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The *Entomological Society of Manitoba* was formed in 1945 “to foster the advancement, exchange and dissemination of Entomological knowledge”. This is a professional society that invites any person interested in entomology to become a member by application in writing to the secretary. The society produces a quarterly newsletter, the *Proceedings*, and has a variety of meetings, seminars and social activities. Persons interested in joining the society should consult the website at <http://home.cc.umanitoba.ca/~fieldspg>, or contact:

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PHILIP SHAW BARKER

(1933 – 2009)

ENTOMOLOGICAL CAREER, RESEARCH CONTRIBUTIONS AND BIBLIOGRAPHY

R.J. Lamb, I.L. Wise, and S. Wolfe

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Dr. Philip Barker passed away on May 3, 2009 at the age of seventy-five. Phil was a long time honorary member of the Entomological Society of Manitoba, and active contributor to the society serving as President (1970) and Editor (1971-1972, 1975-1982). For over thirty years he was a Research Scientist working as an entomologist in Winnipeg at the Cereal Research Centre of Agriculture and Agri-Food Canada. Phil's career is remembered in the Newsletter of the Entomological Society of Manitoba, 2009, 36(1): 7-8, and the Bulletin of the Entomological Society of Canada, 2011, 43(1): 38-39.

Phil was born in Mexico to an English family, but received early schooling in Spanish in Chile and Argentina. His first entomological work was at the Rockefeller Institute in Mexico. From there he went to the University of California, Berkeley and completed his M.Sc. thesis on the biology of strawberry whitefly in 1960. His Ph.D. thesis on the basis of DDT-resistance was completed in 1965 at McGill University. Phil then moved to Winnipeg to begin his career in stored product entomology for the Department of Agriculture, publishing the first of many papers on chemical control of mite and insect pests of stored grain in 1966. During most of his career, Phil focussed his research on the biology of mites living on stored grain and the chemical control of mites and insect pests of stored grain, particularly control by chemical fumigants. He produced over 50 publications on these topics.

Phil may have saved his best work for last, at least as far as those of us who work on field crop entomology are concerned. Forever inquisitive, Phil developed a special interest in the wheat midge just before his retirement. Initially he charted the first serious outbreak of the pest in Manitoba, and then began investigating the distribution of larvae on wheat spikes. He obtained samples of wheat spikes from breeding plots to investigate the ups and downs in levels of infestation at the research farm at Glenlea. Phil was capable of spending hours on painstaking dissections, listening all the while to German opera or polka music. He routinely received small sheaves of wheat from Ron McKenzie, a wheat breeder at the centre. As a result of a lifetime of looking at wheat seeds, Phil soon noticed a curious tendency in some winter wheat lines to produce short, misshapen seeds that he called 'tubbies'. Even more interesting, wheat

midge larvae were absent from these wheat lines. Phil had discovered a previously unknown source of resistance to wheat midge in a few lines of wheat. His discovery led to the characterization of the resistance and ultimately the registration of spring wheat cultivars with resistance to the wheat midge. These resistant wheat cultivars will result in the saving of tens of millions of dollars annually for wheat growers in western Canada, and other parts of the world. From the time of his retirement until near the end of his life, Phil returned to the laboratory almost daily, spending his time dissecting 1,000's of wheat spikes a year, screening breeding lines for resistance.

But to those of us who worked with Phil, he was much more than his scientific achievements. He was a study of contrasts and contradictions. He was an Englishman born in Mexico who spoke impeccable Spanish, an avid rugby player as a youth who, because of his size, played American football during his early university days at Berkeley until it interfered in his studies. He was an early advocate of the application of statistical methods in entomology, but disdained computers and preferred his treasured programmable calculator. A lover of warm weather, he preferred to live in one of the coldest cities in Canada, and could not fathom not wearing long underwear for at least six months of the year. An amazing linguist, Phil decided to learn German during his retirement so he could better enjoy Oktoberfest. His knowledge of German went along with his three other languages English, Spanish and French. For Phil, there was no better way to learn the essence of a language than through its musical heritage. Soon after his granddaughter Cassandra was born, Phil took on the challenge of learning Chinese so he could better communicate with the parents of his daughter-in-law. His knowledge of languages was also put to good entomological use; he happily translated German and French research papers as a favour to his colleagues whenever asked.

Phil relished the chance to point out the inanities of the world through the medium of comics. He especially liked Calvin and Hobbes. Then later came his "Laws of Mistakes" and "Thoughts about Fools", or the timeless words of Rudyard Kipling. Codes or more specifically the history of cryptography became a later passion. He often ordered utterly obscure books on old but not forgotten code methodology, books that no doubt in the past would warrant a visit from the cloak-and-dagger types. He loved to share his current interests with his work mates. We all still miss his booming cheerful voice as he greeted people each morning as he proceeded to his corner of the lab, his microscope, and the boxes of wheat spikes.

Phil's death resulted from complications from intestinal and liver cancer that he lived with without complaint for nearly two years. He is survived by his wife Joan Barker, sons Douglas (Bei) and Michael (Corinne), daughter Suzanne (David), and granddaughter Cassandra.

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ROBERT E. ROUGHLEY (1950–2009)

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A Tribute

The entomological community has lost one of its classic figures. Rob Roughley passed away suddenly at his home on 9 November, 2009 at the age of 59.

Rob was an authority on water beetles, especially the Dytiscidae, and spent much of his professional life at the University of Manitoba, Canada. He completed his B.Sc. (Agr.) in Entomology in the Department of Environmental Biology at the University of Guelph in 1974. He was part of the cadre of young entomologists, inspired by Dave Pengelly, who emerged from Guelph at about that time. While an undergraduate student, Rob spent two summers at the Agriculture Canada Research Station in Harrow, Ontario, where he worked on insect pathology with Bob Jaques, and with Bill Elliott on aphids on vegetable crops. It was perhaps during the time he spent with Bill Elliott, and the following summer on Dave Pengelly's field crew to replenish the ravaged Natural History of Insects collection, that Rob became fascinated by taxonomy and systematics. Rob stayed on at Guelph to revise the genus *Hydaticus* (Dytiscidae) for his M.Sc. (1976), which involved spending some of his time working at the Canadian National Collection in Ottawa. Rob went to the University of Alberta for his Ph.D. under the supervision of George Ball; his thesis research was a revision of the genus *Dytiscus*, using characters from adults and immature stages. In 1982, even before he defended his Ph.D. thesis, he accepted a faculty position in the Department of Entomology at the University of Manitoba. For the next year, he worked day and night to complete his Ph.D. thesis, which he defended in 1983.

Water beetles, especially Dytiscidae, formed the focus for Rob's research. He was a world authority in dytiscids and related groups, and his expertise was much in demand. His taxonomic advice was sought by curators, amateurs and consultants needing specimen identification, and he often visited museums and provided curatorial assistance in the areas he knew best. He worked particularly on the dytiscids of North America and the water beetle fauna of Middle America, and had a great deal of involvement with the Instituto Nacional de Biodiversidad (INBio), in Costa Rica. At INBio, he taught water beetle collecting techniques to parataxonomists, and was team leader for the aquatic Coleoptera group. Rob's combined effort with David S.

White on the chapter on aquatic Coleoptera in the fourth edition of *An Introduction to the Aquatic Insects of North America* (2008) is a lasting contribution to his discipline. Rob was involved with the scientific community in many areas of endeavour, particularly those dealing with conservation; he was an active participant in the Biological Survey of Canada, the Nature Conservancy of Canada, the Committee on the Status of Endangered Wildlife in Canada, CANPOLIN, and the International Union for the Conservation of Nature.

Rob was never shy about tackling less familiar areas of research, and he assumed supervision of graduate students in many areas beyond his own field of systematics. He supervised students who examined the integrated control of purple loosestrife, and others who worked on the biodiversity of spiders, carabids, bees, and flies, especially those associated with prairie grassland and subarctic habitats in Manitoba. He encouraged his students to work hard and gain a sense of pride in their own accomplishments as they saw their own expertise grow. His encouragement extended to undergraduate students as well. Rob had an unorthodox lecture style. He was always very relaxed, but you never knew what approach he might take. He sometimes delivered lectures in a classic sense, but he also explored an open-ended style, where students were expected to contribute substantially to the learning process. Rob enjoyed a high level of interaction in his lectures, and he delivered his lecture material from many different angles. In recognition of the success of this approach, he received a Students' Teacher Recognition Award at the University of Manitoba in 1995. For many years, he and Peter Kevan taught a course in boreal and arctic entomology, in Churchill, Manitoba, as part of the offerings of the University of the Arctic.

One of Rob's great loves was collecting insects, and he traveled the world in the pursuit of water beetles. His extended field trips with students or colleagues were legendary: they would start out from Winnipeg heading west, hit the coast, travel south, turn east, keep going until they hit the sea, and then wend their way back. Several visiting postdocs received their initiation to North America on just such trips. Rob traveled extensively in Europe, Asia, Australia, and Costa Rica, gaining taxonomic insights from the beetles he collected and the habitats he visited. It was perhaps these insights that were so valuable to his colleagues and for which his advice was so often sought.

Rob also carried a large portion of the load for extension calls in the Department of Entomology. These calls came on the telephone, through the mail, via e-mail or where an unannounced visitor would appear at the door with concerns or curiosity about some entomological dilemma. He met thousands of people this way, sharing his experience and enthusiasm with each and every one. At one time he was a popular voice on local radio for ask-the-bug-doctor programmes. It was always a treat to tune in because you never knew what people would call in to ask, and you could never guess how Rob was going to respond. He served the agricultural extension service through his contacts with Manitoba Agriculture, Food and Rural Initiatives to provide identification of known and new pest problems. In 2007, his record of dealing with over 12,000 extension calls during his career was recognized by his receipt of a University of Manitoba Annual Outreach Award.

Rob was an untiring supporter of collections and collection management in Canada, and when he assumed the curatorship of the entomological museum upon arrival in

Winnipeg, the collection immediately began to expand. In 1983, the museum was given the title, the J.B. Wallis Museum of Entomology, to commemorate the contributions and early development of the collection by J.B. Wallis. Rob presided over the small naming ceremony, and was clearly in his glory in dedicating the museum to the memory of a former water beetle specialist. From that time, the collection has grown from a modest 50,000 - 60,000 specimens to where it stands today, at an estimated 2,000,000 specimens. Over the years, as the collection grew and several collections in Winnipeg were orphaned and donated to the JBWM, space available to work efficiently shrank. In 2000, Rob was integral in obtaining Canadian Foundation for Innovation funding to expand the museum facilities and to implement one of the first bar-coded databases for entomological museums in Canada. The museum now has enough space to accommodate many years' contributions of specimens, and, since May 2011, has had a new official name: the J.B. Wallis/R.E. Roughley Museum of Entomology, a fitting tribute to two water beetle specialists.

Rob had a big voice, a big personality and a big heart. There are few entomologists more generous with their time and expertise. He was endlessly supportive of students, and always provided the encouragement and enthusiasm for all things entomological that seemed to inspire so many of them. If you needed assistance, a reference, some specimens, an opinion, or an update on scores in the NHL games the night before, Rob was always there. He reveled in seeing some strange and unusual insect; he was always excited by whatever you had to share with him, even if it wasn't a beetle.

Rob has been an important component of the entomological community in Canada and he will be sorely missed. Rob is survived by his wife, Pearl, children Amy (Mike), grandsons Nicholas and Maxwell, Kate, Keegan, and stepsons Ryan and Chad.

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Parasitism of the biological control agent *Hyles euphorbiae* (Lepidoptera: Sphingidae) by *Winthemia datanae* (Diptera: Tachinidae): a new host record

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Abstract — Leafy spurge, *Euphorbia esula* L. (Euphorbiaceae), is an invasive perennial weed for which a number of biological control agents have been released in Canada. In surveys of biological control agents in patches of *E. esula* in Spruce Woods Provincial Park, Manitoba, tachinid eggs were detected on final instar larvae of the biological control agent, *Hyles euphorbiae* (L.) (Lepidoptera: Sphingidae). The tachinids were reared and identified as the Nearctic species, *Winthemia datanae* (Townsend) (Diptera: Tachinidae). This is a new host record for *W. datanae*. Mechanisms by which the new host association arose are discussed.

Euphorbia esula L. (Euphorbiaceae) is an invasive weed that was introduced into North America approximately 200 years ago (Selleck *et al.* 1962). It has now been reported in the Yukon, in all Canadian provinces except Newfoundland and Labrador, and in 37 of the 49 continental U.S. states including all western, mid-western and north-eastern states (USDA 2009). The north-central states and prairie provinces are severely infested (Bourchier *et al.* 2002). In Manitoba, the estimated area infested by *E. esula* has risen from 3250 ha in 1953 (Craig 1953), to about 285,000 ha in 2008 (Rural Development Institute 2009). Through its competitive advantages of early emergence, persistent root growth, vegetative root budding (Messersmith *et al.* 1985), and avoidance by many grazing animals (Lym and Kirby 1987), *E. esula* spreads rapidly (Selleck *et al.* 1962), threatens native flora (Belcher and Wilson 1989) and fauna (Schieman *et al.* 2003). Also, *E. esula* has significant economic impacts, particularly through reduction of pasture value (Leitch *et al.* 1996). Herbicidal control of *E. esula* is impractical on pasturelands and ecological preserves (Harris and Alex 1971). As it is an alien species and there are no native North American insects that utilize it as a food source (Harris *et al.* 1985), *E. esula* is a good candidate for classical biological control. To this end, 15 Eurasian insect species have been released in Canada against *E. esula* (Harris 1984; Bourchier *et al.* 2002). The first of these species was

Hyles euphorbiae (L.) (Lepidoptera: Sphingidae), of which 44,000 were released across Canada from 1965 to 1985, including more than 2200 in Manitoba (Harris 1984; Bouchier *et al.* 2006).

The native range of *H. euphorbiae* includes central Asia, northern India, and south and central Europe (Harris 1984). In Canada and in the northern part of its native range, *H. euphorbiae* is univoltine (Harris and Alex 1971); more southerly populations are bivoltine or trivoltine (Harris 1984; Rees and Fay 1989). Adult moths are first seen in late spring or early summer, and females lay eggs at the base of *E. esula* plants (Harris and Alex 1971). The larvae emerge, progress through five instars (Rees and Fay 1989), feeding on foliage of a narrow range of *Euphorbia* species (Harris 1984). *Hyles euphorbiae* has established in several states and provinces but does not provide adequate control of *E. esula* (Bouchier *et al.* 2002; Hansen 2010).

In 2009, a survey of herbivorous insects in patches of *E. esula* was carried out in the Big Prairie (centred at approximately 49°40'N 99°02'W) of Spruce Woods Provincial Park, Manitoba. Except for *E. esula*, vegetation in this location is native mixed-grass prairie interspersed with aspen-oak and spruce forest stands (Bird 1930). During the survey, *H. euphorbiae* larvae with visible tachinid eggs on them were collected and brought back to the laboratory. The larvae were reared in 948 ml plastic containers (Bug Tub, Inc.[®]) with a screened hole in the lid. Cut shoots of *E. esula*, with the base wrapped in moist paper towel, were provided as food. A crumpled paper towel at the bottom of the container offered a pupation site. Newly pupated *H. euphorbiae* were placed in 1 cm of damp sand in a rectangular plastic container, 20 x 9.5 x 7 cm, and examined daily for emergence. Tachinid larvae that emerged from *H. euphorbiae* pupae were individually placed in 15 ml plastic vials with about 4 ml of moistened sand. Vials were checked daily for emergence of tachinid adults. All rearing was in an incubator at 30° C and 16:8 h L:D. A representative sample of adults was pinned and sent for identification and the remaining specimens were deposited in the J.B. Wallis Museum of Entomology at the University of Manitoba.

One *H. euphorbiae* larva bearing tachinid eggs was collected 8 August 2009 at 49°41.006' N 99°02.418' W. It pupated on 14 August and 23 tachinid larvae emerged from the pupal case on 21 August. The tachinid larvae formed puparia on 29 August and emergence of adult flies began on 8 September; a total of five adult tachinids emerged. A second *H. euphorbiae* larva with tachinid eggs was collected on 22 August at 49°40.264' N 99°02.128' W and pupated on 30 August. On 8 September, 29 tachinid larvae emerged from the pupal case and formed puparia that same day. A total of 20 adult tachinids emerged from these puparia between 11 and 16 September. The tachinids were identified as *Winthemia datanae* (Townsend) (Diptera: Tachinidae). This rearing of *W. datanae* from *H. euphorbiae* is a new host record.

Because of the survey methodology, the level of parasitism by *W. datanae* on *H. euphorbiae* in Spruce Woods Provincial Park could not be estimated. However, we expect the addition of *W. datanae* as a mortality factor to contribute to the low population growth rates of *H. euphorbiae* that are a factor in its poor efficacy as a biological control agent. The failure of introduced *H. euphorbiae* populations to grow rapidly has been attributed to predation, parasitism and disease (Harris and Alex 1981; Batra 1983; Forewood and McCarty 1980).

A great concern in classical biological control is the threat of introducing parasitoids with the introductions of the biological control agent (Howarth 1991). This possibility could not account for parasitism of *H. euphorbiae* by *W. datanae*: *H. euphorbiae* is native to Eurasia (Harris 1984), whereas Peigler's (1994) world catalogue records the distribution of *W. datanae* as eastern North America. In fact, the North American distribution of *W. datanae* is transcontinental in Canada and the United States (O'Hara and Wood 2004), and the species has been previously reported from Manitoba (Henne 2004). The new host record is almost certainly the result of a host range expansion, in which the introduced biological control agent is utilized by an indigenous parasitoid.

Winthemia datanae already has a broad host range, consisting of at least 29 species in eight families of Lepidoptera (Arnaud 1978; Henne 2004; Peigler 1994). Of these, species that are relatively common in Manitoba include *Malacasoma disstria* Hübner (Lasiocampidae) (Prentice 1963), *Hemerocampa leucostigma* (J.E. Smith) (Lymantriidae) (Prentice 1962), *Pseudaletia unipuncta* (Haworth) (Noctuidae) (Ayre 1985), *Datanae ministrata* (Drury) (Notodontidae) (Prentice 1962), *Platysamia cecropia* (L.) (Saturniidae) (McGugan 1958) and *Anisota virginiensis* (Citheroniidae) (McGugan 1958; Henne 2004). All of these hosts are polyphagous and, with the exception of *P. unipuncta* (Tietz 1972), the majority of their host plants are deciduous trees or shrubs (McGugan 1958; Prentice 1962, 1963). Many of the host plants are characteristic of aspen parkland (Bird 1930) and occur near our collection sites. Tachinid host selection is strongly influenced by ecological characteristics of the host, rather than by physiological constraints or phylogenetic relationships (Stireman and Singer 2003). Searching females of another generalist tachinid (*Exorista mella* (Walker)) are thought to use general visual or olfactory cues to select appropriate macrohabitats. Within these macrohabitats they initiate restricted area searching using cues, including host motion, that are not initially host-species specific, but may become so with female experience (Stireman 2002). It seems likely that the use of *H. euphorbiae* as a host is a consequence of overlap of its habitat with that selected at the macrohabitat level by *W. datanae* for restricted area search. The timing of this overlap is critical: *W. datanae* oviposits on larvae in their last instar before pupation, thus avoiding the shedding of eggs when the host moults (Marsh 1937; Hitchcock 1961). Therefore, the level of parasitism of *H. euphorbiae* is likely to depend upon the proximity to, and synchronization with, alternative hosts of *W. datanae*.

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66th Annual Meeting

Entomological Society of Manitoba

Friday October 22, 2010

Freshwater Institute

501 University Crescent

and

Saturday October 23, 2010

Room 219 Animal Science/Entomology Building

University of Manitoba

ABSTRACTS

KEYNOTE ADDRESS

THE USE OF PHEROMONES FOR DETECTION, PREDICTION AND MULTISPECIES MONITORING OF LEPIDOPTEROUS PESTS.

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The reliance of moths on sex pheromones for mate finding makes their chemical communication system an ideal target for integrated pest management. We have developed sex pheromone-based monitoring systems for two agriculturally important moth species, *Plutella xylostella* (Lepidoptera: Plutellidae) and the newly invasive *Coleophora deauratella* (Lepidoptera: Coleophoridae). Pheromone-baited traps work best to detect populations of *P. xylostella* in canola but can also predict infestations of immatures late in the season. Variables that affect the attractiveness of pheromone-baited traps to male *P. xylostella* include pheromone release rate, lure substrate, lure age, trap height and the addition of host volatiles to the lure. The number of male *C. deauratella* captured in pheromone-baited traps positioned in red clover fields predicts populations of larvae in the next generation and may be useful in the prediction of seed damage. Male *C. deauratella* capture in pheromone traps is modulated by ratios of the two identified pheromone components, pheromone release rate and trap type. A sex pheromone-based monitoring tool that can target more than one pest species simultaneously would be of great practical and economic benefit. We demonstrated the feasibility of a combined pheromone-based approach to monitor populations of two sympatric defoliators of trembling aspen, *Malacosoma disstria* (Lepidoptera: Lasiocampidae) and *Choristoneura confictana* (Lepidoptera: Tortricidae) simultaneously. The combined lure was equally attractive to male moths as lures baited with their respective pheromones alone and can be developed to monitor population levels and assess moth quality. Factors impacting the development of successful pheromone-based monitoring systems will be discussed.

SUBMITTED PAPERS**EVOLUTION OF PARASITIC STRATEGY AND HOST USAGE IN BRACONIDAE (HYMENOPTERA: ICHNEUMONOIDEA).**

Barb Sharanowski, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

Phylogenetic relationships across subfamilies within Braconidae were examined using 4kb of sequence data for 139 taxa. Maximum likelihood and Bayesian inference of the concatenated dataset recovered a robust phylogeny, particularly for early divergences within the family. There was strong evidence supporting two main lineages within the family: one entirely endoparasitic (non-cyclostomes) and the other primarily ectoparasitic (cyclostomes). Ancestral state reconstructions were performed to test the pervasive assumption that the ancestral condition in Braconidae is ectoparasitism on xylophagous Coleoptera. Results indicated an endoparasitic ancestor for the family, with an early transition to ectoparasitism for the cyclostome lineage. Evidence for the ancestral host was equivocal between Lepidoptera and Coleoptera due to a lack of biological information for some key lineages within Braconidae, suggesting a strong need for further data collection on host usage.

PRELIMINARY RESULTS ON THE VECTOR COMPETENCE OF MOSQUITOES FROM CANADA TO TRANSMIT RIFT VALLEY FEVER VIRUS.

L.R. Lindsay, M. Iranpour, and J. Thomson. Public Health Agency of Canada, National Microbiology Laboratory, Zoonotic Diseases and Special Pathogens, Winnipeg, Manitoba, Canada R3E 3R2 and Department of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

The competence of mosquitoes to acquire and transmit Rift Valley Fever Virus (RVFV) was determined by tracking the patterns of virus dissemination in mosquitoes that were allowed to feed upon hamsters syringe-inoculated with RVFV. In 2010, small numbers of field-collected *Ae. communis*, *Ae. dorsalis*, *Ae. fitchii*, *Ae. implicatus*, *Ae. sticticus*, *Ae. stimulans*, *Ae. vexans*, *Culex tarsalis*, *Culiseta inornata*, and *Coquillettidia perturbans* were fed upon RVFV-infected hamsters and assayed for virus infection two weeks later. RVFV produced disseminated infections in 69%, 23%, 20%, and 0% of the *Cx. tarsalis*, *Ae. sticticus*, *Cq. perturbans*, and *Ae. vexans* that were exposed to infected hamsters. In contrast, in the other mosquito species evaluated, RVFV infections were undetectable after the incubation period or virus was only detected in the mid-gut. In either scenario, failure of some species to produce a disseminated infection likely means these species have a very limited role as potential vectors of RVFV should this virus be introduced into Canada.

NOTES ON SOME NATURAL ENEMIES OF MOSQUITOES IN MANITOBA.

M. Iranpour^{1,2}, L.R. Lindsay^{1,2}, J. Becnel³, and C. Babel². ¹Public Health Agency of Canada, National Microbiology Laboratory, Zoonotic Diseases and Special Pathogens, Winnipeg, MB, Canada R3E 3R2; ²Department of Entomology, University of Mani-

toba, Winnipeg, Manitoba; ³United States Department of Agriculture, Agricultural Research Service, Mosquito and Fly Research Unit, Gainesville, Florida, USA 32608.

During the summer of 2010, a variety of larval habitats in and around the city of Winnipeg were visited to collect predators, parasites and pathogens of mosquitoes. More than 10,000 mosquito larvae were collected and reared to the adult stage under laboratory conditions. Adult mosquitoes were also collected from several locations in and around the city of Winnipeg using CDC light traps and captured adults were examined for pathogens or parasites. The mosquito predator, *Mochlonyx velutinus* (Diptera: Chaoboridae) was collected from larval habitats in the Sandilands and at Seven Sisters, Manitoba in May. Focal infections of larval mosquitoes with pathogens were observed in Winnipeg. For example, at one locality, 2% of mosquito larvae were infected with microsporidia, while at another locality, about 5% of larvae were infected with cytopovirus. Two individual larvae collected in a larval habitat northwest of Winnipeg were infected with an iridescent virus. *Vorticella* was also found in about 10% of collected larvae within the city of Winnipeg. In contrast, few pathogens or parasites were observed in adult mosquitoes. A large proportion of adult *Coquillettidia perturbans* collected within Winnipeg were infested with the water mite, *Arrenurus danbyensis* (Acari: Arrenuridae). The possible impact of predators, parasites and pathogens on mosquitoes in Manitoba will be discussed along with the outcomes of this small survey.

ADAPTATION OF THE HARRIS POPULATION MODEL OF HONEY BEE COLONY DEVELOPMENT TO A SOFTWARE SPREADSHEET AND ITS APPLICATION FOR DATA PROCESSING.

J. Lloyd Harris¹ and Philip R. Harris. Department of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2. ¹Present address: 2839 Lakeview Avenue, Regina, Saskatchewan S4S 1G6.

A step-by-step example was presented to assist with the conversion of the Harris Honey Bee Population Model (Harris 1985) for use in a software spreadsheet. The spreadsheet provided a simple framework for estimating a colony's demography and magnitude under experimental or theoretical situations. The model's population estimates were determined with: 1) colony-specific worker mortality/survival rates and compared with population estimates determined with worker mortality/survival estimates that had been pooled by 2) month of emergence, 3) season (April – August) of emergence or 4) multiple year seasonal emergence, which underestimated the average colony populations by 3.3, 2.4, 1.6 and 6.3 per cent. Accuracy of population estimates was affected by the proficiency of the persons measuring the sealed brood and collecting the marked bees census data. Population estimates were also derived by combining sealed brood estimates from one study with the survival data from life tables from a second study. These estimates compared favourably with estimates from studies where populations were based on 1) a graded series of series of photographs, 2) frames of bees and 3) weight-based population estimates. In addition, the model was used to solve for worker longevity in an experiment that contained brood and colony population estimates. When a theoretical application of the model was run with data from Manitoba, disease- and mite-free colonies must maintain daily adult emergence rates

of at least 27 to 29 adult bees per day per 1,000 adult bees in the colony to maintain a stable population. Higher adult daily emergence rates were required for a colony's population to increase while lower daily emergence rates indicated that the colony's population was about to decline.

DEVELOPMENT OF HONEY BEE COLONIES IN THE NORTHERN GREAT PLAINS OF NORTH AMERICA. II. EFFECT OF REQUEENING ON FALL POPULATIONS. J. Lloyd Harris¹, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2. ¹Present address: 2839 Lakeview Avenue, Regina, Saskatchewan S4S 1G6.

The effect of requeening honey bee colonies the last week of July with newly mated queens, mature queen cells, or supersedure cells on sealed brood, adult worker bee populations and colony population demographics was assessed at twelve day intervals until early December. Requeening altered brood rearing patterns, adult worker bee populations and colony demographics. Requeened colonies contained populations with higher percentages of young bees. By early December, colony population sizes converged among treatments and were not statistically different.

EVALUATION OF INSECTICIDES FOR CONTROLLING OVER-WINTERING NATIVE ELM BARK BEETLE, *HYLURGOPINUS RUFIPES*, IN MANITOBA.

S. Oghiakhe, and N.J. Holliday, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

Insecticide applications to the base of healthy elm trees are used to control overwintering *Hylurgopinus rufipes*, the vector of Dutch elm disease, in Manitoba. Chlorpyrifos is registered and effective but may soon become unavailable and alternatives are needed. Basal applications of candidate insecticides were made, and residual efficacy assessed with a bark disk bioassay. Chlorpyrifos and bifenthrin provided 100% control for two years. Permethrin and carbaryl rapidly became ineffective.

BIONOMICS OF THE BANDED ELM BARK BEETLE, *SCOLYTUS SCHEVYREWI*, IN SASKATCHEWAN AND MANITOBA.

J. Veilleux, and N.J. Holliday, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

The arrival of *Scolytus schevyrewi* in the Canadian Prairies poses challenges for Dutch elm disease management: its hosts include American elm and it can carry spores of *Ophiostoma novo-ulmi*. In 2009, *S. schevyrewi* adults were collected on baited sticky traps between June and the end of September, with peak catches in early September. In Siberian elm trap logs, eggs successfully developed into adults and overwintering larvae survived prairie winter conditions and emerged as adults in the spring.

EFFECTS OF FOREST MANAGEMENT ON THE DIVERSITY OF MOTH (LEPIDOPTERA) ASSEMBLAGES IN JACK PINE (*PINUS BANKSIANA*) FORESTS IN SOUTHEASTERN MANITOBA.

C.R. Grant, and A.R. Westwood, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

A significant amount of Manitoba's provincial forests are commercially managed and harvested for timber products. It is unclear if moth diversity is different in planted and managed forests in comparison to naturally regenerated forests. Baseline species lists of harvested and naturally disturbed chronosequence forest stands are required in order to determine if differences in disturbance types are a result of inherent variation or management actions. We examined the differences in alpha and beta macro-moth species diversity between planted and fire-regenerated stands of jack pine (*Pinus banksiana* Lamb) forest in southeastern Manitoba. We assessed the differences in the moth communities linking the presence of moth species to larval host plants by age class and disturbance type. The overall goal of the study is to establish baseline species lists indicative of disturbance types and to identify species unique to older age class stands based on the larval host-plant associations. Initial findings may imply that future management practices incorporate mixed age stands to conserve the natural complement of moth species inhabiting jack pine stands.

VOLATILE ORGANIC COMPOUNDS RELEASED BY STORED GRAIN INSECTS IN BARLEY.

T. Senthilkumar¹, V. Chelladurai¹, D.S. Jayas¹, N.D.G. White², M.S. Freund³, D.J. Thomson⁴, and C. Shafai⁴. ¹Department of Biosystems Engineering, University of Manitoba, Winnipeg, Manitoba, Canada R3T 5V6; ²Agriculture and Agri-food Canada, Cereal Research Centre, Winnipeg, Manitoba, Canada R3T 2M9; ³Department of Chemistry, University of Manitoba, Winnipeg, R3T 2N2; ⁴Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Manitoba, Canada R3T 5V6.

Identification of the volatile organic compounds released by insects can be used to detect insect infestation in stored grains. Red flour beetle, *Tribolium castaneum* (Herbst) and rusty grain beetle, *Cryptolestes ferrugineus* (Stephens) are the major insect pests of the Canadian grain handling industry. An attempt was made to identify the volatile organic compounds released by *T. castaneum* and *C. ferrugineus* by headspace analysis. The volatiles in the headspace of vials with barley and insects were analyzed using a GC-MS coupled with an automatic headspace sampler. Feasibility of using automatic headspace sampler for headspace analysis was positive. The sampler can do sample conditioning, absorption, trap cleaning and desorption of the volatiles into the GC-MS and speed up the process. The samples extracted at 20 strokes with 1000 µL per stroke, and desorbed at 250°C gave a clear peak of compounds. In initial results, volatiles produced by adult *T. castaneum* were, methyl-1, 4-benzoquinone, ethyl-1, 4-benzoquinone and 1-tridecene. Extreme high and low temperatures leading to death produced very high amounts of volatiles compared to insects kept at 35°C. Volatiles released by *C. ferrugineus* were too low to detect.

Further studies are in progress to detect the volatile compounds released by different life stages of insects in the stored barley.

FUMIGATION TOXICITY OF ESSENTIAL OILS FROM THREE THAI PLANTS AGAINST TWO STORED-PRODUCT INSECTS AND A PARASITOID.

Duangsamorn Suthisit^{1, 2}, Paul Fields¹, and Angsumarn Chandrapatya². ¹Cereal Research Centre, Agriculture and Agri-Food Canada, 195 Dafeo Road, Winnipeg, Manitoba, Canada R3T 2M9; ²Department of Entomology, Faculty of Agriculture, Kasetsart University, Bangkok, 10900, Thailand.

Fumigation toxicity of essential oils from three rhizomes, *Alpinia conchigera*, *Zingiber zerumbet*, *Curcuma* sp. and their constituents, camphene, camphor, 1-8 cineole, -hemulene, isoborneol, -pinene, -pinene and terpinen-4-ol were tested against eggs, larvae, pupae and adults of *Sitophilus zeamais* and *Tribolium castaneum*. Essential oils from *A. conchigera* were toxic, while oils from the other plants were not. Eggs and pupae were the most resistant stages. Terpinen-4-ol and 1-8 cineole were most toxic of the pure compounds. The parasitoid, *Anisopteromalus calandrae*, was more sensitive than its host.

HEAT TREATMENT TO CONTROL VARIOUS STAGES OF COWPEA BEETLE, *CALLOSOBRUCHUS MACULATUS* (FAB.) (COLEOPTERA: BRUCHIDAE) IN CHICKPEA.

Loganathan Manickam^{1,2}, Digvir S. Jayas², Paul G. Fields³, Noel D. G. White³, and K. Alagusundaram⁴. ¹Visiting Scientist, ⁴Indian Institute of Crop Processing Technology, Thanjavur, Tamil Nadu, India; ²Department of Biosystems Engineering, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2; ³Cereal Research Centre, Agriculture and Agri-Food Canada, Winnipeg, Manitoba, Canada R3T 2M9.

Chickpea (*Cicer arietinum* L.: Leguminosae) is grown all over the world and used for preparation of various foods. The world production of chickpea is 8.8 million tonnes, of which India produces 6.3 million tonnes. Canada produces 22.5 thousand tonnes of chickpea from an area of 1.7 million ha. The whole grain of chickpea is damaged by the cowpea seed beetle, *Callosobruchus maculatus* (Fabricius) (Coleoptera; Bruchidae), which is the most important storage pest of pulses. The management of this insect in storage using chemicals leads to insecticide residues in grains and insecticide resistance development in insects. The physical method is one of the means of insect control. Experiments were conducted to determine the most tolerant stage of development and the required temperature and duration of exposure to kill the various stages of *C. maculatus*. Glass vials covered with perforated lids with 600- μ m wire mesh contained 20 seeds with 20 adult *C. maculatus*. Similarly, twenty seeds with eggs / larvae / pupae of *C. maculatus* were transferred to separate glass vials. Insects were exposed to 42°C for various periods in an oven and vials were removed at 12-h intervals and kept in a chamber at 30°C and 60% RH. Mortality of adults and emergence of adults from the treated eggs / larvae / pupae were observed after required periods. The pupa was the stage most resistant to high temperature.

SEASONAL OCCURRENCE OF *LYGUS* BUGS ON COMMERCIAL DRY EDIBLE BEANS AND SOYBEANS IN MANITOBA.

T. Nagalingam, and N.J. Holliday, Department of Entomology, University of Manitoba, Canada R3T 2N2.

Lygus bugs are pests of many crops in Canada. The seasonal occurrence of *Lygus* bugs was studied in commercial dry edible beans (navy beans and pinto beans) and soybeans in Manitoba during 2008-2010. *Lygus lineolaris*, *L. borealis* and *L. elisus* were the three main *Lygus* species found during the surveys and *L. lineolaris* was the dominant species of *Lygus* in all the three crops sampled. In navy and pinto beans numbers of adults rose corresponding to the flowering of plants and adults were present until the crop senesced. The presence of all stages of nymphs and adults indicated that *Lygus* bugs can produce a single generation in dry edible beans in Manitoba although the *Lygus* bug numbers were low compared to those on other reported hosts. In all the three crops, a sharp increase of *Lygus* bug numbers occurred after the harvesting of adjacent crops, particularly canola; this is suggestive of late season dispersal of *Lygus* bugs to beans from these crops. The seasonal occurrence of *Lygus* bugs on navy beans is important as it has been shown in laboratory experiments that the type of injury caused by *Lygus* bugs is dependent on the stage of the crop attacked.

ASSESSMENT OF *ALEOCHARA BIPUSTULATA* (COLEOPTERA: STAPHYLINIDAE) AS AN ADDITIONAL MORTALITY FACTOR OF *DELIA RADICUM* (DIPTERA: ANTHOMYIIDAE) EGGS IN PRAIRIE CANOLA.

L.D. Andreassen¹, U. Kuhlmann², P.G. Mason³, and N.J. Holliday¹. ¹University of Manitoba, Department of Entomology, Winnipeg, Manitoba, Canada R3T 2N2; ²CABI Europe — Switzerland, Delémont, 2800 Switzerland; ³Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada K1A 0C6.

If *A. bipustulata* is introduced into Canadian prairie canola crops, it will become part of a diverse guild of beetles predatory on *D. radicum* eggs. Two representative species from this guild were used in laboratory and field cage experiments, to determine whether mortality inflicted by *A. bipustulata* is additional to, or a replacement of, mortality inflicted by the current guild. The results will be discussed in the context of evaluation of *A. bipustulata* as a candidate biological control agent.

RESPONSES OF *ALEOCHARA BILINEATA* AND *ALEOCHARA BIPUSTULATA* (COLEOPTERA: STAPHYLINIDAE) TO DIMETHYL DISULPHIDE.

J. Du, and N.J. Holliday, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

Adult *Aleochara bilineata* and *A. bipustulata* are predators and the larvae are parasitoids of *Delia radicum*. Dimethyl disulphide (DMDS) attracts adult beetles to pitfall traps, but its biological role is unknown. In still air, DMDS arrested first instar larvae of both *Aleochara* spp.; in *A. bilineata*, this response was more evident in light than

dark. DMDS increased frequency of parasitism of *D. radicum* puparia by *A. bilineata* larvae. In still air, adult *A. bilineata* showed no response to DMDS.

BEHAVIOUR OF *SITODIPLOSIS MOSELLANA* ON SPRING WHEAT WITH AND WITHOUT OVIPOSITION DETERRENCE.

A.H. Gharalari¹, M.A.H. Smith², S.L. Fox², and R.J. Lamb². ¹Department of Entomology, Plant Pests and Diseases Research Institute, Tabnak Ave., Tehran, Iran; ²Cereal Research Centre, 195 Dafoe Road, Winnipeg, Manitoba, Canada R3T 2M9.

Wheat varieties with oviposition deterrence to wheat midge, *Sitodiplosis mosellana* (Géhin) (Diptera: Cecidomyiidae), can reduce seed damage. The behaviour of ovipositing females on spring wheat with and without oviposition deterrence was investigated to account for observed differences in egg allocation on the two wheat types. The length of time required to lay an egg and mean egg-batch size were similar, but females spent nearly twice as long on non-deterrent wheat than on deterrent wheat. Results are discussed with reference to possible mechanisms.

THE USE OF CROP GRADING TO ESTIMATE WHEAT MIDGE POPULATIONS IN ALL SPRING WHEAT GROWING AREAS OF WESTERN CANADA.

I. Wise, S. Fox, and M.A.H. Smith. Cereal Research Centre, Agriculture and Agri-Food Canada, Winnipeg, Manitoba, Canada R3T 2M9.

The wheat midge, *Sitodiplosis mosellana* (Géhin), is the most serious insect pest of spring wheat in western Canada. It is found in all spring wheat growing areas. Every year the Canadian Grain Commission (CGC) collects wheat samples throughout western Canada to estimate grade quality. Seed damage by the wheat midge is one of many degrading factors used to determine wheat quality. Experimental plots across western Canada in 2007-09 were used to calculate parameters that would enable wheat midge populations to be estimated from samples in which a specific percentage of the samples were degraded because of wheat midge damage. These parameters include the proportion of seed damaged by the wheat midge that is retained during harvest and the weight loss of these seeds, and the proportion of the midge-damaged seed in the grain that is detected during grading.

INSECTS ON FIELD CROPS IN MANITOBA IN 2010 – AN EXTENSION UPDATE.

John Gavloski, Manitoba Agriculture, Food and Rural Initiatives, Box 1149, Carman, Manitoba, Canada R0G 0J0.

There were few insect problems in cereal crops in 2010. Armyworms (*Mythimna unipuncta*) were a concern in some fields. Shipments of cereal leaf beetle larvae (*Oulema melanopus*) containing the parasitoid *Tetrastichus julis* (Eulophidae) were released in some fields near Swan River. In canola, cutworms were a problem in some fields.

Root maggots (*Delia* spp.) and damage to plants were noticed in some fields planted in canola for the second year in a row. Diamondback moth (*Plutella xylostella*) was a concern in the Eastern and Central regions of Manitoba. *Lygus* bugs were the main insect concern in sunflower fields. Green cloverworm (*Hypena scabra*) was a concern in soybeans and dry edible beans. Annual summaries of insect pests in crops in Manitoba are posted at: <http://www.gov.mb.ca/agriculture/crops/insects/index.html>.

SYMPOSIUM: Monitoring Insect Abundance

CITY OF WINNIPEG'S INSECT CONTROL BRANCH, MORE THAN JUST MOSQUITOES: URBAN AND INVASIVE PEST SPECIES SURVEILLANCE AND CONTROL PROGRAMMES.

Taz Stuart, City Entomologist, 1539 Waverley St., Winnipeg, Manitoba, Canada R3T 4V7.

The City of Winnipeg's Insect Control Branch is best known by city residents for its mosquito control programme, but there are many other insect pest surveillance and control programmes. A brief overview of invasive, urban and some stored product pest surveillance and control undertaken by the City to increase the quality of life for its residents will be discussed.

MONITORING FOREST PESTS IN MANITOBA.

I. L. Pines, G. Zubriski, and L. Christianson, Manitoba Conservation, Forestry Branch, Forest Health and Renewal, Winnipeg, Manitoba, Canada R3J 3W3.

Forest insect pests can cause significant economic losses in our commercial, recreational and urban forests. Manitoba Forestry Branch uses ground and aerial survey techniques to determine insect population levels, distribution and damage. Native and invasive species are monitored by the Forest Health and Renewal Section. Ground surveys generally involve the establishment of permanent and temporary sample plots for the placement of pheromone-baited traps to capture adults to evaluate presence, estimate population levels and may include the collection of branches to assess egg mass numbers, current defoliation and to predict defoliation levels. Aerial surveys are employed to map pest infestations and assess their impact on the forest resource. Results of these surveys are used to determine management strategies for each pest. Discussion will focus on surveys for the eastern spruce budworm, jack pine budworm, eastern larch beetle, elm bark beetle, gypsy moth and emerald ash borer.

KEEPING TABS ON INSECTS IN PRAIRIE CROPS – MONITORING AND PREDICTING INSECT DISTRIBUTION AND ABUNDANCE.

R.M. Weiss, and O.O. Olfert, Agriculture and Agri-Food Canada, Saskatoon Research Centre, 107 Science Place, Saskatoon, Saskatchewan, Canada S7N 0X2.

The Prairie Ecoregion contains a large expanse of cultivated land; of the 71 million

acres in crop, approximately 30 million of wheat and 12 million acres of canola are planted each growing season. Since the first settlement in western Canada, producers have dealt with insects. When insect pest outbreaks occur in Western Canada their impact can be felt across the entire region. Effectiveness of insect control strategies can be enhanced if producers and government agencies are informed of expected levels of infestation in the coming season. Annual surveys are conducted for a number of species including grasshoppers, wheat midge, bertha armyworm, diamondback moth, and cabbage seedpod weevil. The surveys are used to monitor changes in abundance and distribution. The maps, reflecting crop risk, are published and circulated each week during the growing season. Survey results are used to produce forecasts and risk warnings for insect pests and have practical economic and environmental implications. Survey data are used as input to modeling systems that are used for model predictions. Recent research has focused on application of bioclimatic models to predict changes in distribution and abundance in future climates. Examples of survey results will be presented and model output for present and future climates will be discussed.

FINDING A NEEDLE IN THE HAYSTACK: DENSITY ESTIMATION AND DETECTION OF INSECTS IN GRAIN SILOS.

F. Jian¹, D.S. Jayas¹, N.D.G. White², and P.G. Fields². ¹Department of Biosystems Engineering, University of Manitoba, Winnipeg, Manitoba, Canada R3T 5V6; ²Agriculture and Agri-Food Canada, Cereal Research Centre, 195 Dafoe Road, Winnipeg, Manitoba, Canada R3T 2M9.

Accurate measurement of insect-density is the foundation of all integrated pest management (IPM) programmes. An understanding of insect movement and distribution within grain bulks is required to accurately estimate insect density. In this review, we cover the following topics: 1) movement and distribution of grain beetles inside grain bulks in response to grain temperature, moisture, and insect density; 2) the accuracy of insect sampling methods; 3) advantages and disadvantages of different insect detection methods; 4) insect detection and density estimation in commercial grain stores; 5) a new commercial software and electronic trap for insect detection and density estimation.

***The Entomological Society of Manitoba
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which provided financial support for the
66th Annual Meeting***

Abell Pest Control

Bayer Cropscience Canada Co.

Canadian Centre for Mosquito Management

Canadian Grain Commission

Canola Council of Canada

City of Winnipeg Insect Control Branch

Dow Agro Sciences Canada, Inc.

Metro Pest Control

Monarch Pest Control

North South Consultants

Orkin PCO Services

Poullins Pest Control

Province of Manitoba-Conservation

Viceroy Distributors

The Entomological Society of Manitoba 66th Annual Business Meeting

23 October, 2010

Department of Entomology, University of Manitoba

Attendance

| | |
|--------------------------|-------------------|
| President | Marjorie Smith |
| Secretary | David Ostermann |
| President-Elect | Taz Stuart |
| Regional Director to ESC | Terry Galloway |
| Proceedings Editor | Terry Galloway |
| Member-at-Large | Jonathan Veilleux |
| Treasurer | Ian Wise |
| Pat Mackay | |
| Paul Fields | |
| Neil Holliday | |
| Brent Elliott | |
| John Gavloski | |
| Robert Lamb | |
| Erica Smith | |
| Alicia Leroux | |
| Barry Konzelman | |
| Lisa Capar | |
| Wolly Wijayarathne | |
| Rob Currie | |

Regrets: Kathy Cano, Désirée Vanderwel

1. **Acceptance of Agenda**

Motion: MacKay/Lamb - to accept the Agenda (Appendix A).....Carried

2. **Acceptance of the Minutes**

Motion: Galloway/Lamb - to accept previous Minutes of the 65th Business Meeting (7 November, 2009)Carried

3. **Business Arising from the Minutes**

As an update to last year’s Business Arising from the Minutes, an invitation to socialize on the “last Friday of the month” has been extended to members outside of the U of M Entomology Department. Emails from the membership list are used. There have been relatively few uptakes.

4. Reports - Executive

Motion: Lamb/MacKay - to receive the reportsCarried

Appendix B - President

Smith thanked everyone who participated in the Society during her term as President and indicated she was available for Youth Encouragement presentations.

Appendix C - Treasurer

The accounts have gone through a financial review and found to be in good order. There was a significant increase in cash in 2010. The ESM received \$6,305 in net revenue from last year's successful ESC/ESM meeting. Total excess revenue for the 2010-11 fiscal year was \$7,388.

There was discussion about the financial position of the ESM, its status as a registered charity, and whether there are changes from Canada Revenue Agency that affect the Society. Wise said he'd check with the accountant, Ryan Rawluk.

After checking into it, Wise reported: "The disbursement quota that applies to all charitable organizations in Canada has been changed. The old disbursement quota was comprised of two rules: the Charitable Expenditure Rule, which required the disbursement of 80% of all donations, and the Capital Accumulation Rule which limited the amount charitable organizations could retain in assets not currently used in charitable activities or administration to \$25,000. The Charitable Expenditure Rule has been terminated and the ceiling on assets has been increased to \$100,000. The only bearing these changes will have on the Society's finances is the Society no longer has to tie its scholarship and award funds to the meeting donations."

There was discussion about allocating the profits from the ESC/ESM meeting. It was noted that the ESM has losses some years and therefore it may be prudent not to spend the money but to leave it in the chequing account and perhaps move it into the T-bill account to collect some interest.

Appendix D - Regional Director to the ESC**Appendix E - Editor of the Proceedings**

The Proceedings are not out at this time. This is due to delays at the printer and possible changes to how the document is bound because of the large number of abstracts.

5. Reports - Committees**Appendix F - Endowment Fund Board**

Presented by MacKay

Appendix G - Finance

Presented by MacKay. Thanks to Smith for helping to keep the finances organized.

It was discussed that the budget for the Social Committee should be increased to \$300 each year in line with actual costs in 2010.

Appendix H - Publicity / Newsletter

The newsletter will continue to be distributed as a hard copy and an electronic version will be posted to the ESM website.

Appendix I - Social

There were two Social Committee events this year, one at the Canad Express and the other at Triple B's Bar and Billiards. There may be another in November but it's undecided. Lisa Capar was thanked for her efforts. Some email addresses on the membership list may be outdated.

Appendix J - Youth Encouragement

There were at least 33 presentations. Some requests went unfulfilled due to lack of available presenters. It was noted that this should be addressed by the ESM.

Appendix K - Archives

Smith is currently looking for Chairs for the Archives and Common Names Committees.

Appendix L - Common Names

No report. Position vacant.

Appendix M - Scholarships and Awards

Smith highlighted the winners. Student Achievement Award-Alicia Leroux; Orkin/Swat Student Award-Lindsay Geisel; The ESM Graduate Scholarship-Suresh Desai. Awards are presented at the ESM mixer at Pat and Bob's. The winners have yet to be notified.

Appendix N - Fundraising

Presented by Ostermann. A significant amount of money was raised for the ESC/ESM joint meeting. Elliott noted that a couple of sponsors may be missing from the list of "Donations as of December 1, 2009".

Appendix O - Scientific Programme

Gavloski reported that there were 44 total registrations including 30 members and 14 students. There may be a profit from the meeting, thanks in part to fundraising. John was thanked for his hard work in putting the meeting together.

Appendix P - Membership

Presented by Ostermann. Membership is at 91, down from 98 last November.

Appendix Q - Web Page

Students (Jonathon and Candace) have expressed interest in updating the website. The ESM website is hosted by Paul Fields.

Motion: Elliott/Galloway – to accept the reports as given.....Carried

6. Election Results

President Elect.....Lisa Capar

Member-at-Large..... Alicia Leroux

Appendix R

Motion: Wise/MacKay - to destroy the ballotsCarried

7. **New Business**

The *ad hoc* committee to examine the by-laws has not met, but intends to meet in the new year.

Motion: Smith/Lamb - to reappoint the *ad hoc* committee to examine the by-lawsCarried

It was noted that it has been a long time since new Honorary Members have been identified in the Society. Currie noted that there was once an *ad hoc* Honorary Members Committee.

8. **Moment of Silence for Deceased Members This Year**

There was a moment of silence for ESM members Rob Roughley and Harold Westdal who passed away this year.

9. **Transfer of Presidential Office** - Marjorie Smith to Taz Stuart

10. **Reappointment of Auditor**

Motion: Wise/MacKay- to appoint Ryan Rawluk CGA as auditor.....Carried

11. **Other Business**

Holliday noted the successful insect collecting trip organized by Alicia Leroux on 11 September 2010. It was suggested that future collecting activities could be organized by the Social Committee.

Stuart noted that “ESM.CA” is an available website domain name.

Motion: Stuart/Lamb- to explore the availability and cost of “ESM.CA” as a website address for the SocietyCarried

Alicia Leroux indicated she would like to start a Facebook page of ESM, and there were no apparent objections to this.

Elliott was thanked for his significant contribution to the organization of last year’s ESC/ESM joint meeting.

Smith was thanked for being President.

12. **Adjournment** - 3:35p.m.

Motion: Lamb - to adjourn the meeting.....Carried

APPENDIX A

**The Entomological Society of Manitoba, Inc.
Agenda of the Entomological Society of Manitoba
66th Annual Business Meeting**

23 October, 2010

1. Acceptance of Agenda
2. Acceptance of the Minutes of the Last Annual Meeting (7 November, 2009)
3. Business Arising from the Minutes
4. Reports - Executive
 - President** - Marjorie Smith
 - Treasurer** - Ian Wise
 - Regional Director to the ESC** - Terry Galloway
 - Editor of the Proceedings** - Terry Galloway
 - Endowment Fund Board** - Kathy Cano
5. Reports - Committees
 - Finance** - Kathy Cano
 - Publicity/Newsletter** - Patricia MacKay, Mahmood Iranpour
 - Social** - Lisa Capar
 - Youth Encouragement/Public Education** - Jonathan Veilleux
 - Archives** - vacant
 - Common Names** - vacant
 - Scholarship and Awards** - Richard Westwood
 - Fund-Raising** - Kathy Cano
 - Scientific Programme** - John Gavloski
 - Membership** - Désirée Vanderwel
 - Web Page** - Rob Currie
6. Election Results - scrutineer, Colin Demianyk
7. New Business
 - *ad hoc* committee to examine by-laws - Marjorie Smith
8. Moment of Silence for Deceased Members This Year
9. Transfer of Office
10. Reappointment of Auditor
11. Other Business
12. Adjournment

APPENDIX B

Entomological Society of Manitoba President's Report – Annual Business Meeting

During the past year, the Executive of the Entomological Society of Manitoba (ESM) met twice to consider the Society's business. The first Executive meeting was held 4 February 2010, at the Cereal Research Centre in Winnipeg. It was noted that Bob Wrigley had been selected as the recipient of the Criddle Award presented at the ESC/ESM Joint Annual Meeting in October 2009, and that a letter of condolence was sent to Dee Dee Westdal, widow of Harold Westdal, on behalf of the ESM membership. Committee Chairs were re-appointed for the year and included several new ones: Jonathan Veilleux of the Youth Encouragement and Public Education Committee, Kathy Cano of the Finance Committee and Endowment Fund Board, Lisa Capar of the Social Committee, and John Gavloski of the Scientific Programme Committee. The Common Names Committee and Archives Committee remained vacant following the death of Rob Roughley. I had met with Jonathan Veilleux prior to the Executive meeting to discuss the direction and plans of the Youth Encouragement Committee. This Committee has been run mainly by the ESM's student members and members of the Department of Entomology, University of Manitoba. There is an ongoing need for more ESM members to support the Youth Encouragement Committee by giving one or two presentations year. Ian Wise, Treasurer, summarized the current financial state, and the budget was approved for the year. An *ad hoc* committee to review the Society's By-laws and Rules and Regulations was approved and Richard Westwood was appointed Chair. Subsequent to the Executive meeting the President sent an e-mail letter to the membership soliciting members to sit on the committee. Neil Holliday, Ian Wise and Erica Smith volunteered.

The second Executive meeting was held on 28 September 2010 at the Cereal Research Centre in Winnipeg. The Social Committee was active in the spring and two activities were held: a luncheon at which Pat MacKay and Bob Lamb gave a presentation of their trip to the Galapagos, and a New Members' Social at which Bob Wrigley related anecdotes of his collecting trip to the USA and showed methods of collecting and preserving specimens. Rob Currie, Chair of the Website Committee, has agreed that the website needs to be updated and will work with Jonathan Veilleux and Candice Grant who are beginning to formulate ideas for an updated website. In July, I met with Richard Westwood, Chair of the *ad hoc* committee to review the by-laws, to discuss the committee's roles and purposes. The Executive approved the budget for the ESM Annual Meeting on 22 and 23 October, presented by John Gavloski.

I would like to express my appreciation of all the hard work of the Executive, Committee Chairs, Committee members and participants in the Society's activities. The ESM remains a very active Society as a result of all these members' participation. I also thank you for the opportunity to serve as President for this year.

Marjorie Smith
President, Entomological Society of Manitoba

APPENDIX C

Report of the Treasurer

**ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
FINANCIAL STATEMENTS
(UNAUDITED - SEE REVIEW ENGAGEMENT REPORT)
AUGUST 31, 2010**

Ryan Rawluk Certified General Accountant
PROFESSIONAL CORPORATION

Ryan Rawluk Certified General Accountant

PROFESSIONAL CORPORATION

REVIEW ENGAGEMENT REPORT**To the Members of:****Entomological Society of Manitoba Inc.**

I have reviewed the balance sheet of **Entomological Society of Manitoba Inc.** as at **August 31, 2010** and the statements of revenues and expenditures, and net assets for the year then ended. My review was made in accordance with Canadian generally accepted standards for review engagements and, accordingly, consisted primarily of enquiry, analytical procedures, and discussion related to information supplied to us by the Society.

A review does not constitute an audit and, consequently, I do not express an audit opinion on these financial statements.

These financial statements have been prepared using the cash basis of accounting as further described in Note 2. The effects of this departure from Canadian generally accepted accounting principles on the unaudited financial statements has not been determined.

My review indicates that, because these financial statements are prepared using the cash basis of accounting as described in the preceding paragraph, these financial statements are not in accordance with Canadian generally accepted accounting principles.

Winnipeg, Manitoba
October 18, 2010



Ryan Rawluk
Certified General Accountant
Professional Corporation

ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
BALANCE SHEET
(UNAUDITED - SEE REVIEW ENGAGEMENT REPORT)
AUGUST 31, 2010

| | | ASSETS | |
|----------------|---------------------------------------|-------------------------|-------------------------|
| | | <u>2010</u> | <u>2009</u> |
| CURRENT | | | |
| | Cash | \$ 11,561 | \$ 1,461 |
| | Money market fund (Note 3) | 3,656 | 14,648 |
| | Term deposits (Note 4) | <u>8,000</u> | <u>--</u> |
| | | 23,217 | 16,109 |
| | TERM DEPOSITS (Note 4) | <u>32,280</u> | <u>32,000</u> |
| | | <u>55,497</u> | <u>48,109</u> |
| | | | |
| | | | |
| CURRENT | | | |
| | LIABILITIES | nil | nil |
| | | | |
| | | | |
| | NET ASSETS | | |
| | INTERNALLY RESTRICTED (Note 5) | 40,000 | 32,000 |
| | UNRESTRICTED NET ASSETS | <u>15,497</u> | <u>16,109</u> |
| | | <u>55,497</u> | <u>48,109</u> |
| | | <u>\$ 55,497</u> | <u>\$ 48,109</u> |

APPROVED BY THE BOARD:

_____ Director

_____ Director

The accompanying notes form an integral part of these financial statements

Ryan Rawluk Certified General Accountant

PROFESSIONAL CORPORATION

**ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
STATEMENT OF REVENUES AND EXPENDITURES
(UNAUDITED - SEE REVIEW ENGAGEMENT REPORT)
FOR THE YEAR ENDED AUGUST 31, 2010**

| | <u>2010</u> | <u>2009</u> |
|---|------------------------|--------------------------|
| REVENUES | | |
| Annual meeting | \$ 2,000 | \$ 760 |
| Donations | — | 1,800 |
| Interest income | 1,171 | 1,423 |
| Joint ESC/ESM Annual Meeting (Note 6) | 6,305 | — |
| Members fees | 1,271 | 1,410 |
| Miscellaneous | 66 | 99 |
| Proceedings | 329 | 153 |
| Youth encouragement and public education | <u>550</u> | <u>280</u> |
| | 11,692 | 5,925 |
| | | |
| EXPENDITURES | | |
| Awards and scholarships | 2,100 | 1,500 |
| General | 846 | 760 |
| Meetings | — | 3,372 |
| Newsletter | 460 | 234 |
| Proceedings | 327 | 1,022 |
| Social committee | 273 | — |
| Youth encouragement and public education | <u>298</u> | <u>104</u> |
| | <u>4,304</u> | <u>6,992</u> |
| | | |
| EXCESS OF REVENUES OVER EXPENDITURES | <u><u>\$ 7,388</u></u> | <u><u>\$ (1,067)</u></u> |

The accompanying notes form an integral part of these financial statements

Ryan Rawluk Certified General Accountant

PROFESSIONAL CORPORATION

**ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
STATEMENT OF CHANGES IN NET ASSETS
(UNAUDITED - SEE REVIEW ENGAGEMENT REPORT)
FOR THE YEAR ENDED AUGUST 31, 2010**

| | <u>Internally restricted</u> | <u>Unrestricted net assets</u> | <u>2010 Total</u> | <u>2009 Total</u> |
|---------------------------------------|----------------------------------|------------------------------------|-------------------|-------------------|
| Balance, beginning of the year | \$ 32,000 | \$ 16,109 | \$ 48,109 | \$ 49,176 |
| Excess of revenues over expenses | — | 7,388 | 7,388 | (1,067) |
| Fund transfer | 8,000 | (8,000) | — | — |
| Balance, end of the year | <u>\$ 40,000</u> | <u>\$ 15,497</u> | <u>\$ 55,497</u> | <u>\$ 48,109</u> |

The accompanying notes form an integral part of these financial statements

Ryan Rawluk Certified General Accountant

PROFESSIONAL CORPORATION

**ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
NOTES TO THE FINANCIAL STATEMENTS
(UNAUDITED - SEE REVIEW ENGAGEMENT REPORT)
AUGUST 31, 2010**

NOTE 1 PURPOSE OF THE ORGANIZATION

The Entomological Society of Manitoba Inc. ("The Society") was formed to foster the advancement, exchange, and dissemination of entomological knowledge. The Society was incorporated on July 21st, 1976 under the laws of the Province of Manitoba as a non-profit organization and a registered charity under the Income Tax Act.

NOTE 2 SIGNIFICANT ACCOUNTING POLICIES

Income and expenses are recorded on the cash basis of accounting. There are no accruals of receivables or payables at the year-end. Inventory is expensed when it is purchased. Interest from investment certificates is paid out annually and interest is not accrued. Capital assets are expensed when acquired and, therefore, there is no annual amortization allowances.

NOTE 3 MONEY MARKET FUND

The Society has a money market fund with Royal Mutual Funds Inc. The investment highly liquid and consists of short-term government bonds. The investment is shown at market value at year-end.

NOTE 4 TERM DEPOSITS

The Society has five term deposits with Royal Trust Corporation of Canada. The term deposits generally have five year maturities and interest is paid annually. The table below summarizes the term deposits.

| <u>Certificate Number</u> | <u>Interest Rate (%)</u> | <u>Maturity Date</u> | <u>Par Value (\$)</u> |
|--------------------------------------|--------------------------|----------------------|-----------------------|
| 900055611-0009 | 3.200 | Nov 16, 2010 | \$ 8,000 |
| Total current term deposits | | | \$ 8,000 |
| 900055611-0010 | 4.000 | Nov 16, 2011 | \$ 8,000 |
| 900055611-0011 | 3.850 | Nov 9, 2012 | 8,000 |
| 960006278-0012 | 3.500 | Dec 12, 2012 | 8,280 |
| 900055611-0012 | 3.000 | Nov 5, 2014 | 8,000 |
| Total long term term deposits | | | \$ 32,280 |

NOTE 5 INTERNALLY RESTRICTED NET ASSETS

The Society's board of directors has internally restricted \$40,000 (August 31, 2009 - \$32,000) to be held for endowment purposes. These internally restricted amounts are not available for unrestricted purposes without approval of the board of directors.

Ryan Rawluk Certified General Accountant
PROFESSIONAL CORPORATION

**ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
NOTES TO THE FINANCIAL STATEMENTS
(UNAUDITED - SEE REVIEW ENGAGEMENT REPORT)
AUGUST 31, 2010**

NOTE 6 JOINT ESC/ESM MEETING

In October 2009, the Society hosted a joint annual meeting with the Entomological Society of Canada. The revenues and expenses of the joint annual meeting are shown as a net figure on the statement of revenues and expenditures. The following statement shows the breakdown of the revenues and expenditures of the joint annual meeting.

| | 2010 | 2009 | |
|---|-----------------|--------------|--|
| REVENUES | | | |
| Donations | \$ 25,369 | \$ -- | |
| Registration fees | 57,669 | -- | |
| | 83,038 | -- | |
| EXPENDITURES | | | |
| Bank service fees | 1,649 | -- | |
| Facility rental | 47,037 | -- | |
| Printing and promotional | 3,417 | -- | |
| Refunds | 793 | -- | |
| Speaker and special guests | 1,295 | -- | |
| Travel | 17,695 | -- | |
| Volunteers | 2,100 | -- | |
| | 73,986 | -- | |
| EXCESS OF REVENUES OVER EXPENSES | \$ 9,052 | \$ -- | |
| ALLOCATED AS FOLLOWS: | | | |
| Earned by Entomological Society of Canada | 2,747 | -- | |
| Earned by Entomological Society of Manitoba | 6,305 | -- | |
| | \$ 9,052 | \$ -- | |

NOTE 7 STATEMENT OF CASH FLOWS

A statement of cash flows is not included with these financial statements as the Society uses the cash basis of accounting and it would not provide any useful information that cannot be attained by the balance sheet and the statement of revenues, expenditures, and surplus.

APPENDIX D

Entomological Society of Manitoba Report of the ESC Regional Director

Because of the timing of the AGM of the ESM and the Joint ESC-ESBC meeting in Vancouver (31 October - 3 November), many items of shared interest with ESM member have not yet been reported.

ESC President, Maya Evenden (Department of Biological Sciences, University of Alberta and Plenary Speaker at our own Annual Meeting) will preside over the governing board meeting on 30 October. Peter Mason, AAFC Ottawa and Adjunct Professor in the Department of Entomology at the University of Manitoba, is 1st Vice-President and Michel Cusson, Service canadien des forêts, Ressources naturelles Canada, is 2nd Vice-President. The next ESC Annual Meeting is a joint meeting with the Acadian Entomological Society in Halifax. Notices with specific information related to the meeting will be published in the March and June issues of the *ESC Bulletin*.

Cedric Gillott took over from Kevin Floate as editor of the *ESC Bulletin* in December, 2009. ESM members who have articles or information they would like to submit to the *Bulletin* should send them to Cedric at the Department of Biology, University of Saskatchewan, Saskatoon, SK S7N 5E2, cedric.gillott@usask.ca.

The news is all good related to publications involving ESC. The Agriculture and Agri-Food handbook series has been made available without cost through the ESC webpage. There has been a great deal of renewed interest in these important publications on the insect fauna of Canada, a tremendous initiative of Patrice Bouchard (ESC Treasurer), the Publications Committee and Rick West (ESC Webmaster). Institutional subscriptions to *The Canadian Entomologist* and the *Memoirs* have increased to the point where initial costs for digitization have been recovered. In addition to this, the impact factor for *TCE* has gone up to 0.992 from 0.903. There has never been a better time to submit your manuscripts to the *TCE*. After a number of years of service to the society, the current editor-in-chief, Robb Bennett, has announced that he will step down from his position as of October, 2011. His successor has not yet been announced.

A new ESC award will be presented in Vancouver this year, the Bert and John Carr Award. For anyone who spent much time talking with Rob Roughley, Bert and John's names would surely have come up. They were amateur entomologists in Alberta whose hobby in the study of insects, especially beetles, became their passion. They collected hundreds of thousands of specimens, mostly from the Prairie Provinces, donated to the Canadian National Collection in Ottawa. This cash award is named in honour of the Carrs to support faunal studies in entomology and is awarded to applicants with preference given to amateurs. A fitting tribute to a special couple.

I appreciate the opportunity to serve on the Executive of ESM and the Board of ESC. I encourage those of you who are not members of ESC to consider joining and to participate in upcoming events and society activities. I shall submit a summary of items from the upcoming JAM in Vancouver relevant to ESM members in a future *ESM Newsletter*.

Terry Galloway
Regional Director

APPENDIX E

Entomological Society of Manitoba Report of the *Proceedings* Editor

Volume 65 (2009) of the *Proceedings of the Entomological Society of Manitoba* was sent to Warren Schuetz and his staff in The University of Winnipeg print shop in early September, but because of a heavy workload is not available for distribution to the ESM membership for the AGM. Volume 65 consists of 88 submitted pages, with one submitted manuscript, two obituaries (Cam Jay and Bill Turnock), the abstracts from the Joint Annual Meeting with the Entomological Society of Canada held at the Hotel Fort Garry, 18-21, 2009 and the Minutes of the 65th Annual Business Meeting of the Entomological Society of Manitoba held on 7 November in Room 219, Animal Science/Entomology Building. Because of the length of this volume, the method of binding will be different from past years, either spiral bound or with perfect binding. Cost of production will be presented to the ESM Executive at its next meeting.

Although once again, there was a shortage of submitted papers for Vol. 65, I already have two which, if accepted, will be published in Vol. 66. If you have a manuscript that is of relevance to entomology in Manitoba, please consider submitting it to the *Proceedings*. If you know of any amateur entomologists who may not be ESM members who have new information on distribution, occurrence or taxonomy of insects in Manitoba, please encourage them to consider publishing their results in the *Proceedings*. All manuscripts are peer-reviewed; all published papers are available as PDF's on the web (Rob Currie has done a great job to see that is done promptly after I provide him with the PDF) and are fully accessible using on-line search engines; for several years, we have been able to publish submitted papers without page charges to the authors. The *Proceedings* are now freely available to entomologists everywhere, so what better place to publish those manuscripts of regional focus but international interest?

Proceedings Editor
Terry Galloway

APPENDIX F

Entomological Society of Manitoba Report of the Endowment Fund Board for 2009-2010

The Endowment Fund Board met on 18 October 2010 to review activity during the 2009-2010 fiscal year. A summary of investments and projected interest income for the fiscal year is attached (Table 1). Interest generated by the Endowment Fund provides a basis for funding the publication of the *Proceedings* and other Society activities. The Endowment Fund principal was \$41,000 as of October 2010.

The \$8,000 GIC #900055611-0010 matures on 16 November and will be reinvested for an additional 5 years and the interest will be paid annually into the chequing account. This was approved at the Executive Meeting on September 28, 2010.

The Endowment Fund Board will increase GIC #900055611-0010 from its current \$8,000 value by \$1,000, to be drawn from the T Bill account, to a total of \$9,000. This was approved at the Executive Committee meeting on September 28, 2010.

Endowment Fund Guaranteed Investment Certificates

Table 1: Account information as of 5 November, 2009. Interest generated during the 2010-2011 fiscal year.

| Certificate No. | Principal | Interest Rate (%) | Maturity Date | Annual Interest |
|-----------------|--------------------|-------------------|---------------|-------------------|
| 900055611-0012 | \$8,000.00 | 3.00 | Nov. 5, 2014 | \$240.00 |
| 900055611-0010 | \$8,000.00 | 3.20 | Nov.16, 2010 | \$256.00 |
| 900055611-0009 | \$8,000.00 | 4.00 | Nov 16, 2011 | \$320.00 |
| 900055611-0011 | \$8,000.00 | 3.85 | Nov 9, 2012 | \$308.00 |
| 960006276-0012 | \$8,000.00 | 3.50 | Dec 12, 2012 | \$280.00 |
| Total | \$40,000.00 | | | \$1,404.00 |

The cap of \$50,000 was approved at the Annual Business Meeting in 2009.

Kathy Cano, Chair
 Marjorie Smith
 Ian Wise
 Pat MacKay

APPENDIX G

Entomological Society of Manitoba Report of the Finance Committee for 2009-2010

The Finance Committee met on 18 October 2010, to review the 2009-2010 financial statement and the budgets for the current and next fiscal years. The Society continues to be in good financial shape. This year the ESC-ESM 2009 Joint Annual Meeting turned a profit of \$10,239 and because of this we had a surplus of \$7,408 for the 2009-2010. The deposit of \$2,000 was returned to the ESM during the current fiscal year. The financial records of the Joint Meeting are being audited this month (October) and this will result in greater than usual general expenses in 2010-11.

Kathy Cano, Chair
 Marjorie Smith
 Ian Wise
 Pat MacKay

Income and expenses for fiscal year ending 31 August.

| BUDGET ITEMS | 2009-10 | 2010-11 | 2011 – 2012 |
|---|----------------|-----------------------------|--------------------|
| REVISED 18 October 2010 | Actual | Actual and Projected | Projected |
| ASSETS | | | |
| T-Bill Account/Chequing | --- | --- | --- |
| Endowment Fund | 40,000 | 41,000 | 42,000 |
| REVENUE | | | |
| Membership Dues | 1,271 | 1,400 | 1,400 |
| Proceedings | 329 | 200 | 200 |
| Social Committee | 0 | 0 | 0 |
| Youth/Education Committee | 400 | 200 | 200 |
| Donations: from YEC activities | 150 | 100 | 100 |
| fundraising for AGM | 0 | 1,600 | 1,600 |
| student awards | 0 | 200 | 200 |
| Fundraising Committee | 0 | 0 | 0 |
| Meetings: ESM/AGM | --- | 575 | 800 |
| ESC-ESM 2009 JAM: return of hotel deposit | 2,000 | --- | |
| ESC-ESM 2009 JAM: surplus | 10,239 | --- | |
| Interest: G.I.C. income | 1,164 | 1,400 | 1,400 |
| T-Bill Account/Chequing | 7 | 10 | 10 |
| Miscellaneous – GST rebate | 66 | 1,100 | 1,100 |
| TOTALS | 15,626 | 6,785 | 7,010 |
| EXPENSES | | | |
| General Society Expenses | 825 | 1,500 | 800 |
| Proceedings | 327 | 1,000 | 500 |
| Newsletter | 460 | 600 | 600 |
| Social Committee | 273 | 100 | 200 |
| Youth/Education Committee | 298 | 300 | 200 |
| Fundraising Committee | 0 | 0 | |
| Student Awards and Scholarships | 2,100 | 1,500 | 1,500 |
| Meetings: ESM/AGM | --- | 1,815 | 2,000 |
| ESC-ESM 2009 JAM: part of hotel deposit | 3,935 | --- | |
| Donations | 0 | 0 | |
| Representation at ESC | 0 | 600 | 600 |
| TOTALS | 8,218 | 7,415 | 6,400 |
| Net gain (loss), year ending Aug. 31 | 7,408 | (630) | 610 |

APPENDIX H

Entomological Society of Manitoba Report of the Newsletter Committee

Production of the Newsletter seems to be proceeding relatively smoothly, if sometimes a bit off schedule. The last issue of the Newsletter published in 2008/2009, and reported on last year, was Volume 36.1, which was planned for distribution in April or May, but not mailed until August 13 2009. As a result of that timing change, the first issue distributed in 2009/2010 went out on February 25 2010, and was a combined Volume 36.2 and 36.3. It was mailed with the Proceedings, and mailing costs were covered under the Proceedings budget. Volume 37.1 was distributed late on July 06 2010, and Volume 37.2 was distributed on time on September 30 2010. The final issue of Volume 37 is due out in December 2010 or January 2011. Volumes 36.2 & .3, 37.1 and 37.2 contained 14, 12 and 13 pages, respectively. The membership list was sent out with Volume 36.2 & .3. Volumes 36.2 & .3, 37.1 and 37.2 cost \$79.02, \$148.67, and \$169.26, respectively. One box of envelopes was purchased, at a cost of \$33.59. Currently \$600 is budgeted by the Society for the Newsletter, \$180 for each of three issues and \$60 for supplies. We seem to be able to operate well within that limit.

Additional content from the membership would be welcomed.

Patricia MacKay
Mahmood Iranpour
Co-editors, ESM Newsletter

APPENDIX I

Entomological Society of Manitoba Report of the Social Committee

I was asked to be the social committee near the beginning of 2010. The year before the committee was largely inactive. A luncheon was arranged for March 24th at the Canad Express, where Pat MacKay and Bob Lamb gave a talk about their trip to the Galapagos Islands following a lunch. The lunch was pre-selected by participants.

The ESM New Members Social was held 19 May at Triple B's; Bob Wrigley gave a talk entitled "Bug Quest - The passionate pursuit of new arthropods". During which Bob shared with us many valuable collecting and preservation techniques for many insects. The lunch was again pre-selected by participants.

Notices went out one month before each event. This was enough time to get an idea of participation and get all lunch orders in on time. There may be time for one more social event this year in November.

Lisa Capar, Chair

APPENDIX J

Entomological Society of Manitoba Youth Encouragement Committee

For another year, kids, teenagers, young adults and seniors have had the chance to learn about insects through our presentations. Most of the times, these include a slideshow during which one or two speakers make sure to differentiate insects from other arthropods and explain basic entomological concepts to the audience. Once this part is done, drawers containing Manitoba and exotic insects are shown or passed around while questions are asked. The last part of a typical presentation is usually the one that audience members prefer. It is when they get to hold live insects: Vietnamese stick insects and Madagascar hissing cockroaches. Live darkling beetles and giant Brazilian cockroaches at different growth stages are sometimes included in the presentation as both are perfect to demonstrate the complete and incomplete developments of insects. On rare occasions, assassin bugs are also part of the presentation.

This year, the slideshow was adapted a few times to meet teachers' demands. In one case, it focused entirely on spiders. For this presentation, a live tarantula and an old exoskeleton were brought to the school. Other adaptations had a greater emphasis on food production or insect development.

Over 1300 persons, mostly kids, enjoyed the presentations this year. The numbers could have been higher if Chérie Dugal, who was coordinating everything while Jonathan Veilleux was in Saskatchewan for the summer, did not have to turn down some requests due to lack of time and help. Also, nothing about the Amazing Agriculture Adventures event was written down. As a result, these numbers cannot be included.

Besides Chérie's great contribution during Jonathan's absence, others have volunteered. These people have either made presentations or have taken care of the live insects. Here are their names, in alphabetical order: Lars Andreassen, Cheryl Babel, Kate Bergen, Christie Borkowsky, Suresh Desai, Taryn Dickson, Dr. Terry Galloway, Sebastian Ibarra, Dr. Bob Lamb, Alicia Leroux, Dr. Pat MacKay and Leanne Peixoto.

All in all, the year was a positive one and everybody who filled an evaluation form was pleased with the presentations. \$290 in donations was given to the ESM at large or to the Youth Encouragement Committee more specifically.

Jonathan Veilleux
Youth Encouragement Committee Activities

| YEAR/MONTH | PRESENTATIONS | | NUMBER OF AUDIENCE MEMBERS PRESENT |
|--------------|---------------|--------------------|---------------------------------------|
| | IN DEPARTMENT | OUTSIDE DEPARTMENT | |
| 2009/11 | 1 | 2 | 120 |
| 2009/12 | 1 | 1 | 25 |
| 2010/01 | 0 | 0 | 0 |
| 2010/02 | 0 | 1 | 40 |
| 2010/03 | 3 | 1 | 95 |
| 2010/04 | 1 | 3 | 268 |
| 2010/05 | 4 | 1 | 221 |
| 2010/06 | 0 | 1 | 100 |
| 2010/07 | 1 | 4 | 177 |
| 2010/08 | 1 | 5 | 197 |
| 2010/09 | 0 | 0 | 0 |
| 2010/10 | 1 | 1 | 95 |
| TOTAL | 13 | 20 | 1338 |

All activities are included in the table except for the Amazing Agriculture Adventures event.

APPENDIX K

Entomological Society of Manitoba Report of the Archivist

No report. Position vacant.

APPENDIX L

Entomological Society of Manitoba Report of the ESM Student Awards and ESM Scholarship Committee

Student Achievement Award:

Awarded to a student who is in a Bachelor's degree programme or has recently completed a programme. This award recognizes students who have shown exceptional interest in entomology as evidenced by their insect collections, insect photography, published articles of entomological interest, insect experiments and/or outstanding contributions during summer employment.

This year's winner is Ms. Alicia Leroux. Alicia has completed a Zoology degree at the University of Manitoba and is nearing the completion of a B.Sc. in Agroecology with a minor in Entomology in the Faculty of Agricultural and Food Sciences at the University of Manitoba. Alicia has taken five entomology courses and expects to begin an M.Sc. degree in Entomology in spring 2011. Alicia has worked in a number

of entomological related summer jobs including the stored product unit at Agriculture and Agri-Food Canada, sampling for ectoparasites on birds and maintaining insect colonies at the entomology department at the University of Manitoba. Alicia has also worked for a summer at the CABI-Europe Swiss centre for biological control. She has presented a poster on biological control of weeds at an Entomological Society of Canada annual meeting as well as presenting a poster at the 2010 conference of the Weed Science Society of America.

Orkin/Swat Student Award:

This award is designed to foster and encourage student interest in general Entomology including natural methods of insect pest control and the proper use of insecticides. Candidates must have a demonstrated interest in entomology, superior scholastic ability, high research potential, originality and industriousness in their university courses and/or summer work.

This year's winner is Ms. Lindsay Geisel. Lindsay is taking a B.Sc. degree in Agroecology with a minor in Entomology in the Faculty of Agricultural and Food Sciences at the University of Manitoba. Lindsay has taken several entomology courses and is maintaining just under an A average. Lindsay is currently working with Dr. R. Currie in the Department of Entomology studying diseases of bees and their control.

The ESM Graduate Scholarship:

This scholarship is awarded to a student in an M.Sc. or Ph.D. programme in entomology at the University of Manitoba. Students must be enrolled in their graduate programme for at least 12 months prior to Oct 1 of the award year. This award recognizes superior scholastic ability, high research potential as evidenced by industriousness, good judgment, originality, a conscientious attitude and organizational ability, and excellent communication skills.

This year's winner is Mr. Suresh Desai. Suresh is enrolled as a Ph.D. candidate in the Department of Entomology at the University of Manitoba and is being supervised by Dr. R. Currie. Suresh received his B.Sc. in 2000 from the University Agricultural Sciences, Dharward, India and his M.Sc. in 2003 from the Tamil Nadu Agricultural University, Coimbatore, India. Suresh's research is to examine the effects of diseases on honey bee colony survival with a focus on genetic diversity and interactions of pathogens and bee management practices on colony survival.

Désirée Vanderwel, Joel Gosselin, Rhéal LaFrenière, Taz Stuart, Richard Westwood, Chair, October 23, 2010.

APPENDIX M

Entomological Society of Manitoba 2009-2010 ESM/ESC Joint Meeting: Fundraising Committee Report

The Fundraising Committee raised a total of \$24,615 (sponsorship list attached). The Fundraising Committee acknowledges the continued support of our sponsors in making this conference successful by providing funding to support quality speakers, symposia and refreshments for this very important educational event.

Kathy Cano, Chair
David Ostermann
Rhéal Lafrenière

| ESC/ESM 2009 Meeting - Donations as of December 1, 2009 | |
|--|--------------|
| Donor | Amount |
| Abell Pest Control | 100 |
| Arysta Life Sciences | 1000 |
| Beemaid Honey, Ltd. | 500 |
| Canadian Grain Commission | 500 |
| Coalition to Save the Elms | 300 |
| Crop Life Canada | 500 |
| Dimo's Tool and Die, Ltd. | 500 |
| Dow AgroSciences Canada | 1500 |
| Lotek Wireless Fish and Wildlife Monitoring | 500 |
| MacGregor Waxworks | 250 |
| Manitoba Agriculture, Food & Rural Initiatives | 1000 |
| Manitoba Sustainable Development Fund | 8273 |
| Manitoba Co-operative Honey Producers | 500 |
| Manitoba Rural Adaptation Council, Inc. | 5717 |
| Medivet Pharmaceuticals, Ltd. | 500 |
| Orkin PCO Services (speaker sponsorship) | 1000 |
| Poulin's Services | 125 |
| Syngenta Bioline, Inc. | 250 |
| United Agri Products Canada, Inc. | 1500 |
| V & L Distributors, Inc. | 100 |
| Total | 24615 |

APPENDIX N

Entomological Society of Manitoba Report of the Scientific Programme Committee

The 66th Annual meeting of the Entomological Society of Manitoba was held in Winnipeg on 22 (at the Freshwater Institute) and 23 October (at the Animal Science/Entomology Building). The theme of the meeting was “Monitoring Insect Abundance”. Forty-four people registered for the meeting. There were 22 presentations at the 2010 Entomological Society of Manitoba meetings.

Dr. Maya Evenden, from the University of Alberta, gave the keynote address titled “The use of pheromones for detection, prediction and multispecies monitoring of lepidopterous pests” on the morning of 22 October. This was followed by the submitted papers session. There were 17 submitted papers for the 2010 meetings. The submitted paper session began at 10:15 a.m. and continued through the afternoon of Friday 22 October and was chaired by David Ostermann and Bob Lamb. Eight of the papers were entered in the student paper competition. The judges of the student oral presentation competition were Barb Sharanowski, Désirée Vanderwel, and Wolly Wijayarathne. Sunday Oghiakhe was this year’s winner of the student paper competition. There were no poster presentations in this year’s meetings.

On the morning of 23 October, a symposium was held on monitoring insect abundance. Invited speakers and their topics in the symposium were:

- “City of Winnipeg’s Insect Control Branch, more than just mosquitoes: urban and invasive pest species surveillance and control programmes” by Taz Stuart, City Entomologist, Winnipeg;
- “Monitoring forest pests in Manitoba” by Irene Pines, Manitoba Conservation, Winnipeg;
- “Keeping tabs on insects in prairie crops – monitoring and predicting insect distribution and abundance” by Ross Weiss, Agriculture and Agri-Food Canada, Saskatoon; and
- “Finding a needle in the haystack: density estimation and detection of insects in grain silos” by Fuji Jian, Department of Biosystems Engineering, University of Manitoba.

A meet-the-speakers mixer was held on the evening of 23 October at the home of Bob Lamb and Pat MacKay.

The committee wishes to thank all the speakers for their excellent contributions to the meeting. Special thanks are extended to the many volunteers who assisted with the logistics of the meeting from helping out at the registration desk to operating audio-visual equipment and everything in-between.

Revenue from the meeting, which consisted of donations and registration, was \$2,270.00. Total expenses for the meeting were \$2,472.97. There was a net loss of \$202.97 from the meeting. Most of the expenses from the meeting were for the two invited speakers and food and beverages for the meeting and mixer. Printing costs came to a total of \$40.32.

In addition to myself, John Gavloski, the Scientific Programme Committee consisted of the following individuals: Noel White, Mahmood Iranpour, Brent Elliott, and Joel Gosselin (Chair, Fund Raising Committee). All members made significant contributions to the overall success of the meeting by providing intellectual input (i.e., helping to decide on meeting format, invited speakers, etc.) and invaluable assistance during the many tasks to run these meetings. As in previous years, Joel Gosselin single-handedly solicited funds to allow the meeting to take place. Congratulations are due to these individuals for a job well done.

John Gavloski, Chair

APPENDIX O

Entomological Society of Manitoba Report of the ESM Membership Committee

There are currently 91 members in the ESM, compared to 98 in November of last year. I would like to thank Ian Wise (Treasurer) for his careful record keeping of the membership.

Désirée Vanderwel, Chair

APPENDIX P

Entomological Society of Manitoba Web Site Report

The Entomological Society of Manitoba operates a web site that is currently hosted through the public access portion of Paul Field's personal University of Manitoba web page. The web site contains information about the Society and its committees, dates of meetings, programmes for meetings, and provides links to other sources of entomological resources on the web. In 2010, job postings for faculty positions in Entomology at the U of M and photos of an ESM sponsored field trip to Spruce Woods were added to the site. There has been interest on the part of some students to help update the "look and feel" of the site and this may result in further improvements in the coming year.

Copies of the newsletter and proceedings are typically posted shortly after they are released to the membership. PDF-reprints of papers that have been published in the proceedings are now available on the site and papers from back issues are posted for years dating back as far as 1989. These papers are picked up by many search engines and thus provide a wide exposure for the published research. Older papers will be posted if scanned pdf's are provided to the web master.

Any suggestions for additions or changes to the website should be forwarded to Rob Currie, Department of Entomology, University of Manitoba.

Rob Currie

APPENDIX Q

Entomological Society of Manitoba Election Report 2010-2011

Elections closed October 18, 2010 for the Entomological Society of Manitoba offices of President-Elect and Member-at-Large. The successful candidate for President-Elect is Lisa Capar and for Member-at-Large is Alicia Leroux. We thank all candidates for their willingness to participate in the election. Formal announcement and commencement of terms will be at and after the ESM Annual Business Meeting on October 23, 2010.

| | |
|-----------------------------------|----------|
| Colin Demianyk | Ian Wise |
| Chairperson, Scrutineer Committee | Witness |