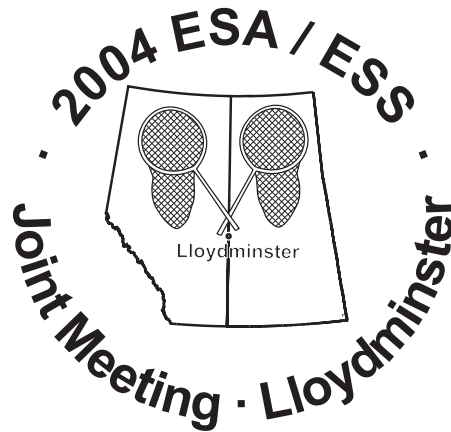


July 2005

ISSN 0071-0709

**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

***Joint meeting logo credit: Julie Soroka, David Giffen**

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: Halipilidae).** 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 coneroller, *Caloptilia fraxinella* (Lepidoptera: Gracillariidae).** G. Armitage^{1*}, 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. Bourassa^{1,2*}, 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. Gariepy^{1,2,3 *}, 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. Laing^{1*} 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 **Saproxyllic 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 saproxyllic 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. Bergeron^{1,2*}, 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. Frost^{1*} 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. Phillips^{1*} 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. Nemeč¹⁺, 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.

Saturday, 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.
- 9:00-9:15 **2004 Alberta spider bites- actual and potential.** 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 **ESAlberta 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. Armitage^{1*}, 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.

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

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. Spence¹ and J. Volney². ¹Dept. Renewable Resources, University of Alberta, ²Natural 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. Spence¹, H.A. Cárcamo², R.E. Blackshaw², F.J. Larney² and K. Floate², ¹Dept. Renewable Resources, University of Alberta, ²Agriculture 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.

11. **Saproxylic beetles, post-fire salvage logging, and nutrient dynamics of burned mixed-wood forests.** T. Cobb*, Dept. Renewable Resources, University of Alberta.

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. bembidioides*, 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. Frost^{1*} 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.

18. A single-step multiplex PCR assay for the detection of European *Peristenus* spp. (Hymenoptera: Braconidae), parasitoids of *Lygus* spp. (Hemiptera: Miridae).

T.D. Garipey^{1,2,3*}, 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.

19. 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.

20. 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.

21. 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.

22. Molecular variability of *Ceutorhynchus neglectus* (Coleoptera: Curculionidae).

R. Laffin^{1*}, 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. Laing^{1*} 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.

24. Alberta spider bite website. R. Leech and T. Thormin, Provincial Museum of Alberta.

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.

25. Alberta spider bites- actual and potential. R. Leech and T. Thormin, Provincial Museum of Alberta.

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.

28. **Adaptive responses of flying locusts to virtual conspecifics and predators.** N.A. Mohr* and J.R. Gray, Dept. Biology, University of Saskatchewan.

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 glabratus* 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. Nemezc¹⁺, 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. Phillips^{1*} 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. 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.

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. Dossall, 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. angustifolia*'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

Armitage, G.....	1
Barkway, M.....	2
Bartlet, R.....	38
Battigelli, J.....	3, 4
Berch, S.....	3, 4
Beres, B.L.....	5, 9
Bergeron, C.....	6
Blackshaw, R.E.....	7
Bourassa, S.....	7
Brockley, R.....	3
Bromilow, S.....	8
Byers, J.R.....	5
Cárcamo, H.A.....	5, 7, 9, 10
Clarke, F.....	5
Clayton, G.....	33
Cobb, T.....	11
Cossé, A.....	38
Curry, P.S.....	12, 23
Davis, A.R.....	42, 43
Dechene, A.D.....	13
DeHaas, L.....	17
DePauw, R.....	5
Digweed, S.C.....	14
Dosdall, L.....	15, 22, 33, 39
Dunn, R.....	10
Erlandson, M.....	18
Evenden, M.....	1, 16
Floate, K.....	7, 9
Frost, C.....	17
Gariepy, T.D.....	18
Gillott, C.....	18
Gray, J.R.....	28
Gries, G.....	16
Gries, R.....	1, 16
Harker, N.....	33
Hartley, S.....	12
Hegedus, D.....	19
Heming, B.....	1
Hope, G.....	4
Jacobs, J.....	20
Koivula, M.....	21
Kuhlmann, U.....	18

Laffin, R.....	22
Laing, E.....	23
Larney, F.J.....	7
Lee, B.....	9
Leech, R.....	24, 25
MacQuarrie, C.....	26
McClay, A.S.....	27
Mohr, N.A.....	28
Mousseau, T.....	29
Naskrecki, P.....	30
Nemecz, A.....	33
Nordstom, W.....	31
O'Donovan, J.....	33
Olfert, O.....	10, 32
Otani, J.....	33
Phillips, I.D.....	34
Proctor, H.....	8, 35
Schmidt, C.....	36
Schmiegelow, F.K.A.....	21
Sikes, D.S.....	37
Soroka, J.....	38
Spence, J.R.....	2, 6, 7, 21
Sperling, F.....	22, 36
Thormin, T.....	24, 25
Ulmer, B.....	39
Volney, J.....	6
Walter, D.....	8, 40
Weiss, R.....	32
Williams, D.....	41
Willis, C.K.R.....	34
Wist, T.....	42, 43
Zilkoski, B.....	38

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).

1. Additions to Agenda. Added items 10) 2005 Joint Ann Meeting and 11) Student Awards.

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

6. Treasurer's Interim 2004 Financial Report

- 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

CARRIED

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 coneroller. Department of Biological Sciences. Supervised by Dr. Maya Evenden and Dr. Bruce Heming. Contact information: grahama@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.
- Bergeron, C. Ph.D. (Year 3 of 5). Fire history and historical effects on arthropods. Department of Renewable Resources. Co-supervised by Drs. John Spence and Jan Volney. Contact information: Not available.
- Boeckner, Matthew. Ph.D. (Year 2 of 5). Marine meiofaunal diversity. Department of Biological Sciences. Co-supervised by Dr. Heather Proctor and Dr. Rich Palmer. Contact information: boeckner@ualberta.ca.
- Bourassa, Stephan. M.Sc. (Year 1 of 2/3). Working title not available. Department of Renewable Resources. Supervised by Drs. John Spence and Hector Carcamo. Contact information: Not available.
- 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.
- Cobb, Tyler. Ph. D. (Year 3 of 4). Impacts of salvage logging on insect communities. Department of Renewable Resources. Co-supervised by Drs. John Spence and David Langor. Contact information: Not available.
- Dechene, Andrea. B. Sc. (Year 4 of 4). Natural history of Sericoda beetles and their mites. Department of Biological Sciences. Co-supervised by Drs. Spence and Heather Proctor. Contact information: Not available.
- 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.
- Frost, C. B.Sc. (Year 3 of 4). Factors regulating ballooning in pisaurid spiders. Department of Biological Sciences. Supervised by Dr. John Spence. Contact information: Not available.
- Jacobs, J. M.Sc. (Completed Spring 2004). Partial retention harvest, fire and saproxylic beetles. Department of Renewable Resources. Co-supervised by Drs. John Spence and David Langor. Contact information: Not available.

- Korinus, Lusi. Ph.D. (Year 6 of 6). Agroforestry and spider biodiversity in Indonesia. Department of Biological Sciences. Supervised by Dr. John Spence. Contact information: Not available.
- 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.
- MacQuarrie, Chris. Ph.D. (Year 2 of 4). Biological control of birch leaf-mining sawflies. Department of Renewable Resources. Co-supervised by Drs. John Spence and David Langor. Contact information: Not available.
- Montes de Oca, Enrique. Ph.D. (Year 6 of 6). Effects of altitude and patterns of land use on Mexican beetle assemblages. Department of Biological Sciences. Co-supervised by Drs. John Spence and George Ball. Contact information: Not available.
- 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.
- Phillips, I. M.Sc. (Year 1 of 2/3). Patterns of habitat use in a colonizing crayfish. Department of Biological Sciences. Co-supervised by Drs. Rolf Vinebrooke and John Spence. Contact information: Not available.
- 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.
- Shorthouse, David. Ph.D. (Year 6 of 6). Partial retention harvests and spider assemblages. Department of Biological Sciences. Co-supervised by Drs. John Spence and Jan Volney. Contact information: Not available.
- 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.

News. John Acorn's new book, "Damselflies of Alberta: Flying Neon Toothpicks in the Grass" was published in September 2004 and is now available at all fine bookstores. It contains 168 pages of good stuff and is published by the University of Alberta (ISBN: 0888644191).

Contact Information for Director:

Jennifer Otani

Beaverlodge Research Farm

Agriculture & Agri-Food Canada

P.O. Box 29

Beaverlodge AB T0H 0C0

tel. 780-354-5132 fax. 780-354-8171

e-mail: otaniij@agr.gc.ca

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 (\pm SE) usage during a 42-week period in 2004, ending October 17, was 71.3 \pm 4.4 hits/week. By contrast, mean (\pm SE) usage in 2003 was 49.4 \pm 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	\$10922.52

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	\$3155.26
2004 meeting credits	\$3200.00

Daryl Williams
ESA Treasurer
October 2004

Photographs courtesy of Derrick Kanashiro



Registration and Poster Session: 1. Amanda Roe, Chris MacQuarie, Heather Proctor, Lorraine Braune, Daryl Williams, Julie Soroka. 2.ESA Executive 2004. 3. Stephanie Erb, Kim Rondeau. 4. Tara Garipey, Brian Ulmer, Brian Galka 5. Dave Walter, Kaye Ball, Chris Schmidt, Greg Pohl. 6. Jeff Battigelli, Tonya Mousseau 7. Felix Sperling, Brian Ulmer, Tara Garipey, Maya Evenden. 8. Christina Elliott, Mirey Lopez, Rich Laffin, George Ball, Tyler Cobb.



Awards: 9. Robert Holmberg: presentation of Carr Award to Don Buckle. 10. Cedric Gillott accepts Carr Award on behalf of Don Buckle. Presented by ESA President, Heather Proctor. 11. Don Buckle and Cedric Gillott. 12. Heather Proctor presents Tyler Cobb with Best Student Presentation Award. 13. Jack Gray, ESS President, presents Tara Gariepy with Best Student Presentation Award. 14. Derrick Kanashiro presents Iain Phillips and Andrea Dechene with ESA Student Travel Awards.



Banquet: 15. Heather Proctor thanks Piotr Naskrecki-Keynote Speaker 16. Jack Gray, ESS President 17. Piotr Naskrecki, Derek Sykes, Felix Sperling 18. Colin Burgeron 19. Brian Ulmer, Dee Pyra, Lorraine Braun, Julie Soroka 20. Jack Gray, Cedric Gillott 21. Jennifer Otanni, Annie Nemezc, Hector Cárcamo, Brian Beres



Banquet: 22. Amanda Roe, Andreas Wins-Purdy, Heather Proctor, Kim Rondeau, Rich Laffin, Carol Frost, Lisa Lumley. 23. Pierre Terret, Dustin Hartley 24. Sean Bromilow, Erin Laing. 25. Lisa Lumley, Sean Bromilow, Dustin Hartley. 26. Mirey Lopez, Laura Muis, Carol Frost



Scientific Session and AGM: 27. Hector Cárcamo. 28. Brian Beres. 29. Brian Ulmer. 30. Alec McClay. 31. Robin Leech. 32. Charley Bird, Greg Pohl. 33. Lisa Lumley, Chris Schmidt. 34. Amanda Roe, Andreas Wins-Purdy, Erin Laing.



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

Last Name	First Name	Contact Information	Phone	E-mail
Honourary Members				
Ball	George	Dept. of Biological Sciences, Univ. Alberta	(780) 492-2084	gball@ualberta.ca
Carr	John	24 Dalrymple Green NW, Calgary AB	(403) 288-4634	
Gurba	Joe	9415-144 St, Edmonton AB	(780) 452-6752	
Gushul	Evan	1714-15 Ave South, Lethbridge AB	(403) 328-2426	
Larson	Ruby	410 20, 3 ST South, Lethbridge AB	(403) 327-2089	
Shemanchuk	Joseph	1050 Henderson Lake Blvd, Lethbridge AB	(403) 328-2171	
Regular Members				
Acorn	John	132 Walsh Crescent, Edmonton AB		janature@compusmart.ab.ca
Ahmad	Zulfiqar	172 Castlegreen Close NE, Calgary AB	(403) 312-3102	zulfjee@hotmail.com
Ampong-Nyarko	Kwesi	Crop diversification Centre North	(780) 415-2316	kwesi.ampong-nyarko@gov.ab.ca
Anweiler	Gary	7212-103 Ave, Edmonton, AB	(780) 452-4245	gganweiler@sprint.ca
Ball	Kay	8108-138 St, Edmonton, AB	(780) 483-4951	keball@telusplanet.net
Barr	Bill	12316-93St, Edmonton, AB	(780) 474-6134	
Battigelli	Jeff	Earthworks Research Group	(780) 482-3744	jeff@earthworksresearch.com
Beres	Brian	AAFC Research Centre, Crop Sciences Section	(403) 317-2251	beresb@agr.gc.ca
Bird	Charley	Box 22, Erskine, AB	(403) 742-0626	
Birse	Ian	11332-46 Ave, Edmonton AB	(780) 437-3195	
Bjornson	Susan	Pacific Agri-food Research Centre, AAFC	(604) 796-2221 x236	
Bourchier	Rob	AAFC Research Centre, Crop Sciences Section	(403) 317-2298	bourchierr@agr.gc.ca
Braun	Lorraine	AAFC, Saskatoon Research Centre	(306) 956-7650	braunl@agr.gc.ca
Brons	Gloria	Butterfly Wings n' Wishes	(780) 462-1839	gloria@butterflyab.com
Bryan	Nora	3307 12th ave SW, Calgary AB	(403) 246-7601	
Byers	Bob	AAFC Research Centre	(403) 327-4561	byers@agr.gc.ca
Byrtus	Gary	16531-114 St, Edmonton AB	(780) 427-9911	gbyrtus@env.gov.ab.ca
Cade	Elsa	109 Kings Bay S, Lethbridge AB	(403) 329-2201	ecade@telusplanet.net
Cade	William	University of Lethbridge	(403) 329-2201	Bill.Cade@uleth.ca
Calpas	James	Alberta Agriculture	(780) 422-4911	pestman@shaw.ca
Carcamo	Hector	AAFC Research Centre, Crop Sciences Section	(403) 317-2247	carcamoh@agr.gc.ca
Cartar	Ralph	Dept. of Biological Sciences, Univ. Lethbridge	(403) 329-2122	cartar@uleth.ca
Cerezke	Herb	11215-36A Ave, Edmonton AB	(780) 435-6007	cere@planet.eon.net
Christensen	Bruce	5702-43A ST, Vegereville, AB	(780) 632-2240	christe@digitalweb.net
Cohen	Michael	Dept. of Biological Sciences	(780) 492-0412	michael.cohen@ualberta.ca
Collister	Doug	3426 Lane Cres. SW, Calgary AB	(403) 246-2697	
Colwell	Doug	Lethbridge Research Centre	(403) 317-2254	colweld@agr.gc.ca
Cooke	Barry	#219, 1810 NW 23 Blvd., Gainesville FL	(352) 377-8302	
Crowe	Mike	University of Lethbridge	(403) 317-3430	mike.crowe@uleth.ca
Cryer	Karen	Department of Renewable Resources, Univ. Alberta	(780) 492-0463	kcryer@ualberta.ca
Cuny	Robert	Lakeland College	(780) 871-5766	Robert.Cuny@lakelandc.ab.ca
Dacks	Andrew	10835 - 80 Ave., Edmonton AB	(780) 438-0357	adacks@hotmail.com

Members

Danyk	Troy	105 Fox Hollow Bay, Lethbridge AB	(403) 381-7634	tdanyk@hotmail.com
DeClerck-Floate	Rosemarie	AAFC Research Centre	(403) 317-2270	floate@agr.gc.ca
Dickinson	Tracy	AAFC Research Centre	(403) 327-4561	x.dickinson@agr.gc.ca
Digweed	Scott	Canadian Forest Service		<u>scott_digweed@canada.com</u>
Dolinski	Michael	Alberta Agriculture, Food & Rural Development	(780) 427-4873	mike.dolinski@gov.ab.ca
Dosdall	Lloyd	Pest Prevention and Management Unit, Alberta Agriculture	(780) 422-4911	lloyd.dosdall@gov.ab.ca
Edwards	Jason	Department of Natural Resources	(780) 989-5129	jasedwar@nrcan.gc.ca
Erb	Stephanie	AAFC Research Centre	(403) 317-3308	erbs@agr.gc.ca
Evans	George	Dept. of Biological Sciences, Univ. Alberta	(780) 492-3376	wevans@ualberta.ca
Evenden	Maya	Dept. Biological Sciences, Univ. Alberta	(780) 492-1873	mevenden@ualberta.ca
Farooq	Muhammad	#601, 103 West Lodge Ave., Toronto ON	(416) 707-8930	farooqamer@yahoo.com
Fedoruk	Joanna	J. Fedoruk and Assoc. Environmental Consulting	(780) 942-4409	fedoruk@telusplanet.net
Floate	Kevin	AAFC Research Centre	(403) 317-2242	floatek@agr.gc.ca
Fownes	Sherri	10407-136 St., Edmonton AB	(780) 433-2952	sherrif1@telusplanet.net
Fry	Ken	Olds Colledge	(403) 556-4668	kfry@admin.oldscollege.ca
Gardiner	Ian	P.O. Box 2192, Calgary AB		
Gardner	Karen	AAFC Research Centre	(403) 327-4561	dragonflywish@yahoo.com
Goettel	Mark	AAFC Research Centre	(403) 317-2264	goettel@agr.gc.ca
Gooding	Ronald	Dept. of Biological Sciences, Univ. Alberta	(780) 492-3929	ron.gooding@ualberta.ca
Gray	Dawn	AAFC Research Centre	(403) 327-4561	e.grayd@agr.gc.ca
Griffiths	Graham	117 Collingwood Cove, 51551 RR 212A, Sherwood Pk AB	(780) 922-3221	gcdgriff@telusplanet.net
Hammond	James	Department of Natural Resources, Canadian Forest Service		jhammond@nrcan.gc.ca
Harris	Brenda	Dow Agro Sciences	(403) 735-8829	
Harris	Peter	245 Coachwood Pt. W., Lethbridge AB	(403) 327-4561	harris@agr.gc.ca
Heming	Bruce	Dept. of Biological Sciences, Univ. Alberta	(780) 492-4173	bheming@ualberta.ca
Heming	Karin	10948 - 75 Ave, Edmonton AB	(780) 435-5791	
Hilchie	Gerald	Dept. of Biological Sciences, Univ. Alberta	(780) 492-3702	gerald.hilchie@ualberta.ca
Hindmarch	Trevor	10216 122 Street - Apt. 205, Edmonton AB		thindmar@yahoo.ca
Holmberg	Robert	Centre for Science, Athabasca Univ.	(780) 675-6203	robert@athabascau.ca
Hughes	Robert	Alberta Research Council	(780) 632-8237	
Johnson	Dan	AAFC Research Centre, 5403 - 1 Ave. S., Lethbridge	403 327-4561	johnsondl@agr.gc.ca
Jones	James	Agronomy Unit, 6903-116 St, Edmonton AB	(780) 422-0879	jim.jones@gov.ab.ca
Kalischuk	Andrea	AAFC Research Centre, 5403 - 1 Ave. S., Lethbridge	(403) 381-5898	andrea.kalischuk@gov.ab.ca
Kanashiro	Derrick	AAFC Research Centre	(403) 327-4560	kanashirod@agr.gc.ca
Kaufman	Reuben	Dept. of Biological Sciences, Univ. Alberta	(780) 492-1279	reuben.kaufman@ualberta.ca
Keddie	Andrew	Dept. of Biological Sciences, Univ. Alberta	(780) 492-0455	akeddie@gpu.srv.ualberta.ca
Khan	Badruddinali (Ali)	Alberta Agriculture Food and Rural Development		
Kirkpatrick	Cara	59 Manchester Dr., Sherwood Park AB	(780) 467-2154	cara_k@hotmail.com
Koga	Hiro	AAFC, Food Production & Inspection Branch	(403) 292-4993	kogan@agr.gc.ca
Kominek	Christine	Sustainable Resource Development		christine.kominek@gov.ab.ca
Kyei-Poku	George	AAFC Research Centre, 5403 - 1 Ave. S., Lethbridge	(403) 317-2232	kyei-pokug@agr.gc.ca

Members

Labun	Ted	Novartis Crop Protection	(403) 777-2901	
Langor	David	Department of Natural Resources, Canadian Forest Service	(780) 435-7330	dlangor@nrcan.gc.ca
Larson	David	Augustana University College	(780) 679-1179	larsd@augustana.ab.ca
Leech	Robin	Biosciences, Northern Alberta Institute of Technology	(780) 471-8850	releech@telusplanet.net
Leggett	Fran	AAFC Research Centre	(403) 317-3364	leggett@agr.gc.ca
Longair	Robert	Dept. of Biological Sciences, Univ. Calgary	(403) 220-7387	longair@ucalgary.ca
Lumley	Lisa	Alberta Research Council	(780) 632-8245	
Lux	Dan	Alberta Sustainable Resource Development	(403) 845-8360	Daniel.Lux@gov.ab.ca
Lysyk	Tim	AAFC Research Centre	(403) 327-4591	Elysyk@agr.gc.ca
Macaulay	Doug	Department of Natural Resources, Canadian Forest Service		
Maximchuk	Mike	Alberta Land and Forest Service	(780) 624-6221	mike.maximchuk@gov.ab.ca
McClay	Alec	Alberta Research Council	(780) 632-8207	alec@arc.ab.ca
McCloskey	Catherine	DOW Agrosiences Canada Inc.	(403) 735-8852	
McFarlane	Michael	Alberta Agriculture, Food, and Rural Development		
Meers	Scott	Alberta Agriculture	(403) 934-3675	scott.meers@gov.ab.ca
Mitchell	Bev	Dept. of Biological Sciences, Univ. Alberta	(780) 492-4637	bev.mitchell@ualberta.ca
Mueller	Erica	Alberta Sustainable Resource Development	(780) 865-8267	erica.mueller@gov.ab.ca
Noronha	Christine	AAFC Research Centre		noronhac@agr.gc.ca
Ono	Hideji	Alberta Sustainable Resource Development	(780) 422-8801	hideji.ono@gov.ab.ca
Osler	Graham	AAFC Research Centre	(403) 317-3375	oslerg@agr.gc.ca
Otani	Jennifer	AAFC	(780) 354-5132	otanij@agr.gc.ca
Paton	Dale	Box 382 Blairmore AB	(403) 562-7271	ptarmig@telusplanet.net
Pearson Burke	Mary	256 - Erin Mount Cr. S.E., Calgary AB	(403) 248-0512	
Pohl	Greg	Department of Natural Resources, Canadian Forest Service	(780) 435-7211	gpohl@nrcan.gc.ca
Pritchard	Gordon	Dept. of Biological Sciences, Univ. Calgary	(403) 220-6791	gpritch@ucalgary.ca
Proctor	Heather	Dept. of Biological Sciences, Univ. Alberta	(780) 492-5704	hproctor@ualberta.ca
Ranasinghe	Sunil	Alberta Sustainable Resource Development	(780) 427-6807	sunil.ranasinghe@gov.ab.ca
Rau	Jeff	AAFC Research Centre		jeff_rau@hotmail.com
Reichardt	Todd	Calgary Parks and Recreation	(403) 221-4693	
Reid	Mary	Dept. of Biological Sciences, Univ. Calgary	(403) 220-3033	mreid@acs.ucalgary.ca
Rickert	Jobst	10475 - 143 St., Edmonton AB	(780) 454-4725	
Ryan	James	Ryan & Hlchie Biological Consultants Ltd.	(780) 431-0332	
Sanderson	Ken	2435 Chicoutimi Dr. NW, Calgary AB	(403) 678-5508	
Saunders	Chris	Pest Management Services	(780) 496-6395	chris.saunders@gov.edmonton.ab.
Schaaf	Al	Big Horn Pest Control Ltd.	(403) 320-1555	bhpc@telusplanet.net
Shpeley	Danny	Dept. of Biological Sciences, Univ. Alberta	(780) 492-0461	dshpeley@ualberta.ca
Sikes	Derek	Dept. Biological Sciences, U of Calgary		dsikes@ucalgary.ca
Spence	John	Department of Renewable Resources, Univ. Alberta	(780) 492-3003	john.spence@ualberta.ca
Sperling	Felix	Dept. of Biological Sciences, Univ. Alberta	(780) 492-3991	Felix.Sperling@ualberta.ca
Sperling	Janet	9131 - 118 St., Edmonton AB	(780) 434-4644	
Sproule	Al	Grande Prairie Regional College	(780) 539-2061	

Members

Thormin	Terry	Natural History Section, Provincial Museum of Alberta	(780) 453-9178	terry.thormin@gov.ab.ca
Ulmer	Bryan	Univ. Alberta		
Undershultz	Mike	Alberta Sustainable Resource Development	(780) 422-1508	mike.undershultz@gov.ab.ca
Van Hezewijk	Brian	Dept. of Biological Sciences, Univ. Lethbridge	(403) 329-2708	
Volney	Jan	Department of Natural Resources, Canadian Forest Service	(780) 435-7329	jvolney@nrcan.gc.ca
Walter	Dave	Univ. Alberta		
Warren	Tracey	2228 - 30 St. S.W., Calgary AB	(403) 246-2021	
Wilkins	Simon	City of Calgary, IPM	(403) 221-4693	simon.wilkins@gov.calgary.ab.ca
Williams	Daryl	Department of Natural Resources, Canadian Forest Service	(780) 435-7252	dawillia@nrcan.gc.ca
Wilson	Ray	AAFC Research Centre	(403) 317-3308	
Work	Tim	Dept. of Biological Sciences, Univ. Alberta	(780) 492-6965	
Zidek	Eva	301 Larch Place, Canmore AB	(403) 678-2808	
Zloty	Jack	8527 - 33 Ave. NW, Calgary AB	(403) 288-0398	jzloty@ucalgary.ca
Student Members				
Andreassen	Lars	4712 - 48 St., Camrose AB		
Bergeron	Colin	Dept. of Biological Sciences, Univ. Alberta		cb1@ualberta.ca
Brandt	James	Department of Natural Resources, Canadian Forest Service	(780) 435-7326	jbrandt@nrcan.gc.ca
Brown	Karen	Department of Renewable Resources, Univ. Alberta		karenwbrown@shaw.ca
Carney	Vanessa	University of Lethbridge	(403) 317-3430	atheta_coria@yaho.ca
Cobb	Tyler	Dept. of Biological Sciences, Univ. Alberta		tcobb@ualberta.ca
Dechene	Andrea	Dept. of Biological Sciences, Univ. Alberta		adechene@ualberta.ca
Dunlop	Julia	Department of Natural Resources, Canadian Forest Service		jdunlop@nrcan.gc.ca
Durand	Andrea	Department of Natural Resources, Canadian Forest Service		
Elkin	Che	Dept. of Biological Sciences, Univ. Calgary	(403) 220-7930	cmelkin@ucalgary.ca
Hartley	Dustin	Dept. of Biological Sciences, Univ. Alberta	(780) 492 3030	
Hayman	David	#203, 95 Brent Blvd., Strathmore AB	(403) 901-1637	davidhayman@hotmail.com
Hodnett	Kyle	Dept. of Biological Sciences, Univ. Calgary		
Hummel	Jeremy	P.O. Box 86, Coalhurst AB		beetle_man@hotmail.com
Jacobs	Joshua	Dept. of Biological Sciences, Univ. Alberta		
Korinus	Luisiana	Dept. of Biological Sciences, Univ. Alberta		
Laffin	Richard	Dept. of Biological Sciences, Univ. Alberta	(780) 492-3080	
Laing	Erin	10542 - 85 Ave., Edmonton AB		
Latty	Tanya	Dept. of Biological Sciences, Univ. Calgary	(780) 431-4913	tmlatty@ucalgary.ca
Leonhardt	Christel	Dept. of Biological Science, Univ. of Windsor	(403) 210-6834	christel_leonhardt@hotmail.com
Lysyk	Dan	10705 - 85 Ave., Edmonton AB	(780) 435-9692	dlysyk@ualberta.ca
McCluskie	Meg	Univ. of Lethbridge	(403) 329-2535	meg.mccoluskie@uleth.ca
McIntyre	Grant	Dept. of Biological Sciences, Univ. Alberta	(780) 492-3929	
McQuarrie	Chris	Dept. of Renewable Resources, Univ. Alberta	(780) 492-4155	cjm15@ualberta.ca
Mitchell	April	Dept. of Biological Sciences, Univ. Alberta		
Otterstatter	Michael	Dept. of Biological Sciences, Univ. Calgary		
Park	Jane	Dept. of Biological Sciences, Univ. Calgary	(403) 220-7930	mtm_jane@yahoo.ca

Members

Peterson	Jason	4023 Hamilton Hall, 8888 University Drive, SFU	gandalf_strider@yahoo.com
Phillips	Iain	University of Regina	phillipi@uregina.ca
Rajput	Sunil	Dept. of Biological Sciences, Univ. Alberta	srajput@ualberta.ca
Robinson	Evelyn	F - 16405 - 89 Ave., Edmonton AB	burkaw@hotmail.com
Rochon	Kateryn	313-85 Foxbend Cres. N, Lethbridge AB	(403) 317-3444
Roe	Amanda	Dept. of Biological Sciences, Univ. Alberta	aroe@ualberta.ca
Rondeau	Kimberly	AAFC Research Centre	(403) 382-3156
Sarfraz	Rana	Dept. of Biological Sciences, Univ. Alberta	KRondeau@AGR.GC.CA
Schmidt	Chris	Dept. of Biological Sciences, Univ. Alberta	rsarfraz@ualberta.ca
Shorthouse	David	Dept. of Biological Sciences, Univ. Alberta	(780) 492-3080
Snyder	Mira	Dept. of Biological Sciences, Univ. Alberta	(780) 492-1180
Van Alstine	Jeffrey	Dept. of Biological Sciences, Univ. Alberta	dps1@ualberta.ca
Whidden	Troy	Dept. of Biological Sciences, Univ. Alberta	mirams17@hotmail.com
White	Katrina	Dept. of Biological Sciences, Univ. Calgary	jdvw@ualberta.ca
Williamson	Michele	Dept. of Biological Sciences, Univ. Lethbridge	twhidden@ucalgary.ca
Library Memberships		3750 Edinburgh Dr., Regina SK	katrina.white@uleth.ca
Grande Prairie Regional College Library		Grande Prairie Regional College	
Lakeland College Library		Lakeland College	
Lethbridge Research Centre		AAFC, Lethbridge Research Station	(403) 327-4561
Medicine Hat College Library		Medicine Hat College	
N.A.I.T. Library		N.A.I.T.	
National Library of Canada		National Library of Canada, Serials Records Section	
Northern Forestry Centre Library		Canadian Forest Service, Northern Forestry Centre	
Olds College Library		Olds College	
Provincial Museum and Archives		Provincial Museum and Archives	
Red Deer College Library		Red Deer College	
S.A.I.T. Library		S.A.I.T.	
Strickland Library		University of Alberta	
University of Calgary Library		University of Calgary	
University of Lethbridge Library		University of Lethbridge	(403) 329-2263
Albert R. Mann Library		Albert R. Mann Library, Cornell University	
British Museum (Natural History) Library		British Museum (Natural History)	
Colorado State University Libraries		Colorado State University Libraries	
Senckenbergische Bibliothek		Senckenbergische Bibliothek	