pacific Agri-Food Research Centre

Summerland BC V0H 1Z0

Dr. Rob Cannings

Curator of Entomology

Royal British Columbia Museum

675 Belleville Street

Victoria BC V8W 9W2

Phone: (250) 356-8242;

Fax: (250) 356-8197

Email: rcannings@royalbcmuseum.bc.ca

A wide variety of accommodation is available in Penticton, 15 minutes south; a few motels and B&Bs can be found in Summerland as well. For more information on accommodations, the following website may be helpful: www.penticton.org

Outside of the meeting's events, there are many activities to enjoy in the South Okanagan in early fall, including bug collecting, hiking, golf, sight seeing, and of course wine tasting. For those interested, the Okanagan Fall Wine Festival immediately follows the fall AGM.

4TH Annual Graduate Student Scholarships

The Entomological Society of British Columbia announces the fourth annual Graduate Student Scholarship competition. Two \$500.00 scholarships (one MSc., one PhD) 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 during 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
- current CV

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

Deadline for receipt of applications for 2001 Scholarships is 31 August 2001. This year's Scholarships will be awarded at the ESBC AGM, Sept. 27-28, Pacific Agricultural Research Centre, Summerland.

Send applications to:

Dr. Robb Bennett

Secretary/Treasurer, ESBC

7380 Puckle Road

Saanichton, BC V8M 1W4

or email to: Robb.Bennett@gov.bc.ca

Notice of ESBC policy on Journal reprints

The Society is currently breaking even on the first 100 reprints ordered by authors, but is heavily subsidizing extra 100's of reprints. Printing extra 100's also involves considerable waste because print runs are done in groups of eight pages (a signature); if a paper ends on the first page of a signature, then seven additional pages must be printed and discarded. The issue was discussed at the Executive Meeting 25 April 2001 and it was decided that *the Society will publish a maximum of 100 reprints for authors* – i.e. extra 100's will not be printed. This will solve both the cost and waste problems associated with extra 100's of reprints. The Executive trusts that this approach will not greatly inconvenience most authors.

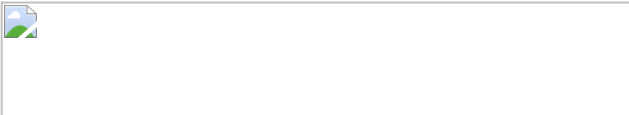
"Errata for the "Butterflies of British Columbia"

There are certain errors in the labeling of photographs of the museum specimens for the book "Butterflies of British Columbia" by Crispin S. Guppy and Jon H. Shepard, 2001. They were the result of last minute rushes to meet the publishers' deadlines.

- 1) Page 254: The captions of the figures of both the upper and under sides of the holotype of *Polygonia oreas threatfuli* wrongly state it is a male. It is a female. The text that describes the new subspecies and the appendix giving the locality where the specimen was collected both correctly say it is a female.
- 2) Pages 277 & 377: The captions of the figures of both the upper and under sides of the male and the appendix giving locality where the specimen was collected both wrongly state the male is the holotype of *Speyeria callippe chilcotinensis*. On page 277 the text correctly states that the female figured from Riske Creek, BC is the holotype.
- 3) Page 327: The museum specimen photographs of male "*Cercyonis oetus phocus*" are *Cercyonis stenele*.
- 4) Page 347: The museum specimen photographs of "*Oeneis jutta riddingiana*" are *Oeneis jutta reducta*."

Crispin S. Guppy and Jon H. Shepard

Letter from the USDA Department of Agriculture



Forest Health Technology Enterprise Team 2150 Centre Avenue, Bldg. A
Suite 331
Fort Collins, CO 80526
(970) 295-5839
(970) 295-5815 Fax

File Code: 3400

Date: June 28, 2001

Subject: Request for Additonal Exotic Forest Insects and Pathogens Records

To: Whom it may concern

We recently sent you Statements of Work for writing or editing technical documents on exotic insects or pathogens that are considered a potential threat to forests in North America. These documents will become part of the Exotic Forest Pests Information System for North America (EFPISNA) found at www.exoticforestpests.org. We received a very good response to that request, with offers on 45 of the 74 listed species. However, we would like to add more records with your help.

In addition to the 29 exotic insect species that remain from our original list, we are also accepting offers to write documents on exotics species (both insect and pathogens) that you think belong in the EFPISNA database but were not on our original list. The basic requirements for writing these records remain the same as described in the Statement of Work letter dated May 8, 2001. Please send me the names of any species you wish to write documents for either by email at liverson01@fs.fed.us or mail to:

USDA Forest Service
ATTN: Loren Iverson
2150 Centre Ave
Bldg A Suite 331
Fort Collins, CO 80526

Enclosed for your information are: (1)the list of 29 remaining exotic insects from our original request, (2)the 75 insect and pathogen species that are currently in the database or being written, and (3)a list of exotic species that have been recommended for inclusion in the EFPIANA database. If you have any questions please contact me either by email or at 970-295-5844.

Thank you,

LOREN IVERSON

Editor's Note: This U.S. Forest Service letter regarding the EFPIANA data base was received by Rob Bennett on July 3, 2001. Robb thought it would be of interest to the ESBC membership.

PROFILES

Crispin S. Guppy

Cris was born and raised in North Vancouver, British Columbia, where his parents (botanists and wildflower gardeners) introduced him to butterflies at about age 8. Many childhood summers were spent traveling the wild areas of northwestern North America, collecting butterflies and learning the plants and habitats upon which butterflies depend. For six years between high school and University he worked during the winter and chased butterflies in the summer. Cris earned Bachelor of Science (Zoology) and Master of Science (Zoology) degrees from the University of British Columbia. His M.Sc. thesis looked at the adaptive significance of alpine melanism in Rocky Mountain Apollo butterflies, and he later published three scientific papers based on the thesis. Since then he has written other popular and scientific publications and reports on the butterflies of British Columbia, focusing on their conservation status. Cris has been president of the Entomological Society of British Columbia, a long-time member of the Lepidopterists' Society and the Federation of BC Naturalists, and is currently President of the Quesnel Fall Fair. After University he was employed for six years as the Entomology Collection Manager of the Royal BC Museum, and since then has worked as a fish and wildlife habitat biologist for BC Environment in Quesnel, BC. The book *Butterflies of British Columbia* was published in 2001, co-authored by Cris Guppy and Jon Shepard of Nelson, BC.

Aud Fischer

Aud Fischer was born in South Africa, and at age 5 moved with her family to Germany. She lived in Germany until her mid-teens, and then moved to Victoria, BC. She has enjoyed art her entire life, and took a year of art school in Victoria before earning a Bachelor of Science (Biology) at the University of Victoria. She worked in the marine biology collection at the Royal BC Museum, where Aud and Cris met, and since then has been employed both as an artist and as a biologist. She did many of the illustrations in the book *Butterflies of British Columbia*.

Rob Higgins

Rob Higgins is an instructor in the Biology department at the University College of the Cariboo in Williams Lake and is about to enter the PhD program at UNBC under Dr. Staffan Lindgren.

Over the past few years I have developed an interest in entomology generally and myrmecology (ants) specifically. My background is in the area of biochemical toxicology so entomology has opened up an entirely

new world to me. My interest in ants developed when an ant behavioral lab I contemplated led me into the less than perfect world of ant taxonomy. Lab needs aside, I began to become interested in the role ants play in boreal forests. Some early work of mine a few years back supported the hypothesis that certain ants (Carpenters) afforded some protection to young spruce trees from attack by the White Pine Weevil (*Pissodes strobi*). This year I plan to initiate a complete survey of ants in both Sub-boreal spruce and Interior Douglas-fir forests near Williams Lake and Quesnel. With this work I will focus on the specific needs for coarse woody debris as habitat for ants. With this baseline ecosystem data I then hope to determine if there is a spatial protective effect around certain ant nests from pests such as the White Pine Weevil.

Norbert Kondla

Norbert George Franz Kondla was born in Hanover, Germany on 9 July 1947. Norbert and brother Kurt of Calgary, Alberta are the sons of George and Ruth Kondla (deceased). Norbert is thankful that his parents decided to emigrate to western Canada in 1952. This has provided unlimited opportunities to enjoy the natural wonders of this wonderful area and is much preferable to being in a crowded location with little in the way of natural landscapes to enjoy. Norbert has been happily married to Trudy for the past 34 years and has two daughters, Cristy and Stacey in Alberta.

Norbert attended the public school system in Athabasca and Calgary, Alberta. He is a graduate of the University of Calgary where he learned about plant and animal ecology as well as other useful topics relevant to a lifelong interest in the natural world.

Norbert's biological interests started with birds and the collecting of bird's eggs. His egg collection has been in the Provincial Museum of Alberta since shifting primarily to butterfly interests in 1971. An academic background in botany and plant ecology has proven to be very helpful in butterfly study.

Norbert has had a diverse working life to date. Experiences include working as a private sector consultant, employee of Canada Post, zookeeper, park planner, provincial government manager and government habitat biologist. Working and living locations over the years have resulted in time being spent in Edmonton, Calgary, Sylvan Lake and Lethbridge, Alberta. British Columbia locations since 1991 are Fort St. John, McBride, and Genelle. Living in various locations has provided an opportunity to experience numerous ecosystems in more depth than is possible through short vacation trips.

Norbert has traveled extensively in most parts of Alberta and British Columbia in search of butterflies. Ten trips to Yukon have also been made and butterflies have been captured in 6 western states as well as Saskatchewan, Manitoba, Ontario and North West Territories. He presently has the largest butterfly collection in western Canada. It consists of over 60,000 specimens. About 20,000 of these are from British Columbia.

His introduction to British Columbia butterflies began with a trip to Pink Mountain in northeastern BC in 1978. He has collected BC butterflies in 20 out of the past 23 years and for the past 10 years has been a resident of BC.

Norbert is one of the authors of the book *Alberta Butterflies*. Norbert has also been very active in churning out sundry reports and publications on a variety of topics, including butterflies. The latest tally is author/coauthor of 43 consultants reports, 59 government reports, and 78 published works. Norbert has also had a hand as an information contributor, reviewer or other roles in an additional 100 or so reports and publications.

Norbert's primary butterfly interests have been and continue to be butterfly conservation, documenting the distribution and habitat use of butterflies in northwestern North America, and reviewing butterfly taxonomy in northwestern North America.

Terry Shore

I became an entomologist rather incidentally. My intention when I re-entered university (after a brief stint in Arts and a few years off) was to become a marine biologist. After taking all the usual prerequisites I opted to take an ecology course, which ran in the summer. This course was fascinating to me as we spent as much time on field trips as we did in the classroom. We learned the names of all kinds of plants and animals and hiked through several ecological zones learning why certain plants grew where they did etc. Following this course I re-directed my studies towards botany. Starting off in botany, one of my courses was soil science, which was taught in the Faculty of Forestry. As soon as I walked into the MacMillan building at UBC I got this overwhelming feeling that I belonged in forestry not botany. Fortunately for me, I spoke with a helpful adviser in forestry who said "why not start tomorrow". So I immediately switched my courses and began my forestry career .

I enjoyed most of the forestry curriculum but particularly the forest biology courses including entomology, which was taught by the newly hired and enthusiastic John McLean. One of the requirements for my bachelor's degree was a thesis, and John offered me a summer job working on western spruce budworm, which I could use as a topic for my thesis. I did a study of the effects of different diets on budworm growth, but barely finished with a useable sample size as a virus had swept the population. Learning from this experience, when I decided to enter graduate school in forest entomology, I chose to work with ambrosia beetles, which can always be counted on to be present and plentiful. After two years of graduate school at UBC, working on pheromone trapping of ambrosia beetles, I was given permission to switch from the masters program to the doctoral program. I completed my degree in 1982 and was hired immediately by the Canadian Forest Service in Victoria.

With the Canadian Forest Service I spent my first three years working with the Forest Insect and Disease Survey (FIDS) group. It was my responsibility to develop sampling methodologies for the various insects and diseases and to put these together in a FIDS survey and sampling manual. In 1985, with the retirement of Les McMullen, a vacancy came up as a research scientist in the bark beetle group, which I was successful in applying for. Since then I have worked on bark beetles which are the principal insect killer of mature trees in British Columbia.

My research interests are more on the forest management side than on the insect biology side, although a good understanding of both is required to develop methodologies for managing forests to reduce losses from bark beetles. I don't consider myself to be a "real" entomologist like many others who have had a lifelong fascination with insects and have a good knowledge of taxonomy. I just take insects upstairs to the insectary and ask the "real" entomologists "what's this?" Currently my work tends to be more quantitative, such as developing hazard rating systems for major bark beetle species and working on models for prediction of tree mortality during epidemics. Also, I work on silvicultural systems for reducing hazard to bark beetles.

I enjoy the interaction with my entomological colleagues from various disciplines and that is why I have been active on the executive of both the ESBC and ESC for a number of years.

Terry Shore PhD, RPF Tel: (250) 363-0666
Research Scientist Fax: (250) 363-0775
Natural Resources Canada Email: tshore@pfc.forestry.ca
Canadian Forest Service
506 W. Burnside Rd.
Victoria BC V8Z 1M5 Canada

THE BOOK CORNER

Book Review – Bugs of British Columbia

Bugs of British Columbia. John Acorn and Ian Sheldon. © 2001 by Lone Pine Publishing, 10145 – 81 Ave., Edmonton, AB, T6E 1W9, Canada. Pp. 160. \$14.95

Bugs of British Columbia is a paper-backed bound field guide that contains excellent colour paintings (courtesy of artist Ian Sheldon) and interesting descriptions of what John Acorn considers the 'coolest' 125 bugs out of an

estimated 20,000 species in the province. The coolest bugs include examples from most major insect orders (including some aquatic insect larvae) as well as some of the more common or interesting non-arthropods. The bugs were selected, in the words of John, on the basis of being 'either 1) big, 2) colourful, 3) really hard to miss, or 4) extremely weird.'

The Table of Contents (*Key to Bugs*) is presented as thumbnail pictures with page number and common name of each of the bugs grouped by order so the bugster can quickly scan the pictures rather than common names that for many would not mean anything. Each order is colour-coded to aid in locating the order in the book. The *Index* lists both the common and scientific names.

The *Introduction* includes John's definition of a bugster (persons enthusiastic about insects and their relatives) and information on how to differentiate between insects, bugs and non-arthropods. This section provides the factors used to select the 125 coolest bugs for the book and a brief description of the geography of BC to illustrate the diversity of habitats and conditions in which bugs can be found. The next section, *Basic Bug Banter*, provides condensed instruction on the basic insect structure, life cycles, development, and ecology, and explains how insects are classified with descriptions of insect orders. In the next section on *Being a Bugster*, John provides useful tips on how to find, observe, collect, rear and preserve bugs. Each of the sections introduces the reader to several entomological and ecological technical terms that are used in the later bug descriptions.

The single-page descriptions of each of the 125 coolest bugs includes the common and scientific names, a good-sized colour painting of the bug, and an inset listing its size (wingspan or length) and habitat to help bugsters look for the bug. The contents of the descriptions will vary according to the bug, but most contain interesting facts about its life cycle or behaviour, identifying features and how to distinguish it from similar bugs, how it got its name, what are its host plants or prey. John includes many of his own experiences finding the bugs when he was either a 'larval' or 'adult' bugster.

The section on *Books for Bugsters* lists many useful reference books, some of which may only be available in libraries or reference libraries of older bugsters (e.g. *The Moth Book*). Also, the reader should check for newer editions (e.g. Arnett's *American Insects* 2nd edition is now available). For those bugsters interested in getting more involved in entomology, there is a list of entomological societies and associations.

The writing style is very easy to read, almost conversational, and displays John's sense of humour, similar to his speaking style as *The Nature Nut*. He has done a commendable job in his selection of bugs and in the detail in the descriptions. Ian's artwork is accurate and detailed enough to help bugsters confirm the identity of like specimens, or at least get very close.

I found only one spelling error in the book – *Liminitis* instead of *Limenitis*. Research has shown the Rocky Mountain wood tick is not a vector of Lyme disease as is suggested in the book. There were the usual but minor differences in common names to which we entomologists have grown accustomed over the years (e.g. beer beetle vs. four-spotted sap beetle vs. red-spotted sap beetle; Pacific fritillary vs. western meadow fritillary). My only complaint with the book is the inclusion of a page in *Being a Bugster* devoted to an 'editorial' on the issue of collecting insects (collecting vs. anti-collecting groups). The discussion adds nothing to achieving the objective of the book - inspiring greater interest and awareness of bugs.

I highly recommend this book to all bugsters who are just starting out in their discovery of insects and their relatives. The book is a good introduction to the use of field guides by limiting the number of bugs to the more spectacular, interesting or common. More experienced bugsters will find the book useful in their efforts to make non-bugsters more appreciative of some of BC's more interesting and spectacular bugs. Naturalists and weekend hikers will find the book a useful addition to their library of field guides, not so much as an identification guide but more as a guide to where and when to look for these bugs.

Hugh G. Philip

Book Review – Butterflies of British Columbia

Butterflies of British Columbia. Guppy, C. S. and J. H. Shepard. 2001. University of British Columbia Press. Vancouver. 414 pages. \$92.00.

This magnificent book is difficult to review because its target audience is not readily apparent. Butterflies of B. C. is not designed as a field guide. The large format (8 1/2 X 11 inches) precludes easy use outdoors, and the book is heavy. There are no quick identification tools frequently seen in field guides such as Acorn's Alberta Butterflies and Peterson's Field Guides. These include picture keys, colour codes, and seasonal codes for rapid identification to genus or family. Similar appearing species are not grouped together for ease of comparison. Consequently, this book is not going to be widely used by recreational naturalists to begin to learn about the fascinating butterfly fauna of British Columbia.

Unfortunately, Butterflies of B. C. is also not a rigorous scientific treatment of B. C. butterflies. New taxa are described, and new synonymies are proposed. However, there are no keys, no comprehensive synonymies, and while colour photographs are lavish, the drawings in support of taxonomic decisions and in aid of identifications are simplistic and without scales. There is no indication that the manuscript was peer reviewed prior to publication.

It seems we have a text aimed at serious butterfly enthusiasts with at least a passing familiarity with butterflies from B. C. or other areas. This limits its target audience to about 50 individuals across Canada. This may explain the high purchase price.

What Guppy and Shepard have provided is a comprehensive, well laid out, beautiful treatise describing in reasonable detail the butterfly fauna of B. C. and neighbouring areas. The introduction gives brief accounts of the history of resident butterfly collectors, but excludes work done by non-residents. The discussions of the biogeography of B. C. butterflies is interesting but brief, as are sections on butterfly structure, behaviour, gardening to enhance butterfly populations, and photography. Since these are not the main aim of the book, short treatments are justifiable. Those interested in finding out more about each of these areas will be frustrated by a lack of references to more detailed treatments.

Human impact on butterfly populations is well described. This is a valuable and important contribution to understanding the relationships between humans and butterflies. Since many of the most endangered habitats in Canada are found in B. C., highlighting their butterfly fauna is laudable.

The largest section of the book is the species accounts. These are consistent in format, well presented, with reasonable detail. As someone interested in the details of how one closely related taxon is separated from another, I find the details of diagnosis to be frustrating to find. They do not have a section of their own, and they are not indicated in the photographs. Taxonomic changes are fairly common, sometimes with explanation, never with morphometric justification. It is perhaps a comment on the quirks of Lepidopterists that no two books published recently on the Canadian butterfly fauna treat species with the same names. In Butterflies of B. C., some changes seem reasonable, others seem a bit extreme. All made me think. Since there is so much disagreement among butterfly experts in Canada, discussion of specific taxonomic changes or presumed misidentifications is not undertaken herein.

The quantity of information collected, arranged, and presented by Guppy and Shepard is truly mind numbing. The authors have presented the people of B. C. with a masterful first attempt at describing the province's butterfly fauna. Unfortunately, the drawbacks of format and design will make this book difficult to use well. Coupled with the price, these missed opportunities make a second issue in the near future unlikely. If you are keen on butterflies already, this book is invaluable. If you are not, wait for a sale.

Ted Pike

REFLECTIONS ON OUR PAST

Organization Charts - 1960 - Federal Laboratories & Research Institutes

- Entomology Research Institute
- Research Branch Field Crop Laboratories
- Research Institute for Biological Control

Portraits of entomologists – Circa 1909-11

- A.W. Baker
- W.R. Thompson
- J.D. Tothill

Editors Notes.

Photographic negatives of the organization charts and portraits from which prints were made for inclusion in this issue of *Boreus* had been in the files of Dr. George Spencer for years. The negatives were retrieved from the files and then sent to your editor by Karen Needham, Curator of the UBC Spencer Entomological Museum.

In Dr. Spencer's entomology classes at UBC, at least in 1948 when he was my entomology 'prof', he devoted at least one full lecture to the employment opportunities (or lack thereof) for entomologists in Canada. At that time positions and openings for entomologists were limited primarily to governments and universities. Dr. Spencer also emphasized the need for graduate studies for students going into entomology as a profession. Although Dr. Spencer retired from formal teaching in 1953 his interest in 'life for entomologists beyond university graduation' must have continued since the 'organization trees' for federal institutes and laboratories in his files were from 1960. One observation about the 'org charts', which you will or have noted, is the use of the term 'men' to indicate positions!

The Portraits of Baker, Thompson, and Tothill were by the R.B. Kennedy Studio, Guelph. How and why Dr. Spencer acquired the negatives for the portraits is not known. Unfortunately, a similar portrait of Dr. Spencer was not in the file! As noted in the 1991 ESBC publication "Entomologists of British Columbia" Dr. Spencer graduated with a BSA from Ontario Agricultural College (OAC), Guelph in 1914 before continuing his studies at the University of Illinois where he earned an MSc degree in 1924. A.W. Baker graduated from OAC in 1911 then joined the staff there as a demonstrator. W.R. Thompson graduated with a BSA in Biology from OAC in 1909 and an MSc in Entomology from Cornell in 1912. J.D. Tothill, upon graduation from OAC in 1910, took a position with the U.S. Gypsy Moth Lab. These three entomologists were contemporaries and probably mentors of Dr. Spencer.

Thanks to Ed Becker of Ottawa, Rob Cannings, and Keith Deglow for the references and information on these early Canadian entomologists.







 A.
W.
"Jack"
Baker

A.W. "Jack" Baker was born in Walkerton, Ont. He and his brother Arthur, another well known entomologist, apparently spent part of their childhood in London, Ontario along with future entomologist W.R. Thompson. In early boyhood "Jack" and his brother, developed a genuine interest in natural history, particularly in insects. Jack and Arthur attended the Ontario Agricultural College (OAC) together. Jack graduated with a BSA (Entomology and Zoology option) in 1911. He taught entomology at OAC for 44 years. He served in the Royal Canadian Navy during World War II. "His work on the control of warble fly in Ontario was outstanding. His contribution to the organization of the Entomological Society of Canada was a major one, and he served with distinction as the Society's second president".

Reference: Ent. Newsl. (Agric. Can.) 35:2-3 (1957). Can. Ent. 96:12 (1964).

 W. R.
Thompson

W.R. Thompson was born in London, Ontario in 1887. Since London, was the headquarters for the Entomological Society of Ontario, W.R. Thompson along with the Baker brothers were able to participate in Society activities alongside their mentors Drs. Wm. Saunders, John Deerness, and C.J.S. Bethune, "our most outstanding amateur and pioneering entomologists". Dr. Thompson graduated in Biology from OAC in 1909. In 1912 he obtained an MSc in entomology at Cornell, and further advanced degrees in France in 1921 and 1924. He joined the U.S. Bureau of Entomology in 1909 and was posted to the Gypsy Moth Parasite Laboratory in Massachusetts. He was sent to France and studied the natural enemies of the gypsy and brown-tail moths. He became director of the U.S. parasite laboratories in southern France from 1919-1928. In 1928 he became Head of the Imperial Institute of Entomology, in Farnham, which later became the Commonwealth Institute of Biological Control. The headquarters was moved to Belleville, Ontario in 1940 and then Ottawa in 1948. Dr. Thompson was a prolific writer and published some 150 scientific papers.

Reference: Ross, W.A. 1959. Can. Ent. 91(1): 2-4

 J. D.
Tothill

J.D. Tothill was born in London, England in 1888. He came to Canada and graduated from OAC in 1910; after which he was employed by the U.S. Bureau of Entomology at the Gypsy Moth Parasite Laboratory in Massachusetts. He returned to Canada in 1911 to the Division of Entomology to organize and direct the brown-tail moth survey and eradication program in New Brunswick. In 1913-15 he carried on postgraduate studies under Comstock and Needham at Cornell on the bio-control of fall webworm and the taxonomy and biology of parasitic Diptera. In the fall of 1915 he transferred to Harvard where he received a DSc degree under W.M. Wheeler, the world authority on the biology and taxonomy of ants. From 1912-22 he organized and directed intensive research on the natural control of the fall webworm, tent caterpillars, and the spruce budworm in Canada. Tothill came to Victoria in 1917 to work on parasites of the tent caterpillar and to collect tachinid flies for control studies in Ontario (R. Cannings). In 1923 he was transferred to the Forest Insect Division of the Entomological Branch. In 1926 he resigned from the Canadian Service to take on overseas positions in Fiji, Egypt and Kartoum until 1947.

Reference: Baird, A.B. 1957. Ent. Newsl. (Agric. Canada) 33(9):2-3.

SCIENTIFIC NOTE

Some New Genus Names for BC Butterflies

Norbert G. Kondla

The recently published Butterflies of British Columbia (Guppy and Shepard 2001) did not discuss nor reference two important taxonomic publications that bear on genus level taxonomy and nomenclature of some lycaenid butterflies.

The book place the species *augustinus*, *iroides*, *mossii* and *polia* in the genus *Incisalia*. Johnson (1992) has placed these taxa in the new genus *Deciduphagus* on the basis of male and female genitalia and a biological

difference. Note that *Deciduphagus* is masculine, so that *D. polios obscurus* is the correct spelling in this combination pursuant to the ICZN rules for zoological nomenclature.

The book also uses the following genus and species combinations: *Lycaeides idas*, *Lycaeides melissa*, *Plebeius saepiolus*, *Icaricia icarioides*, *Icaricia shasta*, *Icaricia acmon*, *Vacciniina optilete*. Balint and Johnson (1997) revised the *Polyommatus* section of *Polyommata*. This worldwide revision places the BC *Lycaeides* species in the genus *Plebejus*; *saepiolus* in the genus *Aricia* [Reichenbach], 1817; the *Icaricia* species in the genus *Aricia*, and *optilete* in the genus *Albulina* Tutt, 1909.

Citations

Balint, Z. and K. Johnson. 1997. Reformation of the *Polyommatus* section with a taxonomic and biogeographic overview. *Neue Entomologische Nachrichten* 40:1-68.

Guppy, C.S. and J.H. Shepard. 2001. *Butterflies of British Columbia*. Royal BC Museum. 414 pp.

Johnson, K. 1992. The palearctic "elfin" butterflies (Lycaenidae, Theclinae). *Neue Entomologische Nachrichten* 29:1-141.

Correspondence can be sent to: Norbert Kondla, Box 244, Genelle, BC V0G 1G0

FIELD NOTE

Butterflies of Shorts Creek Canyon Area, North Okanagan, BC.

*David L. Threatful*¹

Shorts Creek Canyon, one of the more spectacular canyons in the North Okanagan, is in a sunny, open east-west valley just north of Terrace Mountain on the west side of Okanagan Lake. Shorts Creek enters Okanagan Lake near Fintry. In a distance of 9km, elevations range from 580m at the east end of the valley to 1500m at the summit of the south facing north rim of the canyon. The lower section of the valley is accessed via a private ranch road. The summit of the canyon can be reached by 20km of road and 6km of trail. The access trail, maintained by the Vernon Outdoors Club, goes through or skirts varied habitat from dry to wet sites, and from open slopes to rocky outcrops. The sites includes Lodgepole pine forests, cut blocks, open grassy slopes, grassy meadows, stands of Douglas fir and Ponderosa pine, Engelmann Spruce, and Mountain alder, to name a few.

The Shorts Creek Canyon area supports a rich butterfly fauna. A number of years ago James Grant had suggested that a survey of the butterfly species of this area should be undertaken. The following annotated list of butterfly species was compiled from observations and collections made in July 1997, June through August 1998, April 1999 and July 2000. David Threatful made all the identifications including two species, recorded by Candis Eikerman of Vernon, which had not previously been known from the area. Specimens were released following identification. A few specimens were collected and sent to Jon H. Shepard for confirmation. Information in the List includes the butterfly species with their common and scientific names, dates of observation and/or when a collection was made, and the approximate elevations as determined from a topographic map. Nomenclature followed is that used in "The Butterflies of Canada" (Layberry, R.A., P.W. Hall and J.D. LaFontaine. 1998).

Butterfly Species from the Shorts Creek Canyon Area.

Skippers (Hesperiidae)

1. Dreamy Duskywing (*Erynnis icelus*) – early VI-98. 1900 ft.
2. Persius Duskywing (*Erynnis persius*) – early VII-97, early VI-98. 3600-5000 ft.
3. Two-banded Checkered Skipper (*Pyrgus ruralis*) – early VI-98. 3800 ft.
4. European Skipper (*Thymelicus lineola*) – mid & late VII-98. 1900-3700 ft.

5. Western Branded Skipper (*Hesperia colorado*) – early VII-97, mid VIII-98. 1900-5000 ft.
6. Tawny-edged Skipper (*Polites themistocles*) – mid VI & early VII-98. 1900 ft.
7. Long Dash Skipper (*Polites mystic*) – mid VI & early VII-98. 1900 ft.
8. Woodland Skipper (*Ochlodes sylvanoides*) – mid VIII-98. 1900-2000 ft.
9. Common Roadside Skipper (*Amblyscirtes vialis*) – mid VI-98. 1900 ft.

Parnassians & Swallowtails (Papilionidae)

10. Rocky Mountain Parnassian (*Parnasius smintheus*) – early VII-97, mid VI-98. 2100-5000 ft.
11. Anise Swallowtail (*Papilio zelicaon*) – early VII-97, early VIII-98. 5000 ft.
12. *Canadian Tiger Swallowtail (*Papilio canadensis*) – mid VI & mid VII-98. 1900- 3700 ft.
13. *Western Tiger Swallowtail (*Papilio rutulus*) – mid VI & early VII-98. 1900 ft.
14. Pale Swallowtail (*Papilio eurymedon*) – mid VI & early VII-98. 1900 & 3700 ft.
*Hybrids of both species also occur in the Lower Shorts Creek Canyon Valley.

Whites & Sulphurs (Pieridae)

15. Pine White (*Neophasia menapia*) – early VII & mid VIII-98. 2000-5000 ft.
16. Spring White (*Pontia sisymbrii*) – early VI-97, mid IV-99. 3500 ft.
17. Western White (*Pontia occidentalis*) – early VII-98. 5000 ft.
18. Cabbage White (*Pieris rapae*) – early VII-97, mid VIII-98. 1900 ft.
19. Large Marble (*Euchloe ausonides*) – late VI & early VII-98. 3500-3600 ft.
20. Stella Orangetip (*Anthocharis stella*) – late VI & early VII-98. 3500-3700 ft.
21. Clouded Sulphur (*Colias philodice*) – mid VI and mid VIII-98. 1900-3800 ft.
22. Orange Sulphur (*Colias eurytheme*) – mid VIII-98. 1900-4000 ft.
23. Queen Alexandra's Sulphur (*Colias alexandra*) – mid VI and early VII-98. 1900-2200 ft.
24. Pink-edged Sulphur (*Colias interior*) – early VII-98. 3600-4800 ft.

Coppers, Hairstreaks, & Blues (Lycaenidae)

25. Blue Copper (*Lycaena heteronea*) – mid VII-98. 3500-3700 ft.
26. Purplish Copper (*Lycaena helleoides*) – mid VIII-98. 3700-3800 ft.
27. Lilac-bordered Copper (*Lycaena nivalis*) – early VII-97, late VI-98. 3500-4800 ft.
28. Mariposa Copper (*Lycaena mariposa*) – late VI & early VII-98. 4000-4800 ft.
29. Sylvan Hairstreak (*Satyrium sylvinum*) – mid VII-98. 3800 ft.
30. Hedgerow Hairstreak (*Satyrium saepium*) – early VII-97, late VI & early VIII-98. 3500-5000 ft.
31. Thicket Hairstreak (*Callophrys spinetorum*) – early VII-97, early VII-99. 3800-5000 ft.
32. Barry's Hairstreak (*Callophrys barryi*) – early VI & early VII-98. 3500-4800 ft.
33. Brown Elfin (*Callophrys augustinus*) – mid IV-99. 3500-3700 ft.
34. Moss's Elfin (*Callophrys mossii*) – mid IV-99. 3500-3800 ft.
35. Western Pine Elfin (*Callophrys eryphon*) – early VII-97. 3500-4800 ft.
36. Grey Hairstreak (*Strymon melinus*) – mid VIII-98. 1900 & 2100 ft.
37. Western Tailed Blue (*Everes amyntula*) – early to late VI-98. 3500-3700 ft.
38. Purple Azure (*Celastrina ladon nigrescens*) – early VI-98. 3700 ft.
39. Square-spotted Blue (*Euphilotes battoides*) – mid VI & mid VII-98. 1900-3600 ft.
40. Silvery Blue (*Glaucopsyche lygdamus*) – early VII-97, late VI-98. 1900-5000 ft.
41. Northern Blue (*Lycaeides idas*) – early VII-97, late VI & mid VIII-98. 3500-5000 ft.
42. Greenish Blue (*Plebejus saepiolus*) – early VII-97, late VI-98. 3700-4000 ft.
43. Boisduval's Blue (*Icaricia icarioides*) – early VII-97, late VI-98. 3500-3800 ft.
44. Acmon Blue (*Icaricia acmon*) – late VI & early VII-98. 5000 ft.
45. Arctic Blue (*Agriades glandon*) – early VII-97, late VI-98. 4800-5000 ft.

Brush-footed (Nymphalidae)

46. Great Spangled Fritillary (*Speyeria cybele*) – mid VIII-98. 3700 ft.

47. Zerene Fritillary (*Speyeria zerene*) – mid VII-98. 3500-3600 ft.
48. Callippe Fritillary (*Speyeria callippe*) – early VII-2000. 5000 ft.
49. Northwestern Fritillary (*Speyeria hesperis*) – midVII-98. 3700 ft.
50. Hydaspe Fritillary (*Speyeria hydaspe*) – early VII-97, late VI-98. 2000-5000 ft.
51. Pacific Fritillary (*Boloria epithore*) – early VII-97. 3700-4000 ft.
52. Northern Checkerspot (*Chlosyne palla*) – late VI & early VII-98. 1900-2000 ft.
53. Northern Crescent (*Phyciodes cocyta*) – early VII-97. 3900-4100 ft.
54. Field Crescent (*Phyciodes pratensis*) – early VII-97. 4000-4100 ft.
55. Pale Crescent (*Phyciodes pallidus*) – late VI & early VII-98. 4800-5000 ft.
56. Mylitta Crescent (*Phyciodes mylitta*) – mid VIII-98. 1900-3800 ft.
57. Anicia Checkerspot (*Euphydryas anicia*) – early VI-98. 3500-5000 ft.
58. Satyr Comma (*Polygonia satyrus*) – mid VI-98. 1900 ft.
59. Green Comma (*Polygonia faunus*) – mid VIII-98, mid IV-99. 3500-4000 ft.
60. Hoary Comma (*Polygonia gracilis zephyrus*) – mid VIII-98, mid IV-99. 3700-5000 ft.
61. Compton Tortoiseshell (*Nymphalis vaualbum*) – mid-VIII-98. 3800 ft.
62. Mourning Cloak (*Nymphalis antiopa*) – mid VI-98. 1900-3700 ft.
63. Milbert's Tortoiseshell (*Nymphalis milberti*) – early VII-97, mid-IV-99. 3500-5000 ft.
64. *Painted Lady (*Vanessa cardui*) – late VI & early VIII-98. 5000 ft.
65. Lorquin's Admiral (*Limenitis lorquini*) – mid VI & early VII-98. 1900 ft.
66. Common Ringlet (*Coenonympha tullia*) – mid VI & early VII-98. 1900 ft.
67. Common Wood-Nymph (*Cercyonis pegala*) – mid VIII-98. 1900-2100 ft.
68. Great Basin Wood-Nymph (*Cercyonis sthenele*) – mid VIII-98. 1900-2100 ft.
69. Vidler's Alpine (*Erebia vidleri*) – early VII & mid VIII-98. 3700-5000 ft.
70. Common Alpine (*Erebia episodea*) – early to late VI-98. 3500-5000 ft.
71. Chryxus Arctic (*Oeneis chryxus*) – late VI & early VII-98. 1900-5000 ft.

* Not seen every year, migrates into area during peak abundance.

¹Correspondence can be sent to: David L. Threatful, Telafrend Motel, Unit 14, 1501 – 32nd St., Vernon, BC V1T 5K4.

SOCIETY BUSINESS

By-Laws of the Entomological Society of British Columbia

The original "Declaration" and By-Laws were signed at Agassiz by Lindsay Edgar Marmont, William Henry Lyne, R. Stinson Sherman, Max Hermann Ruhmann, and Edmund Peter Venables, witnessed by Reginald Glendenning, and submitted to the Registrar of Companies on 14 June 1923. The Entomological Society of British Columbia was officially incorporated under the "Societies Act" on 25 September 1923. Subsequent amendments to the By-Laws were made in 1943, 1983, and 1985. Following are the amended By-Laws as of 19 December 2000.

Robb Bennett
Secretary-Treasurer, ESBC
19 December 2000

1. This Society shall be known as "The Entomological Society of British Columbia," being the British Columbia Branch of the Entomological Society of Canada (hereinafter called "the Parent Society").
2. Relationship to the Entomological Society of Canada (the Parent Society). – This Society shall in working activities remain an integral unit in the entomological organization of the Dominion of Canada, shall in

aims and endeavours remain embodied with other branches of the parent Society, and shall continue in connection with and under the constitution of the Parent Society.

3. Object – The objects of this Society shall be:

- a. To endeavour to co-ordinate and unite the work, notes, and observations of all those engaged in the study of insects and to encourage those interested in the same study throughout and within the confines of the Province of British Columbia.
- b. To collect and study the insects of the Province of British Columbia, and to render aid and assistance to the best of its ability, either through the Members individually or through the Society in convention, to all students in the science of entomology in the Province.

4. Membership, Dues, and Expenditures

- a. Any person may become a Member on application and on payment of an annual fee to the Secretary-Treasurer. The fee for full membership, to be levied from each Member annually, shall be determined by the Executive of the Society and set by motion at the Annual General Meeting. Members in good standing shall receive all publications of the Society. Institutions and organizations may purchase publications of the Society but shall not become Members. The fee for full membership shall be fully reviewed, with respect to the costs of operating the Society, by the Executive and recommendations of the fee shall be put forth to the membership at the Annual General Meeting every year.
- b. Students at a recognized institution of education may become Members of the Society on application with proof of studenthood and on payment of an annual fee set at one-half of the full membership fee to the Secretary-Treasurer. They shall have the same privileges as full Members.
- c. Members may withdraw from the Society upon giving notice in writing to the President or Secretary.
- d. A Member whose annual fees are two years in arrears automatically loses membership in the Society and the Executive is empowered to expel any Member for unseemly conduct.
- e. Any Member who has made outstanding contributions to the advancement of Entomology in British Columbia may be nominated as an Honorary Member. The nomination must be in writing, signed by at least five Members in good standing, and must be submitted to the Secretary-Treasurer of the Society at least two months before the Annual General Meeting at which the membership is to be awarded. The nomination must receive the approval of two-thirds (2/3) of the Executive of the Society and must be elected by a simple majority of the Members present and in good standing at the Annual General Meeting. Honorary membership shall not exceed 10% of the total membership at the time of the award. The recipient shall be presented with a membership certificate. An Honorary Member shall not pay dues but shall have the privileges of a full membership.
- f. Upon retirement from his/her vocation, a member of the Society may make application to the Executive for a Retired Membership. A Retired Member shall be entitled to the Society's Newsletter only (no Journal); otherwise they shall have the same privileges as full Members. The fee for retired membership shall be the cost of printing one volume of the Newsletter plus postage to the next highest dollar.

5. Annual Meeting

- a. The Annual General Meeting of the Society shall be called each year by the President at a time and place approved by the Executive. Members shall be notified of the time and place of the Annual General Meeting at least thirty days prior to the meeting.
- b. Seven Members shall constitute a quorum at the Annual General Meeting, only those in good standing being entitled to vote.

6. Special Meetings

a. Special meetings of the Society may be held at any time or at any place, the time and place being approved of and decided upon by Members present at the time of the regular annual meeting.

b. Meetings of the Executive of the Society shall be held at any time and at any place at the discretion of the Executive. Officers of the Society shall be notified at least thirty days prior to each such meeting.

7. Officers

a. The Officers of the Society shall consist of President, President-Elect, Secretary-Treasurer, Editor of the "Journal", Editor of the Newsletter, immediate Past President, Regional Director to the Parent Society and five Directors. These officers shall comprise the Executive with full powers to act on behalf of the Society within the bounds of the constitution and to appoint committees as necessary. Elections shall be held once a year at the Annual General Meeting. President, President-Elect, Editor of the "Journal", and Editor of the Newsletter shall be elected and remain in office until the next Annual General Meeting or until a successor has been elected. The office of President shall not be held by the same member for more than two consecutive years. Normally, the President-Elect shall take office as President one year after his/her election. The Secretary-Treasurer and five Directors shall be elected for two-year terms of office; election of the Secretary-Treasurer and two Directors shall alternate in years with election of the three remaining Directors. The Executive shall appoint the Regional Director to the Parent Society. Each shall remain in office for two Annual General Meetings or until a successor has been elected. The Officers shall act without remuneration.

b. Duties of the Officers shall be:

i. The President or designated alternate shall preside at all meetings and act ex-officio on all committees. He/she shall have primary responsibility for the program and arrangements of the Annual General Meeting.

ii. The Secretary-Treasurer shall maintain a record of all meetings and act as a custodian of all Minute books and correspondence. He/she shall also receive and disburse all funds, prepare the annual financial statement, file a copy of the same with the Registrar of Companies as required under the Societies Act, and submit to the Editor of the "Journal" any changes in dues or page charges that are to be quoted in the "Journal." The Secretary-Treasurer shall have the use and custody of the seal of the Society.

iii. The Editor of the "Journal of the Entomological Society of British Columbia" is responsible for the publication of the "Journal" and, on the recommendation of qualified reviewers, shall decide whether or not a manuscript submitted to the "Journal" for publication is suitable. The Editor's decision shall be final.

iv. The Editor of the Newsletter is responsible for the contents and frequency of publication of "Boreus."

v. The Regional Director to the Parent Society is responsible for representing the Society at Executive Meetings of the Parent Society.

vi. The other Officers of the Society shall assist with the conduct of the Society's business as and when called upon.

c. The Executive shall have power to meet expenses required in the normal operation of the Society business. Such expenditures shall be subject to subsequent ratification at the Annual General Meeting by the majority of the Members present.

8. Alterations – These by-laws may be altered or amended only at the Annual General Meeting of the Society by the approving vote of three-fourths of the Members present and in good standing. Such alterations must be made by notice of motion, which shall have been sent to the Secretary, and a copy of such been forwarded to Members at least one month previous to the Annual General Meeting.

9. Borrowing Powers – No Officers or group of Members shall be entitled to borrow money in the name of the Society without the prior consent of the Executive and three-fourths of the Members present and in good standing at the Annual General Meeting.
10. Publishing Charges – The page charges and cost of reprints of papers published in the "Journal of the Entomological Society of British Columbia" shall be determined by the Executive and changes in such costs to authors shall be set by motion at the Annual General Meeting. Authors requiring financial assistance in publishing manuscripts in the Journal may petition the Executive for such assistance. The amount of assistance shall be decided by the Executive and their decision shall be final.
11. Audit of Accounts – The accounts shall be audited by an honorary auditor appointed at the Annual General Meeting each year.

Compiled from available records on file with the Registrar of Companies by

Robb Bennett
Secretary-Treasurer, ESBC

19 December 2000