BOREUS

NEWSLETTER OF THE ENTOMOLOGICAL SOCIETY

OF BRITISH COLUMBIA

Volume 19, Number 2 December 1999

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SOCIETY BUSINESS

Entomological Society Of British Columbia, Fall 1999 Business Meeting

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ENTOMOLOGICAL SOCIETY OF BRITISH COLUMBIA

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

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Web page: http://www.harbour.com/commorgs/ESBC/index.html

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 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 June 2000 issue is **May 19, 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.

The Centennial of Our Society

We are approaching our 100th annual meeting in 2001. The first was held on 13 Mar 1902 in Queen's School, now called Queen Alexandra's Elementary on 10th Ave and Clark Drive in Vancouver where the first Secretary, Mr.(later Captain) R.V. Harvey was Principal. In 1901 the Dominion Entomologist, Dr. J.Fletcher, visited British Columbia to consult with an immigrant Scot, Mr. Tom Wilson, a farmer from Harrison who was running the Plant Inspection and Fumigation Station in Vancouver for the Government of Canada. Wilson introduced him to Harvey, an amateur entomologist as well as a school principal, and they proposed forming a Society "to unify the work of those particularly interested in the study of insects in the Province" (Wilson 1912).

The newly appointed Inspector of fruit pests, Mr. R.C.Treherne who worked out of the old Vancouver Court House before moving to Agassiz, revived the Society with a meeting at Aberdeen School on 9 Dec 1911 (for 24 paid-up members). The next meeting was not until 9 Jan 1913 in the Botany Room of the Parliament Building, Victoria. Tom Wilson, the President in 1912, gave a brief historical review in his address to the evening session (Wilson 1912). Also in this issue of the Proceedings there is a photo of 18 members, 17 of them identified. In the 1914 issue of the Proceedings (Number 4 N. S. Jan 1914), Treherne writes that the Meeting "on 23-24 Jan 1914 was the 13th Annual Meeting of the Society". Presumably the Executive or a few members got together in 1909, 1910 and early in 1912 to make up this number or perhaps Treherne included the summer meetings of the Society which appear to have been held in the Interior of the Province. It seems most unlikely that such a meticulous Secretary could miscount by 3!

In 1932 R.Glendenning (1933) who replaced Treherne at the Dominion Experimental Farm at Agassiz, writing about some 'dusty ' old files of correspondence he obtained from the Plant Inspection Office in Vancouver, states that the Society was founded in 1901. He also refers to the Rules of the Society being adopted at the spring quarterly meeting in April 1902. Several of them refer to the founding of the Society in 1901, but we believe that this was merely the year that the Society was proposed.

In the next piece of history we found, G. R. Hopping (1939) from Vernon mentions the 'original' document of the organization of the Society. It was found in about 1938 by Francis Kermode, Director of the Provincial Museum which was originally in the Parliament Buildings. The document was dated 18 Jan 1902, and preceded the 1st Annual Meeting by 2 months which makes the Society 98 years old at the start of 2000.

Our 50th Anniversary was celebrated in Vol. 48 of the Proceedings, dated 1951 but not printed until 15 Aug 1952. (No, Dr. MacCarthy wasn't the editor, it was a committee!). In accordance with Treherne's numbering, the meeting held on 14 June 1951 was called the 50th and a photograph of 53 members is included on p.5 of that issue. Some of them, including Don Chant, Ron Forbes, Doug Finlayson, Jack Gregson, Mac MacCarthy, Chet Nielson and Peter Zuk are sighted occasionally, and a few are still interested in entomology nearly 50 years later! This issue contained 7 papers reviewing 50 years of different entomological topics in the Province.

The Society may wish to commemorate our centennial with a special meeting and issue of the Journal. We conclude that the 100th Meeting will be in 2001 and that Vol.98 of the Journal would be our Centennial Number.

Boreus welcomes your comments and suggestions for this celebration.

P. and E.M.Belton & H.R.MacCarthy

References:

- Downes W, 1952, Fifty years of entomology on Vancouver Island. Proceedings of the Entomological Society of British Columbia. (1951) 48:9-16 (15 Aug 1952)
- Glendenning R, 1933, Notes on the life history of the Entomological Society of British Columbia. Proceedings of the Entomological Society of British Columbia. 30: 3-7
- Hopping GR, 1939, The Entomological Society of British Columbia. The Canadian Entomologist 71: 31-35 (Plate 14 reproduced the figure of the 19 Jan 1913 meeting in the Botany Room of Parliament Buildings, Victoria from the 1912 Proceedings below)
- Treherne RC, 1914, Secretary-Treasurer's Report. Proceedings of the Entomological Society of British Columbia. 4 (NS): 5-6
- Wilson T, 1912, Presidential Address. Proceedings of the Entomological Society of British Columbia. . 2 (NS): 74-77

Suggestions:

- Updating our 50 year Index for the Journal
- Finding and Publishing group photographs
- Continuing the biographies of members (perhaps rewriting and reprinting Obituaries from the Journal)

SCIENTIFIC NOTES AND RECORDS

First Canadian Breeding Record for *Tanypteryx hageni* (Odonata: Petaluridae)

Rex D. Kenner

Tanypteryx hageni (Selys) had been described as possibly "one of our rarest dragonflies" (Cannings and Stuart 1977). Its range extends from California to southern BC. Prior to this year it had been reported 9

times in BC, 3 of these from the Cypress Bowl area (Kenner and Lane 1997). Although breeding sites are known in each of the 3 states, no breeding sites have been found in BC. Unlike our other species of Odonata whose larvae live in standing or running water, *T. hageni* larvae live in permanent burrows which they excavate in moss or muck through which water is seeping. The burrows are described as L-shaped with each the vertical and horizontal arms being about 10 cm long (Svihla 1959). At night the larvae come out of the burrows and wander over the surface looking for prey. It is estimated that they may take as long as 5 years to reach emergence.

Last summer (1999) was a good one for *T. hageni* in the Lower Mainland with many sightings reported. On 1 September 1999, Ian Lane found and photographed several *T. hageni* larvae in their burrows in a

seep in Cypress Provincial Park. Two days later, he and I returned to the site and found at least 10 occupied burrows and an exuvia. The site is on the uphill side of a wide trail cut across a shallow slope. A very small stream flows down the slope and through the site. All but one of the burrows we found were horizontal holes dug into vertical faces of the cut.

One of the burrows was built under a "waterfall" in the streamlet itself: the rest of them were in the slower flowing seeps at the sides. In some cases, small balcony-like extensions had been built out from the cut face which seemed to serve the double purpose of keeping water in the burrow and giving the larva a place to sit and

observe its surroundings. The exuvia, although missing its head is clearly observable as *T. hageni* (Cannings and Stuart 1977). Territorial behavior by males, mating and

oviposition have all been observed at the site.

In view of the development planned for Cypress Provincial Park, the future of this, the only known breeding site for the provincially blue-listed *T. hageni* in Canada, is uncertain.

References:

- Cannings, R.A. and K.M. Stuart. 1977. The Dragonflies of British Columbia. B.C. Prov. Mus. Handbook 35. Victoria, B.C. 254 pp.
- Kenner, R.D. and I. Lane. 1997. Photographic records for Lower Mainland dragonflies. Discovery 26: 51-53.
- Svihla, A. 1959. Life history of *Tanypteryx hageni* Selys (Odonata). Trans. Amer. Entomol. Soc. 85: 219-232.

Request for Records for Odonata in BC

Rex D. Kenner

As a volunteer working out of the Spencer Entomological Museum (SEM) at UBC, I maintain a database containing records for Odonata in BC and the Yukon. The database is mainly based on the specimens in the SEM but with additional records from a number of sources including the CNC, private collections and photographic collections. Missing from the database are the records from the RBCM but those have been promised once the computerization of that collection is completed.

To be included in the database a record should be backed by either a specimen of a clearly identifiable photograph. I am willing to identify specimens, including final instar larvae, or to examine appropriate photographs. Records should include: locality (as specific as possible), date of collection, collector and species (if the specimen or photograph cannot be examined). Additional information such as sex, where

the specimen or photograph is archived, how the specimen is prepared (pinned, in alcohol, in envelope), determiner and any other observations will be most appreciated. Anyone who has records that they are willing to contribute to the database is requested to contact Rex Kenner: via email at <kenner@zoology.ubc.ca> or care of the Spencer Entomological Museum, Department of Zoology, UBC, Vancouver, BC V6T 1Z4 or by phone at (604) 822 3379.

Ceratopogonidae Studies

Art Borkent works as an independent systematist on Ceratopogonidae (biting midges, no-see-ums) and related flies and has research associate status with the Royal B.C. Museum and the American Museum of Natural History. Working on a worldwide level, he has completed numbers of revisions of genera and has published extensively on the phylogenetic relationships between the 103 extant and 22 extinct genera known in this family. The group is an excellent one for understanding evolutionary relationships, for three reasons. First, the family is incredibly diverse; there are 5331 named species on the planet but there are likely at least 3-4 times that many actually present. Second, the immature stages are morphologically diverse; therefore species differences can be studied in each of the stages and the results between the stages compared to provide optimal evolutionary trees. Finally, biting midges are incredibly well represented in amber and much of Art's work over the past few years has involved studying these. Over 260 described species of Ceratopogonidae from 15 amber deposits, ranging in age from 15 - 135 million years (based on nearly 3000 specimens) are now known. Most of these fossils are in

exquisite condition and provide an excellent basis for further testing and understanding phylogenetic relationships.

Another major effort underway is to interpret the larvae and pupae of the Ceratopogonidae. At the present time, generic keys are not available for these stages (the last of the families of Nematocera for which this is unavailable) and these stages are also an important source of phylogenetic information.

Art is also heavily committed to a large biodiversity project sponsored in part by the World Bank in Costa Rica, where he serves on the organizing committee of the Diptera portion of the project. Further information on the Ceratopogonidae of Costa Rica is available at the following webpage:
http://www.inbio.ac.cr/papers/Ceratopogonidae/Texto38_1.htm

Further information on Art's activities and publications may be found at -

http://www.bishop.hawaii.org/bishop/ento/dipterists/html/borkent-a.html

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PROFILES

Andrena Kamp

I am a student working in Dr. Michael Bidochka's laboratory in the Biology Department at Trent University in Peterborough, Ontario.

My research in insect pathology began last year when as an undergraduate I had the opportunity to do an undergraduate thesis with Dr. Bidochka. My project was to look at the population structure of the insect pathogenic fungus *Metarhizium anisopliae* in Ontario. We are interested in exploiting Canadian isolates of this fungus for Canadian biocontrol applications. Before we set out to test various isolates for biocontrol we wanted to gain some understanding of their molecular biology and population genetic structure. Using a variety of molecular markers, both neutral and specific, I assessed genomic variability in isolates collected from across Ontario. We found that this fungus is clonal and apparently no sexual or other recombinational processes known to fungi occurred. We also found that clonal groups of this fungus were associated with habitat, not ability to infect certain taxa of insect. This is important because the paradigm that we work under in insect pathology is

that insect host drives the population structure of insect pathogenic fungi, but this research suggests that habitat, not insect-host drives the population structure of insect pathogenic deuteromycetous fungi. This also has important implications in biocontrol in certain environments such as agricultural versus forest pest insects.

More recently, I have started a new project, this time as a Masters student in the Watershed Ecosystems Graduate Studies Program. I am now working on doing a genetic analysis of pleiomorphic deterioration in *M. anisopliae*. Pleiomorphic deterioration is a phenomenon that has been observed both in plant pathogenic fungi and insect pathogenic fungi, and is more commonly referred to as the "dual phenomenon". This phenomenon is observed when fungal cultures are repeatedly subcultured, they start out producing abundant conidia, but deteriorate to mycelial growth after a number of subcultures. We are studying this fungus in hopes that someday it can be used as an effective alternative to chemical pesticides for agricultural pests, but as the conidia are the infective structures, stability in their production is required for commercial use. We hope to uncover the genetic mechanisms that are associated with conidia production so that in the future, it may be controlled for comercial use. Cultural stability would be another step towards the commercialization of this environmentally safe biological control agent and to reducing chemical pesticides in the environment.

Editor's Note: Andrena's home is Edmonton, Alberta. In the summer of 1999 she was working at Watson Lake, BC. Andrena's e-mail address is <akamp@trentu.ca>.

Rex Kenner

My interest in insects started in high school biology where each student had to make a collection of 100 insects identified to Order. I continued collecting for a couple of years after that but then drifted away from matters entomological for about 25 years while I pursued a career as a physical chemist. My interest was reawakened in 1994 on a Vancouver Natural History Society outing when a dragonfly flew by and the leader remarked "If that came closer I could tell you what species it is." I had been a birder for years and knew what to look for when I saw a bird but I realized that I hadn't a clue what to look for on a dragonfly. I set out to find out and got hooked.

I was already stuffing birds as a volunteer in the Cowen Vertebrate Museum at UBC, so it seemed natural to walk down the hall and ask Karen Needham if there was anything I could usefully do with

dragonflies in the Spencer Entomological Museum. She set me to work doing remedial curation on the odonate specimens in alcohol.

I have come a long way since then. I went "back to school" in order to take Dr. Scudder's entomology course (which Karen taught that year), progressed far enough with the dragonflies to get a couple of

contracts with the Conservation Data Centre (looking for rare dragonflies), completely reorganized the odonate collection in the SEM, described the larvae of *Leucorrhinia patricia* Walker so that I could identify the unnamed Leucorrhinia larvae in the collection, started a database for Odonata in BC and have now staarted expanding my horizons to include other orders. Most recently, Karen and I landed a couple of contracts to survey the insects of Burns Bog. Although my interest is largely museum-based (e.g. identification and distribution), I also use my knowledge of dragonflies as a hook to get people interested in the conservation of wetlands. To that end, I am currently working on a field guide for the Odonata of the Lower Fraser Valley. I also give talks to the public, lead dragonfly walks for various societies and help instruct in various courses.

Rex D. Kenner

Volunteer Assistant Curator

Spencer Entomological Museum

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Suzie Lavallee

Suzie's hometown is Sicamous, BC. She started her undergrad studies at Okanagan University College, and completed them at UBC where she also earned a M.Sc. Her first field work was as a "mouser" (live-trapping mice). She says that during the winters, mousers did bug sorting to keep bread on the table. It was then that that she was "enticed into the wonderful world of carabid beetles". Her Master's thesis studies were conducted on carabid beetles at the Sicamous Creek Research Site. For her PhD thesis she will be examining the movement dynamics of three or four species of carabids in riparian areas. She says that this research was instigated by her continual frustration with questions she could not answer in her Master's thesis. Her major advisor for her PhD studies is Dr. John Richards, UBC Department of Forest Sciences, Faculty of Forestry. She is looking forward to her first field season at the Malcolm Knapp Research Forest near Mission, BC. If you wish to contact Suzie her e-mail address is <suzie_darren@telus.net>.

Bob McVickar

Bob was born in North Vancouver in 1933 and grew up in the lower mainland. He graduated from

UBC in the 50's with a BA in English. He spent most of his working life in the furniture manufacturing business first in England and then in British Columbia. His late flowering interest in entomology dates from a chance reading of V.B. Wigglesworth's book "The Life of Insects" which he read at one sitting.

Inspired by Wigglesworth's book he acquired various field guides to the insects and was soon

hopelessly hooked,. This state of affairs continues to this day. Currently Bob is helping

Rob Cannings with a project relating to the occurrence of fireflies in British Columbia. Bob's e-mail address is <bmcvicke@sicamous.com>.

Jamie Marshall - Junior Entomologist

My name is Jamie Marshall. I am thirteen years old and one of my favorite hobbies is raising and providing a habitat for caterpillars and then releasing them when they hatch into butterflies or moths. I have been interested in lepidoptera since I was seven years old. My parents have had to put up with many jars of lepidoptera in various stages all over the house. I have had up to fifty caterpillars, cocoons, and/or chrysalises in the house at one time. I am very careful to release the adult butterfly or moth in the area where I found it.

Every once in a while, my caterpillars go on a trip with me because I can't find a caterpillar-sitter. I have taken some of them car camping with me, and a lucky few were able to experience what it is like to go kayaking on a stormy lake on a camping trip. Sometimes it is a challenge to find the food plant they prefer while away from home but they are always very well fed and looked after. I am lucky to have three mentors who have helped me with my hobby. They are Dr. Phil Jones, an old family friend, Dr. Art Borkent who is my next door neighbor, and Bonita Lingenfelter, a naturalist who writes a nature column for the local Salmon Arm newspaper. She has been wonderful. She supplied me with almost all of the plants in my garden. My parents have also helped and encouraged me a lot. My dad is a biology lab instructor at OUC.

I have encouraged lepidoptera to come to our acreage by making a six- by eight-meter butterfly garden with my mom. The garden consists of a puddling dish, a pond with flowering plants, and many different types of larval food sources and adult nectar sources. Some of my successful larval food plants were lovage (for anise swallowtail), nettle (for milberts tortishell, red admirals, etc.), evening primrose (for white lined sphinx), tomato plants (for tomato hornworms), and fireweed (for white lined sphinx and little yellow fuzzy caterpillars which I am having trouble identifying). Among the best nectar sources for butterflies and sphinx moths were coneflowers, black-eyed susans, buddlei, lilacs, and evening primrose. I also had many other flowers that didn't attract many butterflies or sphinx moths. All of my plants must be in barrels because of pocket gophers. I also entered the garden in a contest and won first prize.

One resource that I am lacking is a complete book of caterpillar identification for my area. I have been looking for one for a long time. I am looking forward to the publication of the book, "Butterflies of British Columbia". Now that winter is here, I am thinking about what I should do next year to make my garden better. I am also wondering how I should spend my prize money. (Note: Jamie is at <tmarshal@jetstream.net>.)

RUMORS AND THINGS

Fireflies Change History?

Contributed by Bob McVickar

Quoted from "Gods, Graves and Scholars" by C.W. Ceram. Pages 376 and 377.

And so Cortes and his army--or rather, his horde increased by Indian confederates to a total of 266 men

set out into the plain, the Tierra Caliente. Through heavy downpours of rain and storm his scouts brought word that Narvaez had reached Cempoalla. Now only a river lay between him and his enemy.

Narvaez meanwhile, far from lacking in experience; and military strategy, was making toward the river to confront Cortes that very evening. But in view of dreadful weather he inclined to heed the grumbling of his soldiers. Convinced that Cortes could not be expected on such a night, and trusting in the superiority of his weapons, he withdrew again to the town and retired for the night.

Cortes crossed the river. The enemy's were taken by surprise. On Whitsunday night, 1520,

with their war-cry "Espiritu Santo!" his scanty, ill equipped troops, with him at their van, burst into

Narvaez's camp which was bristling with men and weapons.

The surprise attack was a complete success. In a brief but fearful night battle, lit by torches and here

and there a flash of cannon fired but once, the camp was captured. Narvaez, defending himself from the top of a temple tower, caught a spear in his left eye. His scream of pain was followed by Cortes's jubilant "Victoria!"

It was said later on that the cocuyos, huge fireflies of the region, had come to the aid of Cortes and his

just cause by suddenly arriving in swarms, so that the defenders believed themselves attacked by a vast army bearing lighted matchlocks. In any case the victory went unquestionably to Cortes. Its full extent showed itself

when most of the vanquished offered to swear fealty to him, and when he inspected his rich booty of cannons, guns, and horses, finding that at long last, for the first time in the history of his Mexican expedition, he was in command of a really powerful striking force.

THE BOOK CORNER

Good News! In February 2000, Cris Guppy and Jon Shepard, the authors of "The Butterflies of BC", confirmed that their long-awaited book is now at the publishers. It is hoped that it will be released later this year or in early 2001. (Ed. Note: I knew there had to be at least one good reason for not being off the mark earlier, i.e., Dec. 1999, with this issue of *Boreus*.)

The following information will allay some rumors about impending publications and or generate some new ones.

- In correspondence with John Acorn (Edmonton) he says that it is true that he and artist Ian Sheldon are working on a butterfly book for BC. He hopes to produce a series of introductory butterfly guides for many parts of North America. However, of immediate interest, they are working right now on similar books treating the common insects of various regions. Whereas the butterfly books are in the conceptual stage, "Bugs of BC" is complete including all paintings by Ian Sheldon. They hope it will be out later this year. It will feature 125 of the most noteworthy insects and related arthropods of BC.

- Several sources have passed on the information that Robert Michael Pyle in Washington State is currently working on "Butterflies of Cascadia", which will probably include southwestern BC. The gestation period for the Cascadia publication may be lengthened since the coverage area may expand to include the northwestern U.S., not just Washington State and adjacent BC. R.M. Pyle is the author of the "National Audubon Society Field Guide to North American Butterflies".
- Jeffrey Glassburg of New Jersey has authored several field guides: "Butterflies through Binoculars, A Field Guide to Butterflies in the Boston-New York-Washington Region"; and "Butterflies through Binoculars, A Field Guide to the Butterflies of Eastern North America", published in April 1999. Suggested retail price for the latter is approx. $30.50 (Can.). Another field-guide which maybe of interest to "snow-birders" is "Butterflies through Binoculars: A field, finding, and gardening guide to Butterflies in Florida". The availability of this book is unknown. Rumor has it that there is, or will be, in this series a book titled "Butterflies through Binoculars: The West".

SOCIETY BUSINESS

ENTOMOLOGICAL SOCIETY OF BRITISH COLUMBIA

Fall 1999 Business Meeting

St. John's College, University of British Columbia

Vancouver, BC

21 October 1999 3:00 pm - 3:41 pm

SUMMARY OF ACTION ITEMS

Transfer of funds to Term Deposit	**R. Bennett**
Solicit Members' approval to publish addresses in *Boreus*	**Bennett / P. Jones**
Web Site development	**W. Strong**
Nominations for President, President-Elect and three Directors	**All**

1) Call to Order (Murray Isman)

Meeting called to order at 3:00 pm.

2) Approval of Agenda (Isman)

Agenda approval **carried** by general concensus.

3) Approval of Minutes from Fall 1998 Business Meeting (Isman)

Approval of Fall 1998 Business Meeting Minutes as circulated to Membership earlier in *Boreus* and as posted on ESBC web site moved by Neville Winchester, seconded by Les Safranyik, **carried**.

4) Business Arising from Minutes (Isman)

Robb Bennett reported that disposal of ESBC library duplicates is proceeding apace - about 1/2 of the duplicates have been shipped out to loving homes.

5) President's Report (Isman)

Isman read the following report:

"It has been a pleasure serving the Society as President this past year, as it was when I previously served in the same capacity in 1987-1988. The President generally has one of the easiest roles to play on the Executive - organizing the spring and fall executive meetings, and some infrequent correspondence with external organizations. That is not to say that the President cannot bring new initiatives to the table, but this President has used his overflowing plate of other professional responsibilities as an excuse to serve in little more than a caretaker's role. That I have been able to do just that for the past year is a most positive reflection on the overwhelming efforts of those in the Executive who have a more hands-on role.

"In particular, I must thank our Secretary-Treasurer, Robb Bennett, for keeping all of us on track with our duties and the Society in such good fiscal health. We all owe a debt of gratitude for the outstanding job that Robb does for the Society on our behalf. Dave Raworth, as editor of our *Journal*, also bears a significant responsibility and

the quality and vitality of our journal is a credit to his stewardship. Perhaps the most important transition for the Society this past year was the change in editorship of *Boreus*. For over three years Troy Danyk kept our newsletter afloat, twice a year, occasionally single-handedly, and the entire time while conducting his doctoral studies outside of the province! On behalf of the Society I would like to offer my sincerest thanks for a job well to Troy, and wish him the best of success in the future. Fortunately, editorship of *Boreus* passed smoothly to Phil Jones earlier this year, and based on the June 1999 issue, our newsletter is in good hands for the foreseeable future.

"Although I will not single out other members of our Executive, suffice it to say that all had a hand in maintaining the quality and stature of our Society over this past year. I found it particularly encouraging that thanks in part to electronic mail, so many members of the Executive were keen to contribute their opinions on a wide range of matters of pertinence to the Society. Finally, I would like to thank Mac McNair who is leaving the Executive after two terms as a Director. I should also extend thanks to our other outgoing Director, Rory McIntosh, but instead will congratulate him on being chosen our next President-Elect, which means that we will have Rory on board for a further three years!

"I would like to welcome the new Directors, Hugh Barclay and Rob Cannings, although for Rob this is not his first stint on the Society's Executive, and may well be his third. Finally, I wish our incoming President, Neville Winchester, the best wishes for a successful term at the 'turn of the century.'

"When I previously served as President (1987-1988), I took most pride in seeing the editorship of the *Journal* transfer (after 30-some years) from H.R. 'Mac' MacCarthy to Richard Ring. This year my major contribution to the Society has been the organization of our annual meeting, to be held tomorrow at St. John's College, on the U.B.C. campus. Although I could have delegated some responsibilities, because of the scope of the event, I was able to handle all aspects - from scientific program to catering - myself. As Chair of the MacCarthy Lecture Committee and with the Lecture set for U.B.C. this year, it made sense to coordinate the Lecture with our Society's annual meeting.

"In summary, it has been a pleasure serving the Society this year and I look forward to continued association with all of you for the years to come."

Approval of President's report moved by Rob McGregor, seconded by Neville Winchester, **carried**.

6) Secretary-Treasurer's Report (Robb Bennett)

Currently, ESBC is stable with 173 Members (133 paid-up (including 14 new members signed up at AGM registration desk), 34 one year in arrears, and 6 Life Members), 60 Subscribers (53 paid-up plus 7 in arrears: 17 Canadian, 25 American, 4 Aust/NZ, 3 Great Britain, and 4 Europe), and 81 Exchange Partners on the mailing lists.

See attached Financial Report. Society is doing well with about $1,700.00 receipts in excess of expenditures. Bennett will be investing an additional $5,000.00 of ESBC bank account funds in a term deposit.

Acceptance of Secretary-Treasurer's Report moved by Les Safranyik, seconded by Bob Vernon, **carried**.

7) Journal Editor's Report (Dave Raworth)

Raworth read the following report:

"The December 1998 issue of the Journal of the Entomological Society of British Columbia (Volume 95) was printed and distributed. It contains 14 peer-reviewed, scientific articles: 2 from Washington; 1 from Oregon; 1 from Ontario; and 10 from British Columbia. The issue was designed and typeset by David Raworth, David Holden and Peter and Elspeth Belton; the illustration on the cover was drawn by Rob Cannings; Maurice Perret

and staff, Simon Fraser University Reprographics did the printing; and Robb Bennett and the Beltons handled the distribution. Many thanks to all these people, and to the anonymous reviewers who took the time to carefully read the manuscripts and make helpful comments. Your efforts are evident in the quality of this volume.

"Volume 96 is well underway, with 14 scientific papers in various stages of review and preparation. I encourage authors to submit digital figures in TIF, GIF or JPG format, when possible, as well as the usual hard copy. Dave Holden will incorporate the figures directly into the text. This procedure makes possible a complete galley proof - what you see is what will be printed; and it reduces the print shop costs associated with photography and figure size reduction (about $25 per figure).

"Please remember to submit manuscripts for publication in a given year, by 1 September of that year. Manuscripts will be considered after that date, but time constraints may require publication the following year."

"Finally, I want to give a special thanks to Peter Belton for his help and guidance through the publication process - I have learned many things, including the art of cut-and-paste to edit camera-ready copy."

Approval of Journal Editor's report moved by Neville Winchester, seconded by Hugh Barclay, **carried**.

8. ***Boreus*** **Editor's Report (Phil Jones)**

Isman introduced ESBC's new Editor of *Boreus*, Dr. Phil Jones to the Membership. Jones read the following report:

"The Spring 1999 issue of Boreus (Volume 19(1)) was distributed in July 1999. I acknowledge with many thanks the assistance provided by Robb Bennett.

"The ESBC Member List was published in that issue. Please note that at the Executive Meeting, April 23, 1999, it was agreed that with the mailing of the year 2000 membership dues invoices, a request would be made of the Members to publish Member's addresses in Boreus. This undertaking would be with the understanding that their addresses will not be published on the ESBC website. The rationale for this listing is to have a better mechanism for members to interact.

"The Fall/Winter issue of Boreus (19(2)) will continue to include profiles of members, whether they are professionals or amateurs. In addition there will be short reports on members interests and research. Commencing at the end of October I will be contacting members for input to this next issue which should be ready for distribution in December."

Approval of *Boreus* Editor's report moved by Dave Gillespie, seconded by Les Safranyik, **carried**.

- Web Editor's Report (Ward Strong)

No formal report was presented. Strong outlined proposals for expanding the ESBC web site stressing his interest in promoting it as a communication tool for ESBC members and non-members, especially amateurs. Amateurs make significant but often unrecognized contributions to entomology in BC. Strong will be pursuing development of a directory of BC entomologists (in self-registration format) and an information clearinghouse. These developments require transferring the web site to a new server to enable uploading of information by users (necessitates usage of CGI scripts). This will entail some new costs to ESBC; Executive has given its approval to go ahead. Strong concluded with a plea for assistance from any interested people.

Approval of Web Editor's report moved by Mac McNair, seconded by Terry Shore, **carried**.

10) Graduate Student Scholarships Committee Report (Rory McIntosh)

Seven applications for ESBC Graduate Student Scholarships were received this year: three from PhD students, four from MSc students. Applications were numerically rated independently by four reviewers, based on criteria

of a) scientific importance, candidate's qualities, and c) proposal qualities. All proposals were of high quality. Troy Danyk (PhD) and Deepa Pureswaran (MSc) were chosen to receive scholarships.

Discussion - Discussion centred on the evolution of fair and simple to apply judging criteria. McIntosh is stepping down as Committee Chair; new Chair and Committee will continue development of criteria. McIntosh will provide Bennett with summary constructive comments relevant to each unsuccessful application. Bennett will pass comments on to applicants. Successful applicants (Danyk and Pureswaran) were notified just prior to this meeting.

11) Other Business

1. Student Paper Presentation Awards (Mac McNair)

Deepa Pureswaran (MSc) and Jeremy Allison (PhD) were awarded the James Grant and Harold Madsen Awards respectively. Awards are worth $100 each and are sponsored annually by the North Okanagan Naturalists Club (JG) and Phero Tech Inc (HM). ESBC gratefully acknowledges their continued support.

- Executive Elections Report (Isman)

For the 2000 fiscal year, Rory McIntosh is President-Elect, Rob Cannings and Hugh Barclay are incoming Directors. Unfortunately, Rory McIntosh, has very recently accepted a full-time position as Provincial Insect and Disease Specialist in Saskatchewan starting in January 2000 and will not be able to fulfill his obligations to ESBC (Pres.-Elect 2000, President 2001, Past-President 2002). ESBC will miss his input. In order to cover the Executive "shortfall" candidates for President and President-Elect (as well as for new Directors) will be placed on the Ballot for 2001 Executive elections (in summer 2000). New President will take over McIntosh's role at the 2000 AGM.

Thus ended the second reign of Murray Isman. At this point he passed the burden of leadership on to his successor, Neville Winchester.

12) Adjournment

In his first act as President of ESBC Winchester called for any other new business. There being none, Ward Strong moved that the meeting be adjourned. Seconded by Rory McIntosh, **carried** at 3:41 pm.

Minutes submitted by:

Robb Bennett, Secretary

28 October 1999

Entomological Society of British Columbia

1999 Year-End Financial Statement (1/x/1998-30/ix/1999)

Forwarded

1. Bank balance forwarded on 30 September 1998	**10,546.55**

Receipts

1. Dues		3,426.10
Memberships (incl. 120.75 US exchange)	2,395.75	
Subscriptions (incl. 90.81 US exchange)	1,030.35	
2. Publication		6,389.19
Page/reprint charges, back issues (incl. 290.63 US exchange)	6,389.19	
3. Other income		925.51
Interest	40.51	
N Okan. Naturalists Club (J. Grant Student Award -- 1998)	100.00	
1998 AGM registration	785.00	
4. Total Receipts		**10,740.80**

Expenditures

1. Publication		6,993.02
1998 Journal typesetting	1,007.62	
1998 Journal printing	5,803.00	
Reprint stapling	182.40	
2. Other expenditures		2,035.10
Student awards (Morewood/Mondor, Huepplesheuser)	200.00	
Scholarships (Fagan, DeLury)	1,000.00	
Society registration (1999)	25.00	
Web site registration (1999)	273.60	
Bank error (re: US$ deposit)	40.00	
1998 AGM expenses	414.00	
Service charges	82.50	
3. Total Expenditures		**9,028.12**

Balance

10,546.55 + 10,740.80 - 9,028.12	**12,259.23**

Bank Balance on 30 September 1999 $12,259.23

Other Assets (Island Savings Term Deposits)

Term deposits 5 year @ 5%	20,000.00	
3 year @ 3.8%	1,000.00	
Additional Interest	0.71	
Total Other Assets		**21,000.71**

Statement submitted October 21, 1999

Robb Bennett, ESBC Secretary/Treasurer