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PROCEEDINGS OF THE 51ST ANNUAL MEETING OF THE

Entomological Society of Alberta

ATHABASCA, ALBERTA
OCTOBER 2-4, 2003

Contents

Entomological Society of Alberta - Executive for 2003

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Athabasca University (Office of the President, Centre for Science, Public Affairs, Facilities, Academic Support Unit, Course material Production, Library, including the following individuals: Dominique Abrioux, Blaise MacMullin, Marilyn Bittorf, Alan Lee, Lisa Carter, Elaine Goth-Birkigt, Ferne Kvill, Sylvia Chopoidalo, Kathryn Martin, Heather Babiak, Lindsay Peruniak, Susan Stahl, Anne Humphries, Andy Delorme)
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Cathy Butler, A' Café
Kate Murie, Meanook Biological Research Station
Peter Karl and Jean Keefe, Riverhouse
Phyllis Edwards, riverfront tour
John Krawec, Stage Manager
Children of Whispering Hills Primary School

The Entomological Society of Alberta gratefully acknowledges the assistance and participation of all volunteers.

PRESIDENT'S REPORT

I can't remember when I attended my first ESA meeting or exactly how I eventually ended up being part of this wonderful society, but I can trace my love for bugs back to my childhood. I was always fascinated with insects or any other creepy crawling organism. Much to my mother's dismay, I was always trying to bring a new pet into our house. When I started at University of Lethbridge there was no entomology courses offered so I gravitated to the botanical side of biological sciences. I started a career in weed science, but after hand weeding plots I soon realized that being allergic to pollen made this job a living hell. So in 1996 I had a choice; I could travel to California to work on VAM fungi or attend the soil acarology program in Columbus Ohio. I really didn't know much about soil mites but I chose to jump in. So here I am 7 years later and I am the President of the Entomological Society of Alberta.

I would like to congratulate Dr. Robert Holmberg, Science Outreach Athabasca, the University of Athabasca and the entire organizing committee for an exceptional 51st meeting. The Symposium of "In the Public's Eye-Entomology for Everyone" was really brought home at the after dinner talk. I always thought diversity was a good thing and I had never seen such a diverse crowd at an ESA function. I would like to extend the deepest gratitude of the Entomological Society of Alberta to the President of the University of Athabasca, Dr. Dominique Abrioux, for his warm hospitality in hosting the banquet.

It has been a great experience to be involved with this magnificent society. I would like to thank the entire ESA executive for their dedicated work and for making my job relatively easy. I look forward to staying involved and I know the society is in good hands with yet another acarologist, Dr. Heather Proctor as the next President.

Derrick Kanashiro
September 2004

PROGRAM 2003

Thursday, October 2

5:00 - 7:00 p.m.	ESA executive meeting
7:00 - 11:00 p.m.	Registration and reception

Friday, October 3

8:30 a.m.	Registration continues
9:00 a.m.	Welcoming remarks ESA - Derrick Kanashiro, President Local organizing committee - Robert Holmberg, Chair Athabasca University - Dominique Abrioux, President
9:15 - 2:20 p.m.	Symposium “In the Public’s Eye – Entomology for Everyone”
2:20 - 2:50 p.m.	Submitted papers
2:50 - 3:20 p.m.	Poster viewing
3:30 - 4:30 p.m.	Athabasca excursions
5:00 - 7:00 p.m.	Banquet and awards presentations
7:30 - 9:30 p.m.	After dinner talk: “Arthropods - Through Artists’ Eyes” Robert Holmberg and Dave Shorthouse

Saturday, October 4

9:00 - 10:30 a.m.	Submitted papers
10:45 - 12:00 p.m.	ESA Annual general meeting and lunch

ABSTRACTS OF SUBMITTED PAPERS

Bugs In Books: A Perspective on the Portrayal of Bugs in Popular Literature (Or, Do Bugs Need a Decent PR Agent?)

Nora Bryan

Calgary, AB

An informal review of popular books about bugs (arthropods) can be classified as: i) children's books, ii) field guides, iii) introductory texts and general bug science books; iv) gardener's and farmers guides to pests, and v) natural history literature (essays, historical literature, etc). The popular view of bugs varies from positive enthusiasm (mainly in children's books), neutral facts (most field guides and texts) to a treatment restricted to pests (books for gardeners, especially older books). Although we wrote the "Prairie Gardener's Book of Bugs" primarily for gardeners, we incorporated some content and features more commonly found in field guides and natural science books. Original art was commissioned, rather than photos for consistency, eye appeal, cost, and to fit into the short time frame available to complete the project. Experience since the book's release has shown that it is, as hoped, of interest not just to gardeners, but also to amateur naturalists, teachers, and even older children.

Surviving the big chill: sub-lethal temperature effects on fitness of cabbage seedpod weevils

Héctor A. Cárcamo and Carolyn Herle

Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB T1J 4B1

The cabbage seedpod weevil (*Ceutorhynchus obstrictus* Marsham) is a recent pest of canola in southern Alberta. The weevil has a super-cooling point around -7°C and can over-winter underneath leaf litter of tree shelters and other field margins. From 2000-2003 we have attempted to determine, under controlled laboratory conditions, the effects of sub-lethal temperatures on weevil survivorship and fitness. Our preliminary results showed that weevils that were field-collected in October can survive and reproduce well after over-wintering at +5°C from 8 to 18.5 weeks or subjecting them to alternate weeks of +5°C and -5°C during an 8 week period. Continuous exposure at -5°C for 8 weeks clearly reduced weevil survivorship and also fecundity of females although results were highly variable and require further study. It is unlikely that over-wintering factors will prevent weevil establishment in the Parkland eco-region of the Prairies – the primary canola growing region of Canada.

Field studies toward the development of an attract and kill formulation against the Oriental fruit moth, *Grapholita molesta* (Lepidoptera: Tortricidae)

M.L. Evenden[1,2], A. Seiden[1], R. French[1], J.R. McLaughlin[3]

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Small plot field studies were conducted to assess the efficacy of the attract and kill formulation LastCall™OFM against the Oriental fruit moth in Pennsylvania apple orchards. LastCall™OFM that contained 1.6% Oriental fruit moth pheromone and 6% permethrin was dispensed as droplets by hand in replicated small plots following a randomized block design. LastCall™OFM placed at head height in the canopy at the recommended release rate and at half that rate significantly reduced male trap capture in both synthetic and female-baited traps and reduced mating with sentinel females. A second experiment conducted in standard tree plantings using the half rate LastCall™OFM applied at low versus high positions within the tree canopy demonstrated an important effect of droplet position on the number of males captured in female-baited traps. A comparison of the LastCall™OFM formulation with and without the insecticide component showed that male Oriental fruit moth orientation toward female-baited traps and sentinel females was equally disrupted by the formulations regardless of insecticide content. This suggests that the main mechanism by which LastCall™OFM works in small plot trials is by disruption of male moths and not by removal of males due to insecticide poisoning.

A Mitey Good Time With Dead Birds: A WISEST Summer Project [poster]

Stephanie Grundke, Samantha Wojtkiw, and Heather Proctor

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Birds are covered with interesting parasites such as lice and mites. Almost nothing is known about the bird-associated mites of Alberta, even though some of the blood-feeding species may be important in transmission of disease. We collected mites from 11 species of Albertan birds to find out which mite species are associated with which host species, and which birds had the most blood-feeders. Most birds came from the Provincial Museum of Alberta and Fish & Wildlife Forensic Lab. Birds were thawed, put in a container with ethanol, water, and detergent and shaken for 5 min. They were then removed, rinsed, and the water was strained through a 53 um mesh. The strained residue was examined under a microscope. Large mites cleared in lactic acid for 24 h, slide mounted in PVA medium and identified. 12 families of mites were found. All represented new host records for Alberta. 30 host-mite records were new for Canada. 32 of 33 birds had at least 1 sp. of mite. The mitiest bird was a common redpoll with 5 mite spp.; the least mitey were downy woodpeckers. *Proctophyllodes* and *Analges* spp. mites were on the most hosts. Blood-sucking mites were

found on 6 host species. Almost all records were new to Alberta and Canada; clearly, much biodiversity research needs to be done on bird mites! Many birds hosted blood-sucking mites, which may be useful information for wildlife pathologists.

Canola Jungle Ecology

Lloyd Harris

Regina, SK

I will provide a look at what it takes to produce video materials and some of the pitfalls encountered. Following a brief discussion, there will be a presentation of about 24 minute video showing the ecology of some of the insect that live of a canola field's crop canopy. Their life and death struggle for survival is captured in exquisite detail for future generations to see.

Arthropods – Through Artists Eyes

Robert Holmberg[1] and Dave Shorthouse[2]

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[2]*Department of Biological Sciences, CW 405 Biological Sciences Building, University of Alberta, Edmonton, AB T6G 2E9*

Most people think that artistic depictions of insects, arachnids and crustaceans are fairly rare. This talk will show how these animals are commonly represented in many visual arts, ranging from cave paintings, early Egyptian carvings, 18th Century woodcuts, and present day photographs, lithographs, metal sculptures, stained glass, and fabrics. The audience will be treated to a wide variety of artistic renditions of butterflies, beetles, spiders, scorpions, crabs and lobsters depicted in fine art, folk art, commercial art, and the decoration of everyday objects. Artistic works, by various artists and in various media, will be on display. Some edible art forms will be offered for consumption.

Two New Species of *Sabacon* Harvestmen, with Descriptions of the Females of *Sabacon astoriensis* Shear and *Sabacon sheari* Cokendolpher, from Western North America (Arachnida, Opiliones, Sabaconidae) [poster]

Robert G. Holmberg[1] and Donald J. Buckle[2]

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[2]*620 Albert Street, Saskatoon, SK S7N 1G7*

Two new species of Sabaconidae (Ischyropsalidoidea) are described: Sabacon # 1 from central Alberta and British Columbia and Sabacon # 2 from Oregon. Descriptions of the females of *Sabacon astoriensis* Shear 1975, from Oregon, and *Sabacon sheari* Cokendolpher 1984, from Oregon and Idaho, are also given.

The Cabbage Seedpod Weevil, *Ceutorhynchus obstrictus*: Where did it come from?

Richard Laffin[1], Lloyd Dosdall[2], Felix Sperling[3]

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The Cabbage Seedpod Weevil (CSPW), *Ceutorhynchus obstrictus* (Coleoptera: Curculionidae) was first recorded in Alberta in 1995, and since then has caused severe economic losses in canola crops. CSPW damages crops most severely through larval feeding inside developing canola pods. CSPW is thought to occur throughout most of the US, and much of Europe, though until 1995, in Canada was only found in British Columbia. Alberta is not the only recent introduction in North America though; in 2000 CSPW was also recorded in Quebec for the first time. To help determine the origin of the Alberta introduction as well as the Quebec and North American introductions, we sequenced a 475 base pair fragment of the COI gene in mitochondrial DNA in individuals from Alberta, Ontario, Quebec, the US, and Europe. Preliminary results cannot pinpoint a specific origin for the Alberta population, but they do show that the Ontario-Quebec population is different from the rest of North America, and that the rest of the North American population probably came from a northern European country. Further analysis using other molecular techniques such as amplified fragment length polymorphism (AFLPs) will be needed to see finer details of population structure.

Establishing a Tritrophic System in the Greenhouse Industry: A Synergistic Approach to Utilization of Pathogenic Fungi and Predators for Control of Greenhouse Pest Insects [poster]

J. Litwinowich[1], S. Rajput[1], K. Fry[2], and B. A. Keddie[1]

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[2]*Alberta Research Council, Bag 4000, Vegreville, AB T9C 1T4*

Beauveria bassiana (Balsamo) Vuillemin has been shown to be effective at suppressing populations of thrips, aphids, whiteflies and lygus bugs in greenhouse crops. However, it potentially can reduce efficacy of predators and parasitoids used in biological control of greenhouse pests. We have tested the effects of several native Alberta isolates of *B. bassiana* on western flower thrips, *Frankliniella occidentalis* (Pergande). Many isolates tested are more effective than the commercially available *B. bassiana* product, BotaniGard (Emerald Bioagriculture). We are now replicating these tests on *F. occidentalis* while including a biocontrol agent of western flower thrips, *Orius insidiosus*. Isolates, which have

the highest impact on *F. occidentalis*, and the lowest impact on *O. insidiosus* will be scaled up to small-cage/whole plant bioassays. This project will aid in the integration of entomopathogens into IPM's for greenhouse poinsettia growers.

Bluetongue vector biology in Alberta

Tim J. Lysyk and Troy Danyk

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Bluetongue is endemic in the United States, but does not occur in Canada with the exception of a single outbreak in the Okanagan Valley of British Columbia in 1975. Virus was detected in sentinel animals in the southern Okanagan region in 1987 and 1988. Canada's import restrictions requiring testing of animals imported from the US are viewed by trading partners as non-tariff trade barriers and jeopardizes beef trade with the US through potential retaliatory action. Current research at the Lethbridge Research Centre has established that the vector, *Culicoides sonorensis* (Diptera: Ceratopogonidae), is present in southern Alberta, although its abundance at feedlots is limited. Modeling efforts relating virus development, vector oviposition (feeding) and survival to temperature suggest that the potential for Bluetongue transmission to cattle is highest in southern areas with high temperature, and greatly reduced in northern areas with cooler temperatures. Vector survival during the virus extrinsic incubation period appears low and probably limits transmission in the North.

Extending the Cabbage seedpod weevil survey - canola insect surveying in 2003 [poster]

J.Otani[1], L. Dosdall[2], O. Olfert[3], D. Giffen[4]

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Data provided by regular insect surveys provide biological, geographic and economic information aiding the development, application, and efficiency of tools used in sustainable pest management. Newly introduced plus unpredictable fluctuations of traditional insect pests requiring widespread control underlie the need to monitor and generate biological data capable of improving the ability to forecast and manage insect damage in canola production. Within Alberta, the increasing distribution of the cabbage seedpod weevil, *Ceutorhynchus*

obstrictus, has been documented in southern and central Alberta by annual insect surveys since 1997. A province-wide insect survey of canola for *C. obstrictus* was performed in Alberta in 2003. Weevil densities were determined using sweep-net collections performed at full flower in randomly selected commercial fields of canola grown in southern and central Alberta. Fields were swept using 25-180E sweeps, and then the collected insect samples were frozen for later identification and counting. Since the sweep-net collection method employed was compatible for monitoring Lygus populations in canola, the density of these canola insect pests were recorded concurrently in fields located in the Peace River region. The 2003 sweep-net surveying indicated that (i) the weevil was not detected in field in the Peace River region of Alberta, however, (ii) its distribution has increased further north in the province compared to 2002, and (iii) fields sampled in southern Alberta were less infested in 2003 compared to the previous three years when a greater number of canola fields were categorized with 31-90 weevils per 25 sweeps. Lygus populations in 73 fields sampled in the Peace River region were categorized as having 0.1-0.5 Lygus per sweep at full flower suggesting that this insect did pose an economic threat to canola production in 2003.

The distribution of carabid beetle assemblages (Coleoptera: Carabidae) along a mixedwood forest gradient

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Understanding how ecosystems such as boreal forests respond to anthropogenic perturbation is crucial to sustainable resource management as our demand for timber resources increases. Post-fire salvage logging is now a commonly employed practice across Canada, but little is known about the impacts this practice has on the wildlife of the boreal forest. More specifically, the effect of habitat fragmentation and the creation of edge habitat resulting from salvage logging on the distribution, composition, and abundance of native species have been poorly studied. I examined the distribution of carabid beetle assemblages along a disturbance gradient ranging from salvaged (burned and then harvested) to unsalvaged (naturally burned and then left standing) to examine the influence of the edge created by these two disturbances. Three linear transects of pitfall traps were established perpendicular to the edge and extended 40 m into both the salvaged and unsalvaged habitats. Traps were emptied at 4 intervals during a 57-day sampling period in the summer of 2002. In total, I collected 2,494 carabid beetles representing 36 species. Because pitfall trapping is a method reliant on the activity of arthropods in a habitat, and scepticism has arisen over their ability to determine density, I used active search methods in the summer of 2003 to validate the abundance patterns observed. I found a significantly greater abundance of carabids in the salvaged burned forest. The number of beetles decreased along a gradient from the edge to the burned standing forest. Furthermore, there was a strong negative correlation between carabid abundance and % vegetation cover. I also found significantly higher species richness and diversity at the edge relative to both the burned standing forest and the salvaged burned forest. Results of the attempts to use active search methods to determine the accuracy of pitfall trapping for density are also discussed. In order to make more definitive conclusions about the effect of environmental variables on carabid assemblages, further habitat characteristics must be studied, but in addition to providing

insight into the impacts of post-fire salvage logging, my results do suggest that attention be given to the amount of edge habitat created by salvaging in the development of ecologically sensitive guidelines for the management of this forestry practice.

Answering the Public's Questions - The Current State of Extension Entomology

Greg Pohl

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Extension Entomology is defined here as "assisting members of the public with questions about insects and their world". This broad topic covers a diverse range of problems and issues which have brought people to the door of the author. A number of common and not-so-common examples are presented, and the changing role of extension entomology in the current political/economic climate is discussed.

The Ash Leaf Cone Roller, *Caloptilia fraxinella* (Lepidoptera: Gracillariidae), a new pest (?) on the prairies

Greg Pohl[1], Christopher Saunders[2], William B Barr[2], Mark D Wartenbe[2], and Sherri L Fownes[2]

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In 1999, a leaf roller was noticed for the first time in the city of Edmonton, on ornamental green ash (*Fraxinus pennsylvanica* Marsh. var. *subintegerrima* (Vahl) Fern.) and black ash (*F. nigra* Marsh.) (Oleaceae). It has since been found there on Manchurian ash (*F. mandshurica* Rupr.), and white ash (*F. americana* L.). This nearctic species was previously known from the eastern United States and in Canada only from Quebec and Ontario. However, it may be native but undetected within the native ranges of its host trees in southern Saskatchewan and Manitoba.

Adult moths are mottled greyish brown, with a wingspan of approximately 12 mm. Larvae are cream-coloured, reaching approximately 9 mm in length at maturity. Young larvae mine the leaflets of ash trees. Second to third instar larvae then roll up the leaflets, where they continue to feed and eventually pupate. Adult moths emerge in mid-July, and overwinter before laying eggs on new leaflets the following May.

Between 1999 and 2002, the population of this insect has increased dramatically, to the point where almost every leaflet on the majority of ash trees in the city had been affected. However, the larvae appear to do little damage to trees, other than reducing their aesthetic

value. A number of parasitoids have been reared from *C. fraxinella*, some of which are reported on *Caloptilia* for the first time.

The Spoken Word - University Classrooms

Heather Proctor and Danica Belter

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One often encounters the sentiment among entomologists that the teaching of entomology in Canada is in severe decline. The loss of taxonomic training is particularly lamented. But how true are these impressions? Is entomology vanishing from university and college curricula? Are there no courses that teach taxonomy these days? And how does entomology teaching in our province fare when compared to U.S. and Australian states with similar population sizes? We surveyed undergraduate curricula across Canada to determine which institutions teach about insects and whether taxonomy/identification skills were stressed in these courses. Post-secondary institutions in Alberta (N = 26) were thoroughly cencused. Most major Canadian universities offer survey courses for invertebrates, and a slightly small proportion offer general entomology. The Universities of Alberta, Guelph and Manitoba stand out as having high numbers of insect-related courses (9-11 courses). The list of universities that rank highly according to the "Maclean's Top 10" does not correlate well with the "Entomology Top 10". Alberta's entomological offerings compare well with those of post-secondary educational institutions in Colorado, and better than what is available in Queensland.

The genus *Nicrophorus* (Coleoptera: Silphidae): A rapid radiation in the Oligocene? [poster]

Derek Sikes

Division of Zoology, Department of Biological Sciences, University of Calgary, 2500 University Drive NW, Calgary, AB T2N 1N4

Morphological and mtDNA sequence data (COII), whether analyzed in combination or separately, fail to resolve the branching sequence at the base of the genus Nicrophorus. One hypothesis to explain congruently inadequate resolution among independent datasets is that the group has undergone an ancient, rapid radiation. This study provides a preliminary test of this hypothesis. Results support this hypothesis and suggest the genus radiated during the Oligocene concurrently with radiations of their prey, small vertebrates.

Entomology and the public: electronic communication

Felix Sperling

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Electronic communication has given enormous opportunities for connecting entomology and the public. In Alberta we can participate in discussions around the planet, and use Google to find websites anywhere in the world if they have a particular combination of words. However, although the internet has allowed globalization on an unprecedented scale, it has also fostered localization. I will describe several specific modes of electronic communication that relate specifically to entomology in Alberta, with examples from website resources such as the University of Alberta Entomology Virtual Museum (www.entomology.ualberta.ca/), email list serves (AlbertaBugs, Alberta-Crop-Pests, WCanButterflies), and societies that rely almost exclusively on electronic communication (Alberta Lepidopterists' Guild). Each of these modes also demonstrates a dynamic, and very human, tension between globalization and localization.

Museum Exhibits – Dead and Alive

Terry Thormin

Provincial Museum of Alberta, 12845-102 Ave, Edmonton, AB T5N 0M6

The role of live insects to educate the public is discussed, by the curator of the 'Bug Room' at the Provincial Museum of Alberta.

Feeding, Development and Oviposition of Bertha Armyworm, *Mamestra configurata* (Walker) (Lepidoptera: Noctuidae), on Different Host Plant Species

Bryan Ulmer and Lloyd Dosdall

Department of Agricultural, Food and Nutritional Science, Agriculture/Forestry Centre, University of Alberta, Edmonton, AB T6G 2P5

Survival, development, and oviposition of the polyphagous insect, *Mamestra configurata* (Walker) (Lepidoptera: Noctuidae), were compared on different host plant species of the families Brassicaceae (*Brassica rapa* L., *Brassica napus* L., *Brassica juncea* (L.) *Cosson*, *Sinapis alba* L., and *Thlaspi arvense* L.), Compositae (*Cirsium arvense* (L.) Scop.), Leguminosae (*Pisum sativum* L., and *Medicago sativa* L.), Linaceae (*Linum usitatissimum* L.), and Chenopodiaceae (*Chenopodium album* L.). Studies were conducted with both excised leaf tissue and intact plants, and it was determined that larvae developed faster on intact host plant tissue of all species that they did on excised leaf tissue. Complete mortality of first-instar larvae of *M. configurata* occurred on leaves of *T. arvense*. Although 97% of larvae survived to sixth instar on *M. sativa*, complete mortality was observed on this host plant before pupation. On the other host plants studied, survival rates to sixth-instar and pupation were similar. *Chenopodium album* was significantly more preferred than all other species in larval feeding choice experiments while *B. juncea* and *M. sativa* were significantly less preferred than all other species. Larval development was most rapid on *C. album* and was slowest on *B. juncea*. *Chenopodium album* was also significantly more preferred for oviposition than *B. napus*, *B. rapa*, *B. juncea* and *C. arvense* and the fewest eggs were laid on *B. juncea*. The ovipositional and feeding preferences for *C. album* suggest that species of Chenopodiaceae were important hosts of *M. configurata* before vast monocultures of *B. napus* and *B. rapa* were introduced to western North America.

Making the Invisible Visible: The Art of Tarting-Up Mites

Dave Walter

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Whether they like them or not, most people are familiar with insects, but the same cannot be said of mites (Acari). Although we live in a world infused with mites, and some adversely affect our health, crops, and domestic animals, these tiny arthropods are an enigma to the public and even to many entomologists. In this talk, I will show how one acarologist has tried to illuminate the fascinating world of mites through the strange power of acarine art.

A method for rendering digital line drawings of morphological characters

Daryl J. Williams

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There are circumstances which can prevent accurate microscopic or S.E.M. digital photography of arthropod structures for illustration in keys, descriptions, and website applications. A simple and convenient method is presented here, using commercially available software (Adobe Photoshop® and CorelDraw®), whereby accurate line drawings may be created, manipulated, and rendered as digital files. Examples of problem images and samples of refined digital images are shown.

FALL EXECUTIVE MEETING

October 2, 2003
Athabasca, Alberta

Present: Derrick Kanashiro (Pres), Heather Proctor (VP), Hector Carcamo (PP), Greg Pohl (Director ESC), Felix Sperling (Northern Director), Daryl Williams (Sec'y Pro Tem)

1 Commenced meeting at 6:05 p.m.

2 Additions to agenda. Item 3.5 was redundant and has been deleted.

3 Approval of agenda

3.1 MOTION: approve the agenda
M/S Pohl/Proctor CARRIED

4 Reports

4.1 Treasurer's report. A report was sent by Trevor Hindmarch and read by Greg Pohl (see attached). Hector Carcamo reported that the final cost of the 50th anniversary meeting in Lethbridge was not known as some bills have not been remitted or paid. There was some discussion of memberships, and it was decided that library memberships will be taken care of by the President (action item: Derrick Kanashiro).

4.1.1 MOTION: to accept the Treasurer's report as read
M/S Pohl/Carcamo CARRIED

4.2 Regional Directors. The Northern Director reported the retirement of Ernst Mengerson from Olds College and the recent appointment of Maya Evenden as a professor at the U of A. It was noted that with the departure of the Central Director to Victoria a new one will have to be found (action item: Heather Proctor and other exec members).

4.3 Changes to bylaws. Previously proposed changes to bylaws will be tabled for this year. Secondary effects on other bylaws have arisen which must be examined by the committee before further recommendations can be made.

4.4 ESC Director's report. Greg Pohl reported that there is the usual concern in the ESC about memberships, and that ESC members are being asked to distribute a questionnaire to non members about improving visibility/ services. Last year was the start of distribution of Can. Ent. as an e-journal. Starting in 2004 members will no longer get both, but must choose between on-line and paper formats. There was also some discussion about the Joint ESC/Provincial meetings, which will occur in Kelowna in 2003, PEI in 2004, and Alberta in 2005.

4.4.1 MOTION: to accept the ESC director's report
M/S Pohl/Proctor CARRIED

4.5 Site of 2004 ESA meeting. It was generally agreed that an overture would be made to the Sask Ent. Soc. to hold a joint meeting in 2004, perhaps in Lloydminister. Heather Proctor volunteered to organize this meeting and approach the ESS exec. (action item: Heather Proctor).

4.6 Webmaster's report. A report was forwarded by Troy Danyk and read by Derrick Kanashiro (see attached). It was noted that the ESA website was doing well, and generally agreed that special thanks should go to Troy for his efforts. The idea of putting the ESA proceeding on the website, and the issue of publicizing members e-mail addresses was discussed. It was decided that this issue should be brought forward to the general membership at the AGM for discussion.

5 Other business

5.1 Awards. Daryl Williams brought forward submissions for the Carr award and Honourary memberships. These awards will be deliberated by the awards committee during the meetings and presented at the banquet.

6 Adjournment

6.1 MOTION: To adjourn the meeting
M/S Sperling/Kanashiro CARRIED

The meeting was adjourned at 6:40 p.m.

ANNUAL GENERAL MEETING

October 4, 2003
Athabasca, Alberta

1 Additions to the agenda. None.

2 Approval of the agenda

2.1 MOTION: to approve the agenda
M/S Proctor/Sperling CARRIED

3 Approval of the minutes of the previous annual general meeting

3.1 MOTION: to approve the minutes of the previous AGM as circulated in the Proceedings of the ESA.
M/S Ball/ Shemanchuk CARRIED

4 President's address

5 Nominations for office. The offices of Vice President, Treasurer, Central Director and Northern Director must be filled for the coming year.

5.1 Vice President

5.1.1 MOTION: to nominate John Acorn as Vice President of the ESA for 2004
M/S Proctor/Pohl
No other nominations for this position. John Acorn elected to office of Vice President by acclimation.

5.2 Treasurer

5.2.1 MOTION: to nominate Daryl Williams as Treasurer of the ESA for 2004
M/S Pohl/Kanashiro
No other nominations for this position. Daryl Williams elected to office of Treasurer by acclimation.

5.3 Northern Director

5.3.1 MOTION: to nominate Jennifer Otani as Northern Director of the ESA for 2004
M/S Ball/Williams
No other nominations for this position. Jennifer Otani elected to office of Northern Director by acclimation.

5.4 Central Director

5.4.1 MOTION: to nominate Derek Sikes as Central Director of the ESA for 2004
M/S Kanashiro/Proctor
No other nominations for this position. Derek Sikes elected to office of Central Director by acclimation.

6 Appointment of internal auditors for the Treasurer's report. Jeff Battigelli and Dave Walters have volunteered to act as internal auditors for the 2003 Treasurer's report (action item: Trevor Hindmarch to complete the financial statement and deliver it to the auditors).

7 Treasurer's report. The Treasurer's report was read by the President. The society is in excellent financial condition. There was no discussion.

7.1 MOTION: to accept the Treasurer's report as read
M/S Ball/Laffin CARRIED

8 Webmaster's report. The Webmaster's report was read by the President. Some discussion ensued concerning the inclusion of the Proceedings on the ESA website and it was generally agreed that this was a good idea. There was also some discussion about the inclusion of the webmaster as a member of the executive, but it was generally agreed that this would require a change to the bylaws and could not be done by simple consensus at this time. (action item: bylaws committee, that this item be included in items currently being examined)

8.1 MOTION: to include the Proceedings on the ESA website
M/S Carcamo/Sperling CARRIED
(action item: executive members, inform webmaster of decision)

9 Honourary memberships. A letter submitted by members in good standing was read by the President which detailed the long history of Bob Byers in the ESA, in which he was nominated as an honourary member of the society. The general membership were assured that there was room for several more honourary members within the limits of the bylaws and Societies Act.

9.1 MOTION: to accept Bob Byers as an honourary member of the ESA
M/S Carcamo/Otani CARRIED

10 Awards. John Acorn was given the Carr Award for outstanding amateur contribution to Alberta entomology, and Iain Phillips and Richard Laffin were given student travel awards (action item: Treasurer, to pay out awards).

11 Next meeting. The general membership were informed that Heather Proctor has volunteered to organize the 2004 meeting, at a time and place to be determined later, pending the outcome of negotiations with Saskatchewan entomologists for a joint meeting. It was generally agreed that this was a good idea, and that a venue in Lloydminister be pursued (action item: Heather Proctor, to contact ESS exec and confirm).

12 Resolutions committee. The following resolutions were read by Jeff Battigelli, the Chair of the resolutions committee:

Whereas the 51st meeting of the Entomological Society of Alberta has been a resounding success, and *whereas* the success is attributed to:

1. Robert Holmberg for his outstanding and meticulous organization of another memorable meeting.
2. Robert and Catherine Holmberg for their kind hospitality in hosting the wine and cheese social on Thursday evening. Special thanks for arranging the spectacular sunset at Sunset Beach.
3. Science Outreach staff for their capable assistance with projection and photography.
4. Dominique and Lou Ambrioux for their warm hospitality and sharing their home with us for the banquet, and to the chef and staff for preparing a delicious meal.
5. The administration at Athabasca University for the use of their facilities for the meeting.
6. Robert Holmberg and David Shorthouse for an informative and entertaining presentation of 'Insects in Art'.

Be it therefore resolved that our Secretary send letters of thanks to each of these individuals, and *be it further resolved* that they each receive one of the 50th anniversary commemorative mementos.

12.1 MOTION: to accept the resolutions of the resolutions committee as read
M/S Battigeli/Kanashiro CARRIED
(action item: Mike Underschultz)

13 Adjournment

13.1 MOTION: to adjourn the meeting
M/S Carcamo/Laffin CARRIED

The meeting was adjourned at 12:52 p.m.

ANNUAL REPORT OF THE WEBMASTER

The website of the ESA continues to be an attractive tool for people interested in entomology in Alberta. Weekly use of the site increased again relative to the use experienced during the previous calendar year (mean = 36.9 hits/week, SE = 2.4). During the 39-week period starting December 30, 2002 and ending September 28, 2003, the website received 1,899 visits (mean = 48.7 hits/week, SE = 3.9).

The overall appearance of the website remained largely unchanged since the 2002 AGM. Revisions that I made concerned updating, adding to, or reorganizing the information on a number of pages. Some specific improvements include:

- addition to the photo banner of an image of a tiger beetle supplied by John Acorn
- placement under the photo banner of the flags of Alberta and Canada
- deletion of the link entitled "News and Views"
- addition of the following new links:
    - "Publications of the ESA" contains a pdf version of the Insect Collector's Guide
    - "Education and outreach" highlights participation of the ESA in regional science fairs
    - "Entomo-events in Alberta" provides space for the promotion of entomological events
    - "50th anniversary mementos for sale" contains information for people wishing to buy souvenirs from the 50th anniversary meeting of the ESA
    - "In memoriam" contains an obituary of a deceased member of the ESA

There are several minor improvements that I am working on, that include obtaining a biography and photo of John and Bertha Carr to accompany their names on the page that lists people to whom the Carr Award has been given. One major improvement that may be useful would be to add to the website recent editions of the Proceedings (say, from 1990 to present), but I would proceed with this project only if the membership so approves.

The quality of computing service that we receive from the Department of Biological Sciences at the University of Alberta continues to be excellent. I thank the Department again for hosting our website free of charge.

Suggestions for improvement of the website are always welcome, and I encourage members to pass along to me their comments.

Dr. Troy Danyk
ESA Webmaster
September 30, 2003

ANNUAL FINANCIAL REPORT

1. 2002 Financial Statement

OPENING BALANCE (JANUARY 1, 2002)	
Chequing Account	$2,955.40
Term Deposit #2 - 4 Year, 5.2%, Matures August 16, 2004	$5,000.00
Term Deposit #7 - 1 Year, 3.2%, Matures June 25, 2002	$17,195.17
Common Shares	$254.67
Cash on Hand	$19.54
Total Opening Assets	**$25,424.78**

REVENUES	
Membership Dues	$760.00
2002 Meeting Revenues	$322.41
Term Deposit Interest	$550.25
Common Share Dividends	$37.14
Memento Sales	
Total Revenues	**$1,669.80**

EXPENSES	
Bank Fees	
Office Supplies	
Student Travel Grant	-$500.00
Undergraduate Award	-$50.00
50th Anniversary Celebration	
Parchment	-$40.00
Photography	-$40.00
Mementos	-$826.28
Total Expenses	**-$1,456.28**

CLOSING BALANCE (DECEMBER 31, 2002)	
Chequing Account	$20,897.44
Term Deposit #2 - 4 Year, 5.2%, Matures August 16, 2004	$5,000.00
Common Shares	$291.81
Cash on Hand	$0.00
Total Closing Assets	**$26,189.25**

2. Current Bank Balance

As of September 1, 2003, our accounts are as follows:

Account	Amount
Chequing	6,089.65
Term Deposits	
1 Year (due March 25, 2004)	5,000.00
2 Year (due March 25, 2005)	5,000.00
3 Year (due March 25, 2006)	5,000.00
4 Year (due August 16, 2004)	5,000.00
Common Shares	291.81
Total	26,381.46

3. Membership

There are 25 new members (15 regular, 10 student) since the last Annual General Meeting.

Membership Type	Number
Honourary	7
Regular	117
Student	32
Paid Library	4
Unpaid Library	20
Total	180

4. New Treasurer

I will be leaving the office of treasurer at the end of this year. Thank you to everyone who offered advice and support over my term.

Submitted by Trevor Hindmarch

Photographs courtesy of Blaise McMullen, Wayne Brehaut, Robert Holmberg and others

Reception and Field Trip
(1) A four-way conversation at the reception at Baptiste Lake (2) How to attract entomologists – turn on a light (3) Robert Holmberg and Wayne Brehaut (4) Derrick Kanashiro, Catherine Holmberg, Shawn Lindballe, and Terry Thormin (5) Graham Griffiths, Lloyd Dosdall, and Bryan Ulmer (6) Maya Evenden, Gerald Hilchie and Derrick Kanashiro (7) Felix Sperling joins the conversation

The Paper Presentations

(8) The venue for the poster papers. The sign notes the meeting's theme and symposium "In the Public's Eye – Entomology for Everyone" (9) Terry Thormin (10) Lloyd Harris (11) George Ball (12) Greg Pohl (13) Felix Sperling (14) Daryl Williams (15) Nora Bryan (16,17) Dave Walter and his title slide (18) The first morning's audience included the President of Athabasca University, Dominique Abrioux (far left) (19) Heather Proctor opened the symposium.

The After Dinner Presentation, “Arthropods - Through Artists’ Eyes”
(20) The audience, including members of the public, gathers in the Nancy Appleby Theatre (21) David Shorthouse silhouetted by one of his slides (22) Insect art work contributed by students of Whispering Hills Primary School (23) Feeding frenzy at the refreshment break (24) Crab cake with ESA logo (25) Tarantula cup cakes (26) Cutting the spider cake (27) ESA members at the end of the talk

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Oct 2003

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