PROCEEDINGS OF THE 52nd ANNUAL MEETING OF THE
ENTOMOLOGICAL SOCIETY OF ALBERTA AND THE
JOINT MEETING OF THE ENTOMOLOGICAL
SOCIETIES OF ALBERTA AND SASKATCHEWAN

October 28-30, 2004
Lloydminster, Alberta
TABLE OF CONTENTS

Entomological Society of Alberta Executive.................................2
Entomological Society of Saskatchewan Executive...........................2
Joint Meeting Committees..........................................................2
President’s report.........................................................................3
Program of events......................................................................4
Abstracts of papers.....................................................................9
Author index to abstracts.............................................................20
Minutes of the fall executive meeting............................................22
Minutes of the annual general meeting........................................25
Annual report of the Northern Director.......................................29
Annual report of the Central Director..........................................32
Annual report of the Southern Director.......................................34
Annual report of Regional Director to ESC.................................35
Annual report of the Webmaster..................................................36
Treasurer’s interim financial report..............................................37
Photographs...............................................................................38
ESA membership list, Fall 2004..................................................44

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Entomological Society of Alberta- Executive for 2004

President.................................................................Heather Proctor
Vice President..........................................................John Acorn
Past President.........................................................Derrick Kanashiro
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Entomological Society of Saskatchewan-Executive for 2004

President.................................................................Jack Gray
Past President.........................................................Cedric Gillott
Vice President.........................................................Philip Curry
Secretary..............................................................Larry Grenkow
Treasurer...............................................................Dwayne Hegedus
Officers.................................................................Brian Galka
                                      .................................................................Lorraine Braun

Joint Meeting Committees

Joint Meeting Co-Chairs..............................................Heather Proctor
                                      .................................................................Cedric Gillott

Local Arrangements Committee................................Alec McClay
                                      .................................................................Michael Crowe
                                      .................................................................Philip Curry

Program Committee................................................Martín Erlandson
                                      .................................................................Maya Evenden
                                      .................................................................Cedric Gillott
                                      .................................................................Jennifer Otani

Registration and Budget Committee..............................Lorraine Braun
                                      .................................................................Dwayne Hegedus
                                      .................................................................Julie Soroka
                                      .................................................................Darryl Williams
PRESIDENT’S REPORT

Thanks for staying; I will try to make this brief and painless.

This is the fifth time we, the Entomological Society of Alberta, have met jointly with the Entomological Society of Saskatchewan. It has proven such a success that the ESS President, Jack Gray, has proposed that we get together at least every five years. Our similar climates, crops, and entomofauna make this a particularly sensible and compatible combination of societies.

Many people came together to help create this excellent program and convivial atmosphere. Because this is an ESA business meeting, I would like to thank a few of our members in particular, without whose very hard work – going far beyond the call of duty – this joint meeting would not have come about: Alec McClay on the Local Arrangement Committee; Maya Evenden on the Program Committee, and Daryl Williams on Registration and Budget.

I became vice-president elect in Lethbridge in 2002, just a few months after returning from Canada after five years in Australia. I was ambushed during the social when Rob Longair judged I had arrived at the perfect state of alcohol-induced susceptibility. At this meeting we have maintained the tradition, and will later be revealing the names of our susceptible nominees.

Over the past two years of being vice and actual president, I have learned a great deal about entomology and entomologists in Alberta, much more than I would have had I not been part of the executive. Because of the ESA I have been “repatriated” to Albertan entomological concerns, otherwise I would still be thinking in Queensland mode about papaya fruit fly, BT cotton, and invading fire ants instead of West Nile Virus, flea beetles, and cabbage seedpod weevils. Special thanks to Hector Carcamo, past- and past-past-president during my tenure, who helped me with details of protocol and ESA tradition.

Although my stint as president will be over in a few months I will continue to be associated with the ESA in the upcoming year, not just in my dotage as past-president, but helping with the Joint Annual Meeting with the Ent Soc of Canada in Canmore. Thanks to all members, and student members especially, for helping to make my presidential year and this meeting so enjoyable.

Dr. Heather Proctor  
ESA President  
October 2004
Joint Annual Meeting  
Entomological Societies of Alberta and Saskatchewan  
October 28-30, 2004  

PROGRAM  

Thursday October 28, 2004: Meeting begins 2:00  

Introduction and Welcome: 2:00-2:15  
Entomological Society of Alberta President: Heather Proctor  
Entomological Society of Saskatchewan President: Jack Gray  

Thursday Oral Presenters: Please submit your PowerPoint CDs or slide carousels to the audio/visual operator by 1:45.  

Contributed Oral Papers: * indicates student paper: 2:15-5:30  
Session moderator: Derek Sikes  

• 2:15-2:30 Species limits and biogeography of Grammia tiger moths: Molecular and morphological evidence. C. Schmidt* and F. Sperling, Dept. Biological Sciences, University of Alberta.  
• 2:30-2:45 Comparison of Bayesian inference with parsimony in a possible case of morphological long-branch attraction (Coleoptera: Silphidae: Nicrophorus). D.S. Sikes, Dept. Biological Sciences, University of Calgary.  
• 2:45-3:00 Reconstructed phylogeny and biogeography of species of Brychius Thomson, 1859 (Coleoptera: Haliplidae). T. Mousseau*, Dept. Biological Sciences, University of Calgary.  
• 3:00-3:15 Molecular variability of Ceutorhynchus neglectus (Coleoptera: Curculionidae). R. Laffin1*, L. Dosdall2 and F. Sperling1, 1Dept. Biological Sciences, University of Alberta, 2Dept. Agriculture, Food, and Nutritional Sciences, University of Alberta.  
• 3:15-3:30 Soil biosecurity: What we don’t know can hurt us. S. Bromilow*, H. Proctor and D. Walter, Dept. Biological Sciences, University of Alberta.  

• 3:30-3:45 REFRESHMENT BREAK  

Session moderator: Maya Evenden  

• 3:45-4:00 Modeling the molecular architecture of lepidopteran peritrophic membrane. D. Hegedus, Agriculture and Agri-Food Canada, Saskatoon Research Centre.
• 4:00-4:15 Adult eclosion and reproductive diapause of the ash leaf conecroller, *Caloptilia fraxinella* (Lepidoptera: Gracillariidae). G. Armitage1*, M. Evenden1, B. Heming1, R. Gries2, 1Dept. Biological Sciences, University of Alberta, 2Dept. Biological Sciences, Simon Fraser University.

• 4:15-4:30 Agroecology of ground beetles in southern Alberta. S. Bourassa1,2*, J.R. Spence1, H. Cárcamo2, R.E. Blackshaw2, F.J. Larney2 and K. Floate2, 1Dept. Renewable Resources, University of Alberta, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre.

• 4:30-4:45 Sex pheromone components of the large aspen tortrix, *Choristoneura conflictana* (Lepidoptera: Tortricidae). M. Evenden1, R. Gries2, G. Gries2, 1Dept. Biological Sciences, University of Alberta, 2Dept. Biological Sciences, Simon Fraser University.

• 4:45-5:00 Male-produced aggregation pheromone of *Phyllotreta cruciferae* (Goeze): Behavioural responses of flea beetles and parasitoids in the field. J. Soroka1, R. Bartlet2, A. Cossé2, and B. Zilkoski2, 1Agriculture and Agri-Food Canada, Saskatoon Research Centre, 2Agricultural Research Service, National Center for Agricultural Utilization Research, Bioactive Agents Research Unit, Peoria IL.

• 5:00-5:15 A single-step multiplex PCR assay for the detection of European *Peristenus spp.* (Hymenoptera: Braconidae), parasitoids of *Lygus spp.* (Hemiptera: Miridae). T.D. Gariepy1,2,3*, U. Kuhlmann2, C. Gillot3, and M. Erlandson1, 1Agriculture and Agri-Food Canada, Saskatoon Research Centre, 2CABI Bioscience Switzerland Centre, 3Dept. Biology, University of Saskatchewan.

• 5:15-5:30 The Wheels from the Bus are Bad Bad Bad: The roll of used tires in generating potential WNV vector mosquitoes. E. Laing1* and P.S. Curry2, 1Dept Community Health and Epidemiology, University of Saskatchewan, 2Saskatchewan Health.

REGISTRATION AND MIXER 7:30-10:00

Friday October 29, 2004: Meeting begins at 8:30
Friday Oral Presenters: Please submit your PowerPoint CDs or slide carousels to the audio/visual operator by 8:00.

Symposium: New Discoveries, New Invasions 8:30-12:45
Introduction and Welcome: 8:30-8:45 Cedric Gillott
Session moderator: Cedric Gillott

• 8:45-9:30 Keynote Address: Mantophasmatodea - a great discovery with an unfortunate name. P. Naskrecki, Conservation International, Harvard University.

• 9:30-10:00 Challenges and opportunities arising from the invasion of western Canada by the cabbage seedpod weevil. L. Dosdall and co-authors, Dept. Agricultural, Food and Nutritional Science, University of Alberta.

• 10:00-10:30 *Culex tarsalis*: An old mosquito carrying a new disease. P.S. Curry1 and S. Hartley2, 1Saskatchewan Health, 2Saskatchewan Agriculture, Food and Rural Revitalization.
• 10:30-10:45 REFRESHMENT BREAK

• 10:45-11:15 **Birds: Another biotic frontier.** H. Proctor, Dept. Biological Sciences, University of Alberta.

• 11:15-11:45 **Biophysical inventories in wildland parks of northern Alberta.** W. Nordstrom, Alberta Natural Heritage Information Centre.

• 11:45-12:15 **What is it and where did it come from?** The art of differentiating endemic and exotic mites. D. Walter, Dept. Biological Sciences, University of Alberta.

• 12:15-12:45 **The impact of climate change on potential distribution and relative abundance of three insect pest species in Canada.** O. Olfert and R. Weiss, Agriculture and Agri-Food Canada, Saskatoon Research Centre.

12:45-1:45 LUNCH BREAK

*Contributed Oral Papers: * indicates student paper: 1:45-5:15

*Session moderator: Heather Proctor*

• 1:45-2:00 **Saproxylic beetles, post-fire salvage logging, and nutrient dynamics of burned mixed-wood forests.** T. Cobb*, Dept. Renewable Resources, University of Alberta.

• 2:00-2:15 **The importance of coarse woody debris for saproxylic beetles.** J. Jacobs*, Dept. Renewable Resources, University of Alberta.

• 2:15-2:30 **Assessing the impact of forest harvesting on macroinvertebrate communities.** M. Barkway* and J.R. Spence, Dept. Renewable Resources, University of Alberta.

• 2:30-2:45 **Beetles as habitat?: Antennoseius mites on Sericoda beetles.** A.D. Dechene*, Dept. Biological Sciences, University of Alberta.

• 2:45-3:00 **Forest mosaic and ground-dwelling beetles.** C. Bergeron¹,²*, J. Spence¹ and J. Volney². ¹Dept. Renewable Resources, University of Alberta, ²Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre.

• 3:00-3:15 **Biological control of an introduced birch sawfly.** C. MacQuarrie*, Dept. Renewable Resources, University of Alberta.

• 3:15-3:30 **The spiny ash sawfly, Eupareophora parca (Cresson), a pest of ash new to Alberta (Hymenoptera: Tenthredinidae).** D. Williams, Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre.

• 3:30-3:45 REFRESHMENT BREAK

*Session moderator: Jack Gray*

• 3:45-4:00 **Pollination of Echinacea angustifolia by native pollinators and the alfalfa leafcutting bee (Megachile rotundata) in Saskatchewan.** T. Wist* and A.R. Davis, Dept. Biology, University of Saskatchewan.
• 4:00-4:15 **Ballooning behaviour in Dolomedes triton.** C. Frost¹* and L. DeHaas², ¹Dept. Biological Sciences, University of Alberta, ²Dept. Renewable Resources, University of Alberta.

• 4:15-4:30 **Defensive behaviour of ants in a mutualistic relationship with aphids.** I.D. Phillips¹* and C.K.R. Willis², ¹Dept. Biological Sciences, University of Alberta, ²Centre for Behavioural and Physiological Ecology, Zoology, University of New England.

• 4:30-4:45 **Adaptive responses of flying locusts to virtual conspecifics and predators.** N.A. Mohr* and J.R. Gray, Dept. Biology, University of Saskatchewan.

• 4:45-5:00 **Impacts of fertilization on soil Acari and Collembola under young lodgepole pine stands in the interior of British Columbia.** J. Battigelli¹, S. Berch² and R. Brockley³, ¹Earthworks Research Group, St. Albert, ²British Columbia Ministry of Forests Research Branch, ³British Columbia Ministry of Forests Kalmalka Research Station.

• 5:00-5:15 **Response of soil microarthropod density and diversity five years after site preparation treatments at high elevation in southern British Columbia.** J. Battigelli¹, S. Berch² and G. Hope³, ¹Earthworks Research Group, St. Albert, ²British Columbia Ministry of Forests Research Branch, ³British Columbia Ministry of Forests, Kamloops.

**Contributed Poster Papers: + indicates presenter: 5:15-5:45**

• Development and application of a simplified field key to identify species of Delia (Diptera: Anthomyiidae) commonly occurring in canola grown in the Peace River region of Alberta. J. Otani¹, A. Nemecz¹+ L. Dosdall², G. Clayton³, N. Harker³ and J. O'Donovan¹. ¹Agriculture and Agri-Food Canada, Beaverlodge Research Farm, ²Dept. Agricultural, Food and Nutritional Science, University of Alberta, ³Agriculture and Agri-Food Canada, Lacombe Research Centre.

• Fluctuating asymmetry and fitness of the wheat stem sawfly in relation to host quality. H.A. Cárcamo+, K. Floate, B. Lee and B.L. Beres. Agriculture and Agri-Food Canada, Lethbridge Research Centre.

• **The contribution of Echinacea angustifolia to grasshopper control.** T. Wist+ and A.R. Davis, Dept. Biology, University of Saskatchewan.

• **Ground beetles (Coleoptera: Carabidae), fire severity and post-fire logging.** M. Koivula+, F.K.A. Schmiegelow, and J.R. Spence, Dept. Renewable Resources, University of Alberta.

**BANQUET 6:30-10:00**

**Society Award Presentations**

**After Dinner Talk:** The smaller majority and a search for charismatic invertebrates, P. Naskrecki, Conservation International, Harvard University.
 Saturdays, October 30, 2004: Meeting begins at 8:30
Saturday Oral Presenters: Please submit your PowerPoint CDs or slide carousels to the audio/visual operator by 8:15.

**Contributed Oral Papers: 8:30-10:15**
**Session moderator: Héctor Cárcamo**

- **8:30-8:45** A guided tour of the oak gall wasps (Hymenoptera: Cynipidae) of Riding Mountain National Park, MB. S.C. Digweed, Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre.
- **8:45-9:00** Alberta spider bite website. R. Leech and T. Thormin, Provincial Museum of Alberta.
- **9:15-9:30** Earlier flowering canola trap strips lure weevils to their final supper. H. Cárcamo¹, R. Dunn² and O. Olfert³, ¹Agriculture and Agri-Food Canada, Lethbridge Research Centre, ²Alberta Agriculture Food and Rural Development, ³Agriculture and Agri-Food Canada, Saskatoon Research Centre.
- **9:30-9:45** Effect of host plant and IPM strategies on wheat stem sawfly population dynamics and rates of parasitism. B. Beres¹, H. Cárcamo¹, J.R. Byers¹, F. Clarke², and R. DePauw², ¹Agriculture and Agri-Food Canada, Lethbridge Research Centre, ²Agriculture and Agri-Food Canada, Semi-Arid Prairie Research Centre.
- **9:45-10:00** Spring emergence biology of the cabbage seedpod weevil (Coleoptera: Curculionidae) and the crucifer flea beetle (Coleoptera: Chrysomelidae). B. Ulmer and L. Dosdall, Dept. Agricultural, Food and Nutritional Science, University of Alberta.
- **10:00-10:15** A tale of two host plants. A.S. McClay, Sherwood Park, AB.

10:15-10:30 **REFRESHMENT BREAK**

10:30-12:00 **ESAAlberta Annual General Meeting**

12:00-1:00 LUNCH [provided]

1:00 Meeting adjourned
ABSTRACTS (alphabetical order by first author)

1. Adult eclosion and reproductive diapause of the ash leaf coneroller, *Caloptilia fraxinella* (Lepidoptera: Gracillariidae). G. Armitage¹*, M. Evenden¹, B. Heming¹, R. Gries², ¹Dept. Biological Sciences, University of Alberta, ²Dept. Biological Sciences, Simon Fraser University.

The ash leaf cone roller is a new pest of ash (*Fraxinus* spp.) in Edmonton. Moths eclose from pupae in 50:50 sex ratio. Two putative pheromone components were recovered from females in reproductive diapause and a small number of males responded to pheromone-baited traps. Some moths held under summer conditions mated, however, wild moths captured in September and October were all virgins.


This paper will report on the status of a project using macroinvertebrate community structure to assess the condition of streams affected by forest harvesting in west-central Alberta.

3. Impacts of fertilization on soil Acari and Collembola under young lodgepole pine stands in the interior of British Columbia. J. Battigelli¹, S. Berch² and R. Brockley³, ¹Earthworks Research Group, St. Albert, ²British Columbia Ministry of Forests Research Branch, ³British Columbia Ministry of Forests Kalmalka Research Station.

We examined the effects of 9 years of annual nutrient additions on soil mesofauna abundance and community structure at one lodgepole pine “maximum productivity” study site in central British Columbia. Density and relative abundance of Acari were reduced while values for Collembola increased with higher nitrogen applications.

4. Response of soil microarthropod density and diversity five years after site preparation treatments at high elevation in southern British Columbia. J. Battigelli¹, S. Berch² and G. Hope³, ¹Earthworks Research Group, St. Albert, ²British Columbia Ministry of Forests Research Branch, ³British Columbia Ministry of Forests, Kamloops.

The impact of mounding, scalping and burning on Acari and Collembola density and oribatid mite species diversity in an ESSF ecosystem is reported. Density and diversity in the untreated forest floor were higher than in burned plots. In the mineral soil, values were lower in both mounded and burned plots than in the untreated plots.

5. Effect of host plant and IPM strategies on wheat stem sawfly population dynamics and rates of parasitism. B.L. Beres¹, H.A. Cárcamo¹, J.R. Byers¹, F. Clarke², and R. DePauw², ¹Agriculture and Agri-Food Canada, Lethbridge Research Centre, ²Agriculture and Agri-Food Canada, Semi-Arid Prairie Research Centre.
This paper reports on the research findings of our studies on the population dynamics of the wheat stem sawfly, which aim to quantify effects of current and novel wheat germplasm on larval weights, overwintering survivorship, female fecundity, and interactions of cultivars with rates of parasitism by *Bracon cephi*. IPM study results which assess the effect of alternative seeding systems on wheat stem sawfly survivorship will also be presented.

6. **Forest mosaic and ground-dwelling beetles.** C. Bergeron\(^1,2\)*, J.R. Spence\(^1\) and J. Volney\(^2\). \(^1\)Dept. Renewable Resources, University of Alberta; \(^2\)Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre.

Boreal forest habitats are created by ecological processes such as soil, fires, insect outbreaks, windthrows, floods and anthropogenic disturbances. In order to conserve the biodiversity associated to these habitats, the maintenance of ecological processes is essential. This study assesses the spatial association between ecological processes, forest habitat and ground-dwelling beetles.

7. **Agroecology of ground beetles in southern Alberta.** S. Bourassa\(^1,2\)*, J.R. Spence\(^1\), H.A. Cárcamo\(^2\), R.E. Blackshaw\(^2\), F.J. Larney\(^2\) and K. Floate\(^2\). \(^1\)Dept. Renewable Resources, University of Alberta; \(^2\)Agriculture and Agri-Food Canada, Lethbridge Research Centre.

Two different farm locations were chosen to assess the impact of farming practices on ground beetle communities. At Vauxhall, we are studying a three year rotation of wheat, beans and potatoes under sustainable and conventional farming. At Lethbridge we are comparing weed control in Round Up Ready® and conventional corn.

8. **Soil biosecurity: What we don’t know can hurt us.** S. Bromilow*, H. Proctor and D. Walter, Dept. Biological Sciences, University of Alberta.

A discussion of the issues surrounding the import of foreign arthropods via soil. The results of a greenhouse soil microarthropod survey and an experiment on bare-rooting plants are presented.

9. **Fluctuating asymmetry and fitness of the wheat stem sawfly in relation to host quality.** H.A. Cárcamo, K. Floate, B. Lee and B.L. Beres. Agriculture and Agri-Food Canada, Lethbridge Research Centre.

Over the past decade there has been an explosion of studies on fluctuating asymmetry (FA) as a measure of developmental instability in a variety of systems, but few have tested the relationship between FA and fitness. In our study, female sawflies that emerged from a hollow stem variety had higher egg loads than those from a solid stem variety (poor quality host) but fluctuating asymmetry was not affected negatively by variety or host stem diameter.
10. **Earlier flowering canola trap strips lure weevils to their final supper.**  H.A. Cárcamo¹, R. Dunn² and O. Olfert³, ¹Agriculture and Agri-Food Canada, Lethbridge Research Centre, ²Alberta Agriculture Food and Rural Development, ³Agriculture and Agri-Food Canada, Saskatoon Research Centre.

The cabbage seedpod weevil (*Ceutorhynchus obstrictus* Marsham) is an important pest of canola in southern Alberta. From 2000 to 2003, we investigated a trap crop management strategy by establishing earlier flowering canola strips along the borders of commercial fields in southern Alberta. Weevils were highly concentrated along trap strips, and in most cases, spraying them there with an insecticide was sufficient to prevent their dispersal into the main crop.


Saproxylic beetles are species that are associated with dead wood and are generally considered to play key roles in nutrient cycling. Using survey and experimental approaches, we investigated the relationship between the abundance of saproxylic beetles feeding on burned white spruce and changes in soil nutrients after post-fire salvage logging.

12. **Culex tarsalis: An old mosquito carrying a new disease.**  P.S. Curry¹ and S. Hartley², ¹Saskatchewan Health, ²Saskatchewan Agriculture, Food and Rural Revitalization.

*Culex tarsalis*, a prairie grassland mosquito, has been the primary species implicated in the spread of West Nile virus in Western Canada. This paper will discuss the impact of ecozone and temperature on the seasonal abundance and distribution of this mosquito in Saskatchewan during the 2003 and 2004 seasons.

13. **Beetles as habitat?: Antennoseius mites on Sericoda beetles.**  A.D. Dechene*, Dept. Biological Sciences, University of Alberta.

Two undescribed mite species (*Antennoseius* spp.) were recently discovered on two pyrophilous ground beetle species, *Sericoda quadripunctata* and *S. bembidiodes*, collected from burned forest stands in northern Alberta. This study investigated the occurrence of *Antennoseius* spp. on *Sericoda* spp. to describe the nature of this association.

14. **A guided tour of the oak gall wasps (Hymenoptera: Cynipidae) of Riding Mountain National Park, MB.**  S.C. Digweed, Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre.

Galls of at least 16 cynipid species were found on bur oak (*Quercus macrocarpa* Michx.) in Riding Mountain National Park, MB during 2004. This location is near the northern
limit of the natural range of bur oak, but gall diversity was similar to that on bur oak further south.

15. Challenges and opportunities arising from the invasion of western Canada by the cabbage seedpod weevil. L. Dosdall and co-authors, Dept. Agricultural, Food and Nutritional Science, University of Alberta.

The cabbage seedpod weevil, *Ceutorhynchus obstrictus* (Marsham) (Coleoptera: Curculionidae), was first discovered infesting canola in southern Alberta in 1995, and by 1999 its populations had increased to outbreak densities. The species range expanded rapidly over eight years to encompass many thousands of hectares in three ecoregions. The cabbage seedpod weevil is a serious pest of canola (*Brassica rapa* L. and *Brassica napus* L.), and it has presented several challenges in developing an integrated management strategy. No chemical insecticides were initially registered in Canada for its control, and a first research focus was to identify appropriate products and application rates, and to set a nominal economic threshold that could later be validated through research. At first, very little was known of its biology in temperate North America, and research has been ongoing to better understand factors affecting its population dynamics. Although the species was initially nonparasitized, evidence has recently been found to indicate that both adults and larvae are subject to attack by parasitoids, primarily indigenous species that have switched from endemic hosts to exploit a new resource. Several aspects of our research have relied upon the expertise of systematists, who have provided crucial collaborative support. In view of the threat posed by *C. obstrictus* to the canola industry in western Canada, an interdisciplinary team of researchers was assembled to investigate aspects of its cultural, chemical, and biological control, in addition to host plant resistance. This approach has had considerable success, due primarily to strong funding support by the crops industry. A key strategy has been to involve extension specialists in our research to ensure that results are made readily available to producers.

16. Sex pheromone components of the large aspen tortrix, *Choristoneura conflictana* (Lepidoptera: Tortricidae). M. Evenden¹, R. Gries², G. Gries², ¹Dept. Biological Sciences, University of Alberta, ²Dept. Biological Sciences, Simon Fraser University.

Gas chromatographic-electroantennographic analysis determined the presence of three putative pheromone components in female pheromone glands. The major component, Z11-tetradecenyl aldehyde, was more attractive to male moths in field and lab bioassays than two and three component blends and more attractive than calling virgin females.

17. Ballooning behaviour in *Dolomedes triton*. C. Frost¹* and L. DeHaas², ¹Dept. Biological Sciences, University of Alberta, ²Dept. Renewable Resources, University of Alberta.

Shortly after hatching, some juveniles of the fishing spider *Dolomedes triton* balloon as a means of aerial dispersal. This experiment examined the effect of changes in wind speed, temperature, and time after hatching on ballooning behaviour.
A single-step multiplex PCR assay for the detection of European Peristenus spp. (Hymenoptera: Braconidae), parasitoids of Lygus spp. (Hemiptera: Miridae).

T.D. Gariepy1,2,3*, U. Kuhlmann2, C. Gillott3, and M. Erlandson1, 1Agriculture and Agri-Food Canada, Saskatoon Research Centre, 2CABI Bioscience Switzerland Centre, 3Dept. Biology, University of Saskatchewan.

Lygus spp. are serious pests of a wide variety of economically important crops. The present study describes species-specific PCR primers for three species of Peristenus, parasitoids of Lygus spp., and the use of a multiplex PCR assay to detect P. digoneutis and P. stygicus eggs and larvae from Lygus nymphs. Results indicate that the primers are specific and are capable of detecting single eggs in parasitized nymphs. When used in multiplex, the primers maintain their specificity and sensitivity.

Modeling the molecular architecture of lepidopteran peritrophic membrane. D. Hegedus, Agriculture and Agri-Food Canada, Saskatoon Research Centre.

Genomics and proteomic approaches were used to characterize proteins from the peritrophic membrane (PM) of Mamestra configurata (bertha armyworm). MALDI-TOF mass spectrometry of PM proteins was coupled to midgut EST data to isolate cDNAs encoding PM – associated proteins. The role of two proteins in maintaining PM structure will be discussed.

The importance of coarse woody debris for saproxylic beetles. J. Jacobs*, Dept. Renewable Resources, University of Alberta.

Saproxylic insects, a functional group dominated by beetles, are dependent on dead or moribund trees. Saproxylic beetles were studied in a variety of habitats at the EMEND research site. The results of this study demonstrate that coarse woody debris should be an important part of any forest management plan.

Ground beetles (Coleoptera: Carabidae), fire severity and post-fire logging. M. Koivula, F.K.A. Schmiegelow, and J.R. Spence, Dept. Renewable Resources, University of Alberta.

Forest fire is an important boreal forest-succession initiator, after which salvage logging usually takes place, but its ecological consequences are poorly known. We trapped ground beetles at House River Fire, central Alberta (burned in 2002), in 2003-2004. We present results of first post-fire year.

Molecular variability of Ceutorhynchus neglectus (Coleoptera: Curculionidae).

R. Laffin1*, L. Dosdall2 and F. Sperling1, 1Dept. Biological Sciences, University of Alberta, 2Dept. Agriculture, Food, and Nutritional Sciences, University of Alberta. mtDNA of curculionids is thought to be rapidly evolving compared to other groups of insects. In the case of Ceutorhynchus neglectus, we have found extremely low variation
across its native range in North America. Is this group more slowly evolving, or is there another explanation for this species?

23. **The Wheels from the Bus are Bad Bad Bad: The roll of used tires in generating potential WNV vector mosquitoes.** E. Laing¹* and P.S. Curry², ¹Dept Community Health and Epidemiology, University of Saskatchewan, ²Saskatchewan Health.

A joint study between Saskatchewan Health and Saskatchewan Scrap Tire Corp was undertaken in the summer of 2003 to determine the contribution of used tires to WNV epidemiology. The dominant species found in high numbers in tires were those implicated in WNV transmission. Implications for rural and agricultural settings with potentially high transmission rates are discussed.


A website is being set up through the Provincial Museum of Alberta to inform people about spiders and what to do after someone is bitten. Information is given on collecting and preserving (or keeping alive) the spider, taking pictures of the spider and the bite over time if there are changes (increase in affected area, pustule formation, etc.), recording symptoms displayed of the victim (e.g., nausea, local or widespread pain).

**SPECIAL NOTE:**
Robin Leech is preparing a bite protocol for the Calgary Poison Centre and for the Edmonton Capital Health Region. Included will be how to distinguish an arthropod bite from Herpes sores, distinguishing spider bites from other arthropod bites, distinguishing between mosquito, blackfly, no-see-um and horsefly bites, hemipteran bites, and others. If anyone has information on bites (photos, descriptions, etc.), I will appreciate receiving any and all.


Two spider bites were reported to us during August 2004. The bites were by females of *Araneus gemmoides* Chamberlin & Ivie, 1935, and *Araneus marmoreus* Clerck, 1758. Photos were taken of the spiders and the bite sites. A third bite by *A. gemmoides* was recorded in September 2004. Symptoms are a small red area, 4-5 mm diameter, swelling for a couple of hours, itchiness and sore muscles. There may be restlessness or anxiety, but we cannot determine if this is bite induced or stress from the situation. The symptoms are usually gone completely within 24 hours. Two specimens (1 male, 1 female) of a very painful biter, *Cheiracanthium inclusum* (Hentz, 1847) were found in Nanton and Stony Plain in grapes imported from California. Photos were taken of both specimens.
26. **Biological control of an introduced birch sawfly.** C. MacQuarrie*, Dept. Renewable Resources, University of Alberta.

*Profenusa thomsoni*, an invasive European sawfly, causes severe damage to birch in Alaska. A joint project of the Canadian and US Forest Services began in 2003 to introduce a biocontrol agent, *Lathrolestes luteolator* (Hymenoptera: Ichneumonidae) to combat the pest. The sawfly's history in North America, and a summary of biocontrol efforts is presented.

27. **A tale of two host plants.** A.S. McClay, Sherwood Park, AB.

The weevil *Thecesternus hirsutus* develops on the roots of *Parthenium* species in Mexico. Some puzzles about its adaptations to its host plants were resolved by further field observations almost 20 years after the original discovery.


We measured wing and body kinematics as well as flight muscle activity during visually-evoked flight steering manoeuvres of locusts presented with a computer-generated conspecific and bird. Locusts responded 400 ms earlier to a bird than to a conspecific and manoeuvred, with equal probability, either away from or toward either object.

29. **Reconstructed phylogeny and biogeography of species of *Brychius* Thomson, 1859 (Coleoptera: Haliplidae).** T. Mousseau*, Dept. Biological Sciences, University of Calgary.

A reconstructed phylogeny of species of *Brychius* indicated *Brychius hornii* Crotch 1873 + *Brychius hungerfordi* Spangler 1954 is the sister-group to *Brychius elevatus* Panzer 1794 + *Brychius glabratu*s Villa 1833; and these combined are the sister-group to *Brychius pacificus* Carr 1928. The analysis was conducted with both Parsimony and Bayesian Phylogenetic Inference. It is thought that vicariance has played an important role in the present distribution.

30. **Keynote Address: Mantophasmatodea - a great discovery with an unfortunate name.** P. Naskrecki, Conservation International, Harvard University.

As we enter the 21st century, most major breakthroughs and developments in entomology are happening largely within the realms of molecular genetics and genomics. Yet there is still room, and a need, for both field- and museum-based morphological research. The recent discovery of Mantophasmatodea, a new order of insects from Africa illustrates the point that even old, dusty collection drawers can hide amazing surprises for an open-minded entomologist.
31. **Biophysical inventories in wildland parks of northern Alberta.** W. Nordstrom, Alberta Natural Heritage Information Centre.

Within the last ten years, 32 Wildland Parks have been established in Alberta, encompassing over 17,000 sq. km of land, a very significant landbase. Within these parks and the wide variety of habitats that are found within them, reside significant and important elements of Alberta's biodiversity. Although much of this biodiversity still remains to be discovered, there have been significant finds from surveys conducted in several of the Wildland Parks in northern Alberta over the last five years. You will hear about some of these finds, the surveys and the parks themselves.

32. **The impact of climate change on potential distribution and relative abundance of three insect pest species in Canada.** O. Olfert and R. Weiss, Agriculture and Agri-Food Canada, Saskatoon Research Centre.

Climate is the dominant force determining the distribution and abundance of most pest species. There has been considerable concern in recent years about climatic changes caused by human activities and the effects of these changes on agriculture. Previous bio-climatic models were developed to predict the potential distribution and relative abundance (current climate) of three species that have recently been introduced to Canada: *Ceutorhynchus obstrictus* (Marsham) (Coleoptera: Curculionidae), *Meligethes viridescens* (Fabricius) (Coleoptera: Nitidulidae), and *Oulema melanopus* L. (Coleoptera: Chrysomelidae). The bio-climatic models were extended by using incremental scenarios, representing potential climate change scenarios, as inputs into the models. Compared to modelled range and distribution for current climate, model results indicated that all three species would have increased range and relative abundance for temperature increases between 1-7 °C. The models predicted that *O. melanopus*, *C. obstrictus* and *M. viridescens* range would be extended to regions that are not currently used for agricultural production.

33. **Development and application of a simplified field key to identify species of Delia (Diptera: Anthomyiidae) commonly occurring in canola grown in the Peace River region of Alberta.** J. Otani¹, A. Nemecz¹⁺, L. Dosdall², G. Clayton³, N. Harker³ and J. O'Donovan¹. ¹Agriculture and Agri-Food Canada, Beaverlodge Research Farm, ²Dept. Agricultural, Food and Nutritional Science, University of Alberta, ³Agriculture and Agri-Food Canada, Lacombe Research Centre.

A simplified field key was developed using available taxonomic research synthesized with digital photographs of *Delia* specimens collected in 2003. The key was utilized to determine species of adults collected weekly in pan and sticky traps positioned in a canola (*Brassica napus* and *B. rapa*) field plot experiment at Beaverlodge AB in 2003.

34. **Defensive behaviour of ants in a mutualistic relationship with aphids.** I.D. Phillips¹* and C.K.R. Willis², ¹Dept. Biological Sciences, University of Alberta, ²Centre for Behavioural and Physiological Ecology, Zoology, University of New England.
We tested the hypothesis that aphid-attending ants defend their aphid group against aphid predators more aggressively than ant competitors. Aphid-attending ants selectively attacked potential competitors as opposed to aphid predators when confronted with simultaneous introductions. We suggest this behavior may reduce the likelihood of raids by neighboring colonies.

35. **Birds: Another biotic frontier.** H. Proctor, Dept. Biological Sciences, University of Alberta.

Birds are excellent habitats for mites, but have been poorly surveyed in Canada. I have embarked on a long-term project to survey acarines on Albertan birds. Two years into the project, feather mite generic records have increased from 2 to 23, and blood-feeding nasal mites from 0 to 12 spp.

36. **Species limits and biogeography of Grammia tiger moths: Molecular and morphological evidence.** C. Schmidt* and F. Sperling, Dept. Biological Sciences, University of Alberta.

Members of the *Grammia nevadensis* species-group (Lepidoptera: Arctiidae) occur in xeric habitats throughout western North America. The taxonomy of this group, however, remains problematic, because adult phenotypic and morphological characters traditionally used to characterize species are few, making species delimitations unreliable. Initial results using mitochondrial DNA sequences and morphological characters to resolve the species-level taxonomy of the *G. nevadensis* group will be presented.

37. **Comparison of Bayesian inference with parsimony in a possible case of morphological long-branch attraction (Coleoptera: Silphidae: Nicrophorus).** D.S. Sikes, Dept. Biological Sciences, University of Calgary.

Phylogenetic analyses of the nepalensis group of species in the genus *Nicrophorus* have revealed a possible case of morphological-based long-branch attraction. Bayesian Inference using the Mkv model was compared with Parsimony in both the Felsenstein and Farris zones.

38. **Male-produced aggregation pheromone of Phyllotreta cruciferae (Goeze): Behavioural responses of flea beetles and parasitoids in the field.** J. Soroka¹, R. Bartlet², A. Cosse², and B. Zilkośki², ¹Agriculture and Agri-Food Canada, Saskatoon Research Centre, ²Agricultural Research Service, National Center for Agricultural Utilization Research, Bioactive Agents Research Unit, Peoria IL.

A male-produced aggregation pheromone was demonstrated for *Phyllotreta cruciferae* (Goeze) in field trials comparing numbers of flea beetles caught in unbaited traps with numbers caught in traps baited with allyl isothiocyanate and/or pheromone in low and high concentrations. While flea beetles were most strongly attracted to high doses of both
lures, hymenopteran parasitoids appeared to be more attracted to treatments with high levels of pheromone than to treatments with the greatest number of flea beetles.

39. Spring emergence biology of the cabbage seedpod weevil (Coleoptera: Curculionidae) and the crucifer flea beetle (Coleoptera: Chrysomelidae). B. Ulmer and L. Dosdall, Dept. Agricultural, Food and Nutritional Science, University of Alberta.

Spring emergence of *Ceutorhynchus obstrictus* and *Phyllotreta cruciferae* was investigated in relation to habitat type, vegetative cover, and soil temperature. In each year peak emergence of both species occurred as mean ground temperature reached 15°C. More weevils and flea beetles emerged from sheltered locations than from open grassy habitats. Weevils were predominantly male early and females late in the season, more female than male flea beetles emerged throughout the spring.

40. What is it and where did it come from? The art of differentiating endemic and exotic mites. D. Walter, Dept. Biological Sciences, University of Alberta.

When mites become a problem, how do you discover their identity and origin? Usually you don’t: taxonomic expertise is hard-to-find and needed ecological information seemingly non-existent. Reintegrating taxonomy with ecology is one necessary step towards solving this problem, especially when combined with new computer identification tools.

41. The spiny ash sawfly, *Eupareophora parca* (Cresson), a pest of ash new to Alberta (Hymenoptera: Tenthredinidae). D. Williams, Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre.

In the last few years defoliation of planted green ash in the city of Edmonton has been noted by CFS personnel. The agent responsible is *Eupareophora parca* (Cresson), a tenthredinid sawfly that has been mentioned in extension-entomology literature (leaflets, etc.) and recorded as a minor pest of green and black ash in urban settings. No work has been done on the biology of this species. It has gone from being undetected in 2002 to occurring in a number of localities around the city in 2004, this in spite of regular surveys of ash to monitor ash leafroller. Herein are presented preliminary observations on the biology of this species.

42. Pollination of *Echinacea angustifolia* by native pollinators and the alfalfa leafcutting bee (*Megachile rotundata*) in Saskatchewan. T.Wist* and A.R. Davis, Dept. Biology, University of Saskatchewan.

*Echinacea angustifolia* must be cross-pollinated by insects to set seed as is typical of the family Asteraceae. An in-depth knowledge of *E. angustifolias ‘s* pollination system is essential to developing *Echinacea* as a sustainable market crop. This study was performed in the summers of 2003 and 2004 to identify native insect pollinators and evaluate their contributions to pollination.
43. The contribution of *Echinacea angustifolia* to grasshopper control. T. Wist and A.R. Davis, Dept. Biology, University of Saskatchewan.

*Echinacea angustifolia* is a specialty crop in Saskatchewan and may play a role in organic grasshopper control. *Echinacea’s* long-lived inflorescence provides a nectar and pollen source for adult stages of major grasshopper egg predators, the grasshopper bee fly (*Systoechus vulgaris*) and the golden blister beetle (*Epicauta ferruginea*). Also, grasshoppers will not readily feed on *E. angustifolia’s* hirsute leaves.
Author index to abstract numbers

<table>
<thead>
<tr>
<th>Name</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armitage, G.</td>
<td>1</td>
</tr>
<tr>
<td>Barkway, M.</td>
<td>2</td>
</tr>
<tr>
<td>Bartlet, R.</td>
<td>38</td>
</tr>
<tr>
<td>Battigellli, J.</td>
<td>3, 4</td>
</tr>
<tr>
<td>Berch, S.</td>
<td>3, 4</td>
</tr>
<tr>
<td>Beres, B.L.</td>
<td>5, 9</td>
</tr>
<tr>
<td>Bergeron, C.</td>
<td>6</td>
</tr>
<tr>
<td>Blackshaw, R.E.</td>
<td>7</td>
</tr>
<tr>
<td>Bourassa, S.</td>
<td>7</td>
</tr>
<tr>
<td>Brockley, R.</td>
<td>3</td>
</tr>
<tr>
<td>Bromilow, S.</td>
<td>8</td>
</tr>
<tr>
<td>Byers, J.R.</td>
<td>5</td>
</tr>
<tr>
<td>Cárcamo, H.A.</td>
<td>5, 7, 9, 10</td>
</tr>
<tr>
<td>Clarke, F.</td>
<td>5</td>
</tr>
<tr>
<td>Clayton, G.</td>
<td>33</td>
</tr>
<tr>
<td>Cobb, T.</td>
<td>11</td>
</tr>
<tr>
<td>Cossé, A.</td>
<td>38</td>
</tr>
<tr>
<td>Curry, P.S.</td>
<td>12, 23</td>
</tr>
<tr>
<td>Davis, A.R.</td>
<td>42, 43</td>
</tr>
<tr>
<td>Dechene, A.D.</td>
<td>13</td>
</tr>
<tr>
<td>DeHaas, L.</td>
<td>17</td>
</tr>
<tr>
<td>DePauw, R.</td>
<td>5</td>
</tr>
<tr>
<td>Digweed, S.C.</td>
<td>14</td>
</tr>
<tr>
<td>Dosdall, L.</td>
<td>15, 22, 33, 39</td>
</tr>
<tr>
<td>Dunn, R.</td>
<td>10</td>
</tr>
<tr>
<td>Erlandson, M.</td>
<td>18</td>
</tr>
<tr>
<td>Evenden, M.</td>
<td>1, 16</td>
</tr>
<tr>
<td>Floate, K.</td>
<td>7, 9</td>
</tr>
<tr>
<td>Frost, C.</td>
<td>17</td>
</tr>
<tr>
<td>Gariepy, T.D.</td>
<td>18</td>
</tr>
<tr>
<td>Gillott, C.</td>
<td>18</td>
</tr>
<tr>
<td>Gray, J.R.</td>
<td>28</td>
</tr>
<tr>
<td>Gries, G.</td>
<td>16</td>
</tr>
<tr>
<td>Gries, R.</td>
<td>1, 16</td>
</tr>
<tr>
<td>Harker, N.</td>
<td>33</td>
</tr>
<tr>
<td>Hartley, S.</td>
<td>12</td>
</tr>
<tr>
<td>Hegedus, D.</td>
<td>19</td>
</tr>
<tr>
<td>Heming, B.</td>
<td>1</td>
</tr>
<tr>
<td>Hope, G.</td>
<td>4</td>
</tr>
<tr>
<td>Jacobs, J.</td>
<td>20</td>
</tr>
<tr>
<td>Koivula, M.</td>
<td>21</td>
</tr>
<tr>
<td>Kuhlmann, U.</td>
<td>18</td>
</tr>
</tbody>
</table>
Minutes of Fall Executive Meeting
Entomological Society of Alberta
Lloydminster, Alberta
October 28, 2004

Meeting called to order at 7:00 p.m. Present were Heather Proctor (Pres), John Acorn (VP), Derrick Kanashiro (PP), Greg Pohl (Director ESC), Jennifer Otani (Northern Dir.), Derek Sikes (Central Dir.), Stephanie Erb (Southern Dir.), Daryl Williams (Treas.), Troy Danyk (Webmaster), Maya Evenden (Proceedings Editor, 2004), and Mike Undershultz (Sec).


   MOTION: to approve the agenda as amended
   M/S Pohl/Proctor
   CARRIED

2. Report from the Northern Director (Jennifer Otani)
   • See attached
   
   MOTION: to accept the report of the northern director as read
   M/S Pohl/Proctor
   CARRIED

3. Report from the Central Director (Derek Sikes)
   • See attached
   
   MOTION: to accept the report of the central director as read
   M/S Erb/Otani
   CARRIED

4. Report from the Southern Director (Stephanie Erb)
   • See attached
   
   MOTION: to accept the report of the southern director as read
   M/S Undershultz/Danyk
   CARRIED

5. Report from Regional Director to Ent Soc of Canada (Greg Pohl)
   • See attached
   
   MOTION: to accept the report of the regional director to the Ent Soc of Canada as read
   M/S Williams/Sikes
   CARRIED
6. Secretary’s Report (Mike Undershultz)
   a. Received Newsletter for Senior Entomologists and will digitize document to be placed on website.
   b. Received one student travel grant that was forwarded to Daryl Williams.

   MOTION: to accept the report of the secretary as read
   M/S Otani/Kanashiro
   CARRIED

7. Treasurer’s Report (Daryl Williams)
   • See attached
   Still need to have 2003 books audited. Will appoint auditors before 2004 AGM is over.

   MOTION: to accept the report of the treasurer as read
   M/S Danyk/Undershultz
   CARRIED

8. Webmaster’s Report (Troy Danyk)
   • See attached

   MOTION: to accept the Webmaster’s report as read
   M/S Otani/Kanashiro
   CARRIED

9. Nominations (Heather Proctor)
   a. Nominations so far for executive positions to be presented at business meeting:
      • Regional Dir. to the Ent. Soc of Canada – Héctor Cárcamo
      • Secretary – Mike Undershultz
      • Webmaster – Troy Danyk
      • Northern Director – Jennifer Otani
      • Southern director – Derek Sikes
      • Treasurer – Stephanie Erb
      • President – John Acorn
      • Vice President – Maya Evenden

10. 2005 Joint Annual Meeting (John Acorn)
    a. Meeting set for November 3-5 (and maybe 6th) in Canmore. Venue is the Radisson Hotel.
    b. Arrangements are moving along on schedule according to Nat. Society schedule. Hotel booked, committee members appointed.
    c. Program is almost firm
    d. Meeting theme is “Entomology: A celebration of life’s little wonders”

11. Student Awards (Derek Kanashiro)
a. Due to lack of award applications the awards committee will accept applications that are late or not in the approved format. In the future if applications exceed the amount of available awards, the ad hoc applications may be the first to be rejected. This is to be mentioned at the business meeting.

b. One application was received for the undergrad student award. The awards committee will review the application and make decision prior to banquet.

12. Finalize business meeting agenda (Heather Proctor)
   a. Draft agenda presented by Undershultz
   b. Bylaws, Rules and Regulations discussion to be moved to the end of the agenda.
   c. Undershultz to provide copies of the 2003 business meeting minutes.

   MOTION: to finalize draft business meeting agenda as amended  
   M/S Pohl/Williams  
   CARRIED

13. Adjournment

   MOTION: to adjourn meeting  
   M/S Acorn/Danyk  
   CARRIED
Minutes of Annual Business Meeting
Entomological Society of Alberta
Lloydminster, Alberta
October 30, 2004

Executive members present: Heather Proctor (Pres), John Acorn (VP), Derrick Kanashiro (PP), Greg Pohl (Regional Dir. ESC), Jennifer Otani (Northern Dir.), Derek Sikes (Central Dir.), Stephanie Erb (Southern Dir.), Daryl Williams (Treas.), Troy Danyk (Webmaster), Maya Evenden (Proceedings Editor, 2004), and Mike Undershultz (Sec).

1. Additions to Agenda. None

   MOTION: to accept the agenda
   M/S Proctor/Undershultz
   CARRIED

2. Approval of the 2003 business meeting minutes

   MOTION: to approve the 2003 business meeting minutes as written
   M/S Spence/Pohl
   CARRIED

3. Presidents address as read by Heather Proctor:
   • See attached

   MOTION: to accept the presidents address as read
   M/S Williams/Kanashiro
   CARRIED

4. Nominations for office

   4.1 Nominees:
   • Regional dir. to the Ent. Soc of Canada – Héctor Cárcamo
   • Vice president – Maya Evenden
   • Treasurer – Kim Rondeau
   • Secretary – Mike Undershultz
   • Webmaster – Troy Danyk
   • Northern director – Jennifer Otani
   • Central director – Derek Sikes
   • Southern director – Derrick Kanashiro
   • Editor – Stephanie Erb
   • President – John Acorn
• Past president – Heather Proctor

MOTION: to accept the nominations for office
M/S Spence/Ball
CARRIED

5. Appointment of internal auditors for the Treasurer’s report

MOTION: to appoint Rob Longair and Greg Pohl as internal auditors for the Treasurer’s report
M/S Danyk/Erb
CARRIED


• See attached

MOTION: to accept the Treasurer’s report as read
M/S Williams/Larson
CARRIED

7. Webmaster’s Report

• See attached

MOTION: to accept the Webmaster’s report as read
M/S Leech/Heming
CARRIED

8. Report from Regional Director to Ent Soc of Canada

• See attached

MOTION: to accept the report of the regional director to the Ent Soc of Canada as read
M/S Heming/Leech
CARRIED

9. Student awards

9.1 Reminder to all that student undergraduate and student travel awards are available.
9.2 Due to lack of award applications the awards committee will accept applications that are late or not in the approved format. In the future if applications exceed the amount of available awards, the ad hoc applications may be the first to be rejected.

10. 2005 Joint Annual Meeting between Ent Soc Alberta and Ent Soc of Canada
10.1 Meeting set for November 3-5 (and maybe 6th) in Canmore. Venue is the Radisson Hotel.

10.2 Arrangements are moving along on schedule according to Nat. Society schedule.

10.3 Committee members include Sperling and Langor (scientific program), Erb, Johnson and Sikes (local arrangements), Dolynski, Volney and Spence (fundraising), Proctor, Kanashiro (publicity), Evenden (awards)

10.4 Program is almost firm.

10.5 Meeting theme is “Entomology: A celebration of life’s little wonders”

10.6 Room rates start at $89

11. ESA By-laws, Rules and Regulations

11.1 The draft versions of the Bylaws and Rules and Regulations that were previously distributed to members about 1 month ago were tabled. It is the intention of the executive to have the society approve the tabled documents to be submitted to the Gov of AB for final approval.

11.2 The Gov of AB has tentatively approved the draft version of the Bylaws as written.

11.3 The following motions were made by members regarding the draft Bylaws:

MOTION: to keep ESA as the official acronym
M/S Holmberg/Ball
OPPOSED 3
CARRIED

MOTION: to add wording “any six members shall constitute a quorum…” to article 4.
M/S Leech/Williams
CARRIED

MOTION: to add section in article 4 about ‘remote access’ for quorum at executive meetings.
M/S McClay/Williams
CARRIED

MOTION: to accept draft Bylaws as they now stand
M/S Holmberg/Kanashiro
CARRIED

11.4 Rules and Regulations:
MOTION: to approve the draft Rules and Regulations as tabled
M/S MacQuarrie/Sperling
12. Resolutions Committee. As read by Chris Schmidt and Lisa Lumley

12.1 Whereas the 2004 joint meeting of the ESA and ESS was both successful and memorable, and whereby the success of the meeting can be attributed to:

a) the hard work and outstanding organization by meeting co-chairs: Heather Proctor and Cedric Gillott;

b) local arrangements committee: Alec McClay, Michael Crowe and Phil Curry;

c) program committee: Martin Erlandson, Maya Evenden, Cedric Gillott and Jennifer Otani;

d) registration and budget committee: Lorraine Braun, Dwayne Hegedus, Julie Soroka, and Daryl Williams;

e) P. Naskrecki for his captivatory presentation on invertebrates; and

f) the staff of the Best Western Wayside Inn for their hospitality.

12.2 A poem to commemorate the 2004 meeting:

There once was a meeting right on the border
Where Heather and Cedric called us to order

From systematics to spiders and points in between
Saw enough beetle talks ‘til next Halloween

Morsels and wine were together at last
Pictures of katydids left us aghast

Karaoke and surfing seemed a good idea
‘Til we almost missed mantophasmatodea

13. Adjournment

MOTION: to adjourn meeting
M/S Acorn/Danyk
CARRIED
ANNUAL REPORT OF THE NORTHERN DIRECTOR

Director’s Activities - No requests for Society participation in local events or activities.

Graduate Students - Supervisors and students kindly provided information for graduate students. The degree being sought, a working title for their research project, their supervisor’s name(s) and the student’s contact information (optional) is listed below:

- Armitage, G. B. Sc. (Year 4 of 4). Reproductive biology of the ash leaf conroller. Department of Biological Sciences. Supervised by Dr. Maya Evenden and Dr. Bruce Heming. Contact information: graham@ualberta.ca.
- Barkway, M. M.Sc. (Year 1 of 2/3). Effects of logging on benthic macroinvertebrates in low gradient boreal streams. Department of Renewable Resources. Supervised by Dr. John Spence. Contact Information: Not available.
- Belter, Danica. M.Sc. (Year 2 of 3). Microinvertebrates associated with rhizosphere zones of boreal plants. Department of Biological Sciences. Supervised by Dr. Heather Proctor. Contact information: dbelter@ualberta.ca.
- Bromilow, Sean. M.Sc. (Year 1 of 3). Genetic divergences of Peace River grassland butterflies. Department of Biological Sciences. Supervised by Dr. Felix Sperling. Contact information: bromilow@ualberta.ca.
- Elliott, Christina. M.Sc. (Year 1 of 2). Male-male competition in the large aspen tortrix. Department of Biological Sciences. Supervised by Dr. Maya Evenden. Contact information: elliott@ualberta.ca.

• Laffin, Richard.  M.Sc. (Year 3 of 3).  Origins and genetic diversity of Ceutorhynchus weevils.  Department of Biological Sciences.  Co-supervised by Dr. Felix Sperling and Dr. Lloyd Dosdall.  Contact information: rlaffin@ualberta.ca.

• Lopez, Mirey.  B.Sc. (Year 4 of 4).  Impact of size and age on the reproductive biology of the large aspen tortix.  Department of Biological Sciences.  Supervised by Dr. Maya Evenden.  Contact information: mslopez@ualberta.ca.

• Lumley, Lisa.  M.Sc. (Year 1 of 3).  Genetic architecture of species differences between Choristoneura spruce budworm moths.  Department of Biological Sciences.  Supervised by Dr. Felix Sperling.  Contact information: llumley@ualberta.ca.


• Nazari, Vazrick.  M.Sc., probational (Year 2 of 3).  Phylogeography and systematics of swallowtail butterflies in the tribe Zerinthiini.  Department of Biological Sciences.  Supervised by Dr. Felix Sperling.  Contact information: vnazari@ualberta.ca.


• Roe, Amanda.  Ph.D. (Year 4 of 5).  Identification and evolution of Dioryctria cone borer moths.  Department of Biological Sciences.  Supervised by Dr. Felix Sperling.  Contact information: aroe@ualberta.ca.

• Schmidt, Chris.  Ph.D. (Year 2 of 5).  Systematics of Grammia arctiid moths.  Department of Biological Sciences.  Supervised by Dr. Felix Sperling.  Contact information: bjorn@ualberta.ca.


• Wins-Purdy, Andreas.  M.Sc. (Year 1 of 2).  Effect of pheromone and horticultural oil on the reproductive behaviour of the obliquebanded leafroller.  Department of Biological Sciences.  Supervised by Dr. Maya Evenden.  Contact information: andreasw@ualberta.ca.

Changes in Professional Staff.  Dr. Ken Fry has moved to Olds College.  His new contact information is:  Instructor - Entomology, Land, Environmental, and Horticultural Sciences, 4500-50th Street, Olds AB  T4H 1R6, tel. 403-556-4668 fax. 403-556-4713, e-mail: kfry@admin.oldscollege.ca

Job Postings.  A two-year postdoctoral fellow (contingent upon the successful outcome of a major grant application) is being sought to work on voraxin, the recently characterized protein produced by the gonad of male ticks which stimulates the female to engorge (see
Weiss & Kaufman, 2004 PNAS 101:5874-5879). The ideal candidate will have worked on ticks or insects, and will have significant experience in the following areas: standard biochemical and molecular techniques, tissue/organ culture, immunohistochemistry, electron microscopy. Refer to the Ent. Soc. Alberta website at: http://www.biology.ualberta.ca/courses.hp/esa/position.htm
Expressions of interest should be sent to: Dr. W. Reuben Kaufman, Department of Biological Sciences, University of Alberta, Edmonton, AB, Canada, T6G 2E9. E-mail: reuben.kaufman@ualberta.ca.

Events. Nov 3-5, 2005: The 55th Meeting of Entomological Society of Canada will be held jointly with Ent. Soc. Alberta. The joint meetings will be held at the Radisson Hotel and Conference Centre in lovely Canmore. Incoming President and General Chair for the 2005 Joint Annual Meeting is John Acorn.


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Jennifer Otani
ESA Northern Director
October 2004
ANNUAL REPORT OF THE CENTRAL DIRECTOR

Folks working with insects:

- Rob Longair.  a) Arranged to have Tonya Mousseau (student of Derek Sikes) work on preliminary list of species at Kananaskis Field Station at Barrier Lake based on literature, specimens from entomology field course and other collections.  b) Big Synagris wasp (Vespidae: Eumeninae) paper due out shortly in Journal of the Kansas Ent Soc.  c) Helping to organize Waterton Lakes bioblitz for next June/July.  d) Continued sorting and curation of material from Waterton Lakes NP, Yoho and Kootenay NP.  e) Carl Yoshimoto continues to extract various groups from samples.  Continued malaise sampling in vicinity of Calgary.

- Gordon Pritchard (no update on projects listed in Spring 2004).  a) The new fly manuscript.  b) Writing up the results of a 10-year study of *Hetaerina americana* (Odonata) in Hot Brook, S.D.  c) Writing up the results of a study of the effects of road-twinning on roadside insect communities in Banff N.P.  d) Planning further studies of the effects of road-twinning on the behavior and population dynamics of ants and opiliones.  e) Morphometrics of Zygoptera larvae in relation to growth rates and voltinism.

- Mary Reid.  Active projects in lab center on mountain pine beetles (MPB).  Ché Elkin will be defending his PhD thesis on habitat selection by MPB in December 2004.  Tanya Latty is now a PhD student looking at pioneer MPB (she won the President's Prize for best student paper in behavioral and population ecology at the recent ESC meeting in PEI).  Two undergraduate students are conducting research projects.  Mike Climie is examining within-tree MPB settlement patterns and distribution.  Robyn Foote is examining whether trees located next to trees undergoing MPB attack increase their defences.

- Derek Sikes.  a) Revision of subfamily Nicrophorinae (Silphidae).  1) Collecting morphometric & DNA data to distinguish 2 possible cryptic species of *Nicrophorus* - a half year undergraduate independent project on this is being conducted by Marcia Ricketts.  2) Focus on new species in the SE Asian nepalensis group, ms in prep (will have a PhD student, Tonya Mousseau, starting January '05 who will focus on the evolution & biogeography of this sp group).  3) Investigation of a possible case of morphological LBA due to selective convergence - involves comparison of behavior of Bayesian model-based phylogenetic inference to parsimony.  b) Wrapping up Beetles of Rhode Island project, book at printers!

- Steve Vamosi.  New assist prof, evolutionary ecologist, predator/prey interactions, Dytiscidae “Evolution of hosts and prey in response to attack by parasitoids and predators, respectively, although also interested in ecological character displacement, phylogenetics, and sexual conflict.”

- Brad Jones (M.Sc. candidate) has been studying the oviposition behaviour of two strains of cowpea weevils (*Callosobruchus maculatus*) in the lab.  He is also starting to plan for the upcoming field season, which will see him investigating interactions between dytiscid beetles and larval odonates.  Dr. Jana Vamosi (research associate) is converting historical records of dytiscid occurrences in Alberta into an electronic
database as a first step in our investigations into the effects of anthropogenic disturbances on their abundance and distribution.

- Jack Zloty. Phylogeny of Tabanomorpha (Diptera) – description and phylogenetic analysis of the recently discovered unusual fly that turned out to be a new genus and species of a new family. Given the extensive knowledge of aquatic Diptera in North America, this enigmatic fly certainly represented one of the most surprising discoveries in Diptera from this region for some time. Also, our fly paper (Discovered in our backyard: a new genus and species of a new family from the Rocky Mountains of North America (Diptera, Tabanomorpha) will be out in the first issue (2005) of Systematic Entomology. Phylogeny and Biogeography of Ameletus mayflies. Mayflies of Alberta. Taxonomy of the tropical damselflies of the genera Cora and Hetaerina. Gordon officially retired ~5 years ago but he is still active.

- Ernest Mengersen. Still busy & entomologizing. Attended the annual meeting & looks forward to both upcoming meetings in Canmore. Is offering to help also.

- Ron Madge. PhD under George Ball, Lebia. Retired, carrion beetle taxonomist & my collaborator - still visiting my lab about once or twice a month. Working on a ms with me revising a southeast Asian species group of Nicrophorus.

Dr. Derek Sikes
ESA Central Director
October 2004
ANNUAL REPORT OF THE SOUTHERN DIRECTOR

Upcoming events-2005:

• There will be a talk entitled “Spider’s Niche” by John Hancock at the Alberta Wilderness Association office on Tues, Mar 8/05, 7 p.m. (AWA located at 455 12th Street NW in Calgary) Tickets are $5.00. Interested persons are asked to pre-register at 403-283-2025.

• Lethbridge regional science fair—I contacted Byron Puchalski, technician at AAFC-Lethbridge to get some more information on the Lethbridge Regional Science Fair, which the committee that is organizing it hopes to run in mid-March. If it is established, it will increase the number of regional science fairs in Alberta to 6. He is hoping that once the fair comes about, our society will be able to provide judges for entomological projects by both elementary and senior (grades 11-12) students. Committee members will likely be in touch with the ESA once details are finalized.

New Students:

• Kimberly Rondeau is a masters student with Jens Roland (U of A) and Rob Bourchier (AAFC-Lethbridge) in her second year of study. She is investigating the dispersal of the biocontrol agent *Cyphocleonus achates* on diffuse knapweed. Specifically, she is using mark-recapture methods to determine if 1) release density, 2) shorter photoperiod and reduced knapweed quality, or 3) plant phenology influences dispersal of adults. She has so far discovered that release density has an effect of dispersal rates of adults.

• Stephane Bourassa, a new masters student, is examining the impact of agricultural practices on carabid beetle diversity in Southern Alberta. He is examining how practices such as herbicide trials and watering regimes on roundup-ready corn affect beetle diversity, as well as the impact of more conventional agricultural practices on potatoes. He will be working under the supervision of Héctor Cárcamo, and John Spence.

List of contacts for entomological events happening in southern Alberta:

• Waterton Lakes National Park - Cyndi Smith, Conservation Biologist (403-859-5137) Email: Cyndi.Smith@pc.gc.ca

• Helen Schuler Coulee Centre - Shawna Cook, nature interpretation co-ordinator (403-320-3064)

• Police Point Park Interpretive Centre, Medicine Hat - Nature Line at 403-529-6225

• CVC farms, located 10 minutes east of Pincher Creek on Hwy #3 (and Range Road 290) www.cvcfarms.com

• John Hancock spidermanjohn@shaw.ca

• Alberta Wilderness Association Outreach - Nigel Douglas awa@shaw.ca (This would likely be a contact person for the central director more than southern).

Stephanie Erb
ESA Southern Director
October 2004
ANNUAL REPORT FROM REGIONAL DIRECTOR TO ESC

Financial health of ESC: The ESC is generally doing OK. It has plenty of money in the bank, but this year they spent more than they received, so they need to look at increasing revenue, or decreasing costs, to remain viable over the long term. They're considering raising membership fees for the first time in about 15 years.

Strategic Review: The ESC is carrying out a strategic review. They'll look at long-term trends, and among other things, they're going to take a look at using the WWW more effectively for communication, and in the production of the Bulletin and Can Ent. They may hire someone in the office to help set up some of these things - for example, an electronic reviewing system for Can Ent.

Can Ent: New look is in the works, with series of color photos on the cover, which will change every year. We may have a contest to select the pictures.

Awards: Hewitt Award, Gold Medal, Criddle Award, and Honourary Members: Talk to Greg about getting nominations forwarded to the ESC Awards Committee. Student Awards, incl. 3 new ESC scholarships - check ESC website for details: ESC Travel Awards - 2 awards each year, of up to $2000 each. Biol Surv. Canada award - $1000 every 2 years, for work on arthropod biodiversity. Conference Travel Award - 1 or more award of $500 each year. John Borden Award - in the works.

ESC website - lots of good info there - http://esc-sec.org/ - incl. guidelines for hosting the national meeting - make sure Acorn has this!

Advice for our Canmore 2005 meeting:
- charge more money for "in-person" registrants, to encourage advance registration
- consider offering free or reduced registration to bona fide amateurs
- make sure to offer cheap registration to ESC student members
- administer the NSERC Biocontrol Network Award.
- make sure students are organizing the silent auction of books
- coordinate with Syncroscopy for their table space
- coordinate with fundraising committee
- we need to judge student talks - advice was to try to assign an objective score to each one; easier to compare notes later. Need 1 award for each session.
- try to have the 2nd gov. board meeting right after the ESC AGM, but also plan an alternate time slot later.
- Allow more time than usual for the AGM, because we'll be discussing our strategic review.
- Keep Bob Lamb "VERY in the loop" regarding meeting room bookings etc, in Canmore - he will have specific room requirements for the exec and the general society business meetings.
- All meeting notices need to be in both languages. We can apply to the ESC for a translation grant, to help get this done (I have some details).

Greg Pohl
ESA Director to ESC
October 2004
ANNUAL REPORT OF THE WEBMASTER

The number of visits that the ESA website receives continues to increase year after year, so the website appears to remain a useful tool for people interested in entomology. Since the inception of the website in 2000, a total of about 9,500 visits have been recorded. Mean (± SE) usage during a 42-week period in 2004, ending October 17, was 71.3 ± 4.4 hits/week. By contrast, mean (± SE) usage in 2003 was 49.4 ± 3.6 hits/week.

The overall appearance of the website remained largely unchanged since the 2003 AGM. Revisions to the website concerned updates and reorganization of the information on a number of pages. One page, entitled ‘Positions available’, was added. One major improvement was the addition of the 2002 ESA Proceedings to the ‘Publication of the ESA, page. This effort was aided considerably by the use of an electronic copy that I received from Dr. Dan Johnson. Addition to the website of previous editions of the Proceedings will require more effort because it appears that electronic copies of pre-2002 editions do not exist. In any event, during the coming year, I plan to make available on the website recent editions of the Proceedings (i.e., 1990 to present). Last, but not least, I thank Dr. Cedric Gillott from the Entomological Society of Saskatchewan for sending to me ready-to-upload notices concerning the 2004 joint meeting between our Societies. His efforts kept members of both Societies well informed.

The Department of Biological Sciences at the University of Alberta continued to provide us with excellent computing service by way of supplying space on their server for our website. I thank the Department for hosting our website free of charge.

Suggestions for improvement of the website are always welcome.

Dr. Troy Danyk
ESA Webmaster
October 2004
TREASURER’S INTERIM FINANCIAL REPORT

Balances at start of 2004
Term deposit $15,000.00
Chequing $10,922.52

Credits

Return of Loan to tick conference (R. Kaufmann) $1,000.00
Memberships (9 regular, 3 student) $105.00
Total $1,105.00

Debits

ESAB/ESC j.a.m. 2005 (Facility deposit Canmore) $1,000.00
Parchement framing, ESAB 50th anniversary $396.01
Awards (student travel) $100.00
Misc. meeting expenses ESAB executive $255.93
Total $1,751.94

Current balance (October 26, 2004)

Term deposit $15,000.00
Chequing $10,275.58
2004 meeting expenditures $3,155.26
2004 meeting credits $3,200.00

Daryl Williams
ESA Treasurer
October 2004
Photographs courtesy of Derrick Kanashiro

Group Photo: Attendees at the 2004 Joint meeting of the Entomological Societies of Alberta and Saskatchewan, October 2004, Lloydminster AB.
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Page 47
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Page 48