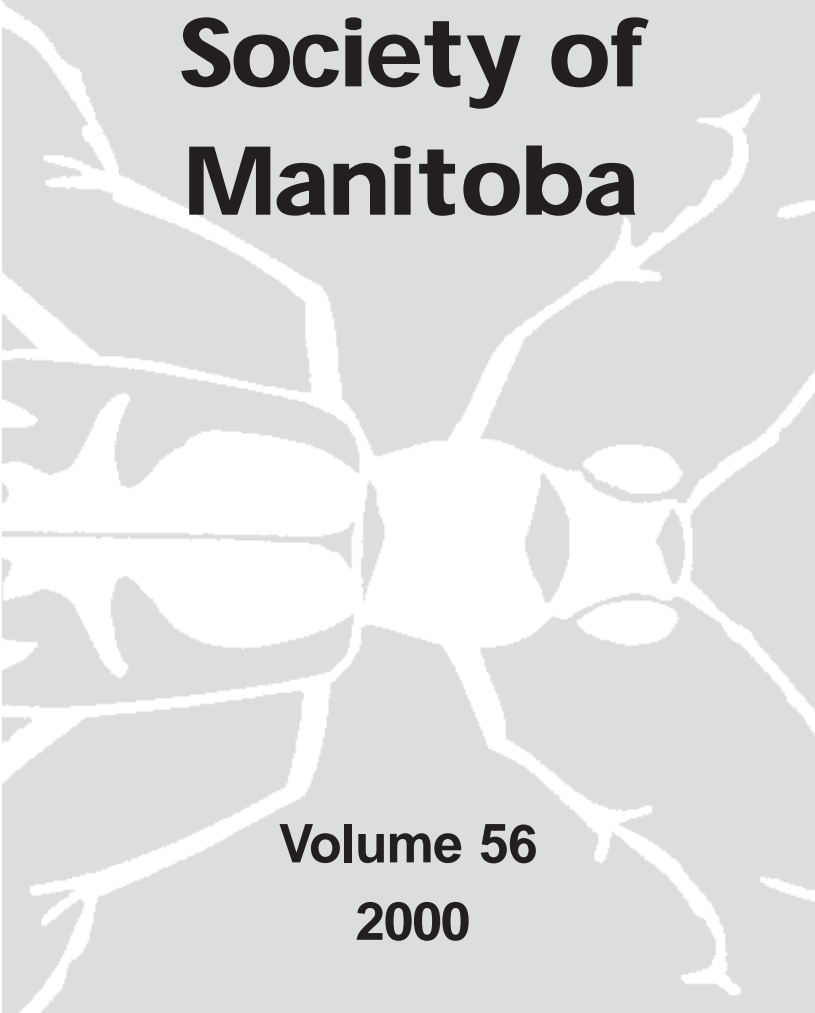


Proceedings  
of the  
Entomological  
Society of  
Manitoba



**Volume 53**  
**1997**

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Wings  
Zastita Bilja (Plant Protection)

Proceedings of the  
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**Editor**

**Winnipeg, Manitoba**



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**In Memory:**  
**Paul Klassen**  
**(1923–1998)**

Paul Klassen passed away in Carman, Manitoba on April 25, 1998 at the age of 74.

He was born in Ohrloff, Russia and moved with his parents to Canada in 1924. Paul grew up on a farm in southern Manitoba and was interested in all aspects of nature, especially butterflies. Since his retirement in 1981 Paul was devoted to studying butterflies. Over the years, he collected throughout Manitoba and elsewhere in western Canada amassing a meticulously curated collection of over 30,000 lepidopteran specimens.

In 1984 he published his Checklist of Manitoba Butterflies in the Journal of Lepidopterists' Society and served for many years as the society's provincial coordinator. In 1986 he received the Norman Criddle Award from the Entomological Society of Canada in recognition of outstanding work among amateur entomologists. Paul developed the original concept and was senior author of *The Butterflies of Manitoba* published in 1989. More recently Paul worked with school children providing talks and workshops on butterflies while devoting research time to his new book *From the Steppes to the Prairies*, a history of his family in Russia and Canada. In 1993 Paul was awarded an honorary life-time membership to the Manitoba Naturalists Society.

Prior to his death, Paul made arrangements for his collection to be transferred to The Manitoba Museum where the collection will be housed and made available for research and exhibition.

Among others, we, his co-authors, sadly miss our friend.

Dr. W. Brian McKillop  
Dr. William B. Preston  
Dr. Richard Westwood





# Scientific Program Abstracts for the 1997 Annual Meeting of the Entomological Society of Manitoba

7-8 November 1997, Winnipeg, Manitoba

## Keynote Address

**DON'T FENCE ME IN: HABITAT STRUCTURE CONSTRAINS THE IMPACT OF TENT CATERPILLAR PARASITOIDS.** Jens Roland, Department of Biological Sciences, University of Alberta, Edmonton, Alberta. T6G 2E9.

The study of insect population dynamics has been characterized recently by an increasing recognition of the importance of spatial variation in population processes and in temporal dynamics. This study examines the effect of large-scale habitat structure (forest fragmentation) on the processes which drive dynamics of the defoliator, the forest tent caterpillar. Long-term dynamics suggest that outbreaks of this insect last several years longer in fragmented forests than in large continuous forests. Because the cyclic dynamics of this insect are thought to be driven by natural enemies (parasitoids and pathogens), we test the hypothesis that forest fragmentation in some way de-couples tent caterpillar populations from their natural enemies.

## Symposium: *Foraging: From Pollen to Fish*

**GRASSHOPPER FEEDING AND ECOLOGY.** N. J. Holliday, Department of Entomology, Faculty of Agricultural and Food Sciences, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

In a simple arena, nymphs of the two-striped grasshopper, *Melanoplus bivittatus* (Say,) were observed to determine whether they learn to associate food with visually-perceived cues. Second stadium nymphs did not exhibit associative learning; however, third, fourth and fifth stadium nymphs did learn to associate cues with food. Third stadium nymphs learned to associate positional cues with food, but by the fifth stadium, light-related cues were used. The transition from no learning through

positional learning to light-related cues for learning is in accord with the changing needs of the nymphs with age. Young nymphs have limited mobility and appetite and their major requirement is to find a host plant of any sort. Older nymphs may completely consume the plant they are on, are mobile, and their survival is maximized on a mixed diet; consequently they are favoured by behaviour that allows them to locate novel food plants in unfamiliar environments.

Learned and innate visual cues are among the first in a series of stimuli used by foraging grasshoppers in detection, selection, and utilization of food. Olfactory cues may also play a part in detection and selection of food plants at a distance. Following arrival of grasshoppers on a plant, chemoreceptors on the palps provide assessments of host suitability, and further chemosensory assessments occur after exploratory biting. Post-ingestive feed-back can affect plant consumption through changes in meal length and frequency. Thus, the ecological interaction between vegetation and grasshoppers is the result of a complex interplay of insect behaviour and physiology.

**ORDERING TAKE-OUT FOOD FOR 60, 000: HOW HONEY BEES RESPOND TO COLONY DEMANDS FOR POLLEN.** S. F. Pernal. Dept. of Entomology, University of Manitoba, Winnipeg, MB. R3T 2N2.

The social nature of honey bee, *Apis mellifera* L., society provides us with an interesting opportunity to examine the integration of colony and individual level processes. The honey bee colony as a whole can be regarded as a unit of function and its responses to stimuli can be compared to those of individual bees. Nowhere in honey bee society is the interplay between these two levels of function more evident than in the collection of food. Honey bees collect nectar, water and pollen, but the regulation of foraging is only superficially understood. It is known that quantitative control over colony pollen intake is governed by the trophallactic interactions of young adult workers inside the hive. However, it is not known whether similar mechanisms of feedback operate for assessing pollen quality at the level of the colony, or whether individual foragers are independently capable of assessing this resource. Individual and colony-level responses to changes in the quantity and quality of pollen stored in the hive will be examined, and their implications for our understanding of pollen foraging will be discussed. Furthermore, criteria that may affect an individual bee's pollen foraging decisions will also be examined.

**BEHAVIOUR AS A TOOL FOR ASSESSING PARASITOIDS AS BIOLOGICAL CONTROL AGENTS.** P.G. Mason, Agriculture and Agri-Food Canada, 107 Science Place, Saskatoon, Saskatchewan S7N 0X2

The behavioural ecology of parasitoids provides opportunities not only to investigate problems in behavioural and evolutionary ecology but also it can be used to determine the suitability or the conditions for optimum performance of parasitoid

species or populations as agents in biological control programmes. In experiments on *Aphelinus asychis* Walker collected from China, France, and Morocco for release against *Diuraphis noxia* (Mordvilko) in North America, we studied the relationship between locomotion (i.e., mean and maximum walking speeds and proportion of time walking) and temperature to assess the appropriate population for introductions. We found that although mean and maximum walking speeds increased with temperature from 8.5 to 28.5°C they did not differ among geographical regions with different climates. In experiments on *Trichogramma inyoense* Pinto & Oatman we studied oviposition and temperature to determine the 'window' within which maximum parasitism of the target species, *Mamestra configurata* Walker, would occur. We found that at temperatures between 24 and 30 °C female *T. inyoense* parasitized the greatest number of eggs. In this temperature range two to three times more female than male parasitoids were produced while at temperatures outside this range greater numbers of males emerged.

**FISH FORAGING AND FOOD WEBS IN RELATION TO INSECTS. Ross Tallman**, Department of Fisheries, Freshwater Institute, Winnipeg.

I present an overview of the role of insects in fish food webs and their influence on the development of fish foraging patterns. The production of fish in freshwater is heavily dependent upon insects. Insects are more important in riverine than lacustrine systems. Within each of these systems they are more important in smaller ecosystems compared to larger ones. Insects can be central in the diet of juveniles and adults of many fish species. As a consequence, insects have shaped the evolution of form, life history and communities of fishes in freshwater.

## Submitted Papers

**THE ABILITY OF TERMINATOR TO IMPROVE THE EFFICACY OF CHLORPYRIFOS FOR CONTROLLING ORANGE WHEAT BLOSSOM MIDGE, *SITODIPLOSI MOSCELLANA*, INFESTATIONS OF WHEAT. D.M. Currey** and R. Becker, Ag-Quest, Inc., Minto, Manitoba, R0K 1M0 and Evergreen Liquid Plant Food, Oxdrift, Ontario, P0V 2J0.

Chlorpyrifos, which is used to control the adult and egg stages of the orange wheat

blossom midge, *Sitodiplosis mosellana*, has a high, acute mammalian toxicity and is very toxic to bees, fish, birds, aquatic organisms and other wildlife. The agricultural adjuvant, Terminator, which has been used with various insecticides to improve efficacy, was tested with chlorpyrifos, to determine its ability to improve the efficacy of chlorpyrifos in controlling orange wheat blossom midge in wheat. The addition of Terminator to the 100 gai/ha rate of chlorpyrifos resulted in a reduction of the number of plants infested with orange wheat blossom midge larvae compared to the 100 gai/ha rate of chlorpyrifos alone. The addition of Terminator to the 100 and 200 gai/ha rates of chlorpyrifos reduced the number of larvae per infested head, when treatments were applied by early flowering (Zadok's 62), compared with the 100 and 200 gai/ha rates of chlorpyrifos, respectively. The ability of Terminator to increase the efficacy of chlorpyrifos could promote a reduction in the rates of chlorpyrifos applications and reduce the environmental stress caused by this insecticide.

**SEASONAL ABUNDANCE OF WHEAT MIDGE, *SITODIPLOSIS MOSELLANA* (GÉHIN), IN MANITOBA. R.J. Lamb and I.L. Wise.** Cereal Research Centre, Agriculture & Agri-Food Canada, 195 Dafoe Road, Winnipeg, Manitoba R3T 2M9.

The seasonal abundance of wheat midge in Manitoba is investigated using a suction trap to catch flying adults and cone traps to catch adults emerging from soil. These data are compared, and assessed in relation to the levels of infestation of wheat spikes emerging on different dates. The suction trap shows that over 90% of dispersing wheat midge are female, although similar numbers of the two sexes emerge from the soil. Nearly all emergence and flight occurs in July, with 10% of the flight complete by July 9 and 50% by July 16. The growing degree-day requirements for 10 and 50% of the flight are 700 and 792, respectively, but do not account for as much variation as the day of the year. Infestation of wheat spikes occurs throughout the normal period of heading for the crop. The day to day variation in level of infestation depends on both the seasonal abundance of wheat midge and the seasonal change in availability of emerging wheat spikes. It is unlikely that manipulating heading date of wheat can be used effectively to reduce midge damage. The day to day changes in level of infestation of wheat are important for detecting escapes when screening wheat lines for resistance to wheat midge.

**SAMPLING PLANT BUGS (HETEROPTERA: MIRIDAE) IN CANOLA TO MAKE CONTROL DECISIONS. I. L. Wise and R. J. Lamb,** Agriculture and Agri-Food Canada, Cereal Research Centre, Winnipeg, Manitoba, R3T 2M9

Sweep-net sampling of field plots and commercial fields in southern Manitoba was used to develop sequential decision plans for plant bugs in canola. Sampling units of 10, 20, 50 and 100 sweeps per sample had variance-mean relationships with similar

slopes, but different intercepts and required different minimal sample sizes. Samples taken at the end of flowering and early pod development crop stages estimated sampling parameters with higher precision than a later crop stage. Sampling along the edges of commercial fields and at various distances into the fields gave similar estimates of plant bug density. Experienced samplers caught more plant bugs than inexperienced ones, but the difference was less pronounced in the edge samples. Sampling was most efficiently conducted by taking 20 samples of 10 sweeps per sample or 15 samples of 20 sweeps per sample along the edge of the field. A decision on the need to control plant bugs with a sampling unit of 10 or 20 sweeps can be completed in 28 to 35 minutes.

**SUSTAINABLE AGRICULTURE ON THE FARM—ARE PRODUCERS CHANGING PRACTISES? J.L. Buth**, Soils and Crops Branch, Manitoba Agriculture, Box 1149, Carman, Manitoba R0G 0J0

The Canada-Manitoba Agreement on Agricultural Sustainability was initiated in 1993 to facilitate the adoption of effective resource management practises. In 1997 the Advisory Group conducted a survey to determine if changes in attitudes and farm management practises occurred over the duration of the agreement and if CMAAS had any influence on these changes. Sustainable agriculture issues such as soil conservation, water quality, pest management, wildlife habitat and management of agricultural waste were examined.

Producers indicated that the most serious sustainable agriculture issue was the proper disposal of agricultural waste, such as used oil and pesticide containers. The next most serious issues were soil related, followed by water pollution from fertilizer and pesticide use. Pest management, wildlife habitat and water contamination from manure were very serious issues on a small percentage on farms. Twenty-two percent (22%) of producers stated that their concerns with pest management had grown over the last five years.

Eight-six percent (86%) of producers indicated that they have adopted at least one of thirty-five sustainable agriculture practices and 11% of the practises currently in place on Manitoba farms can be attributed to agreement. The majority of producers indicated they were using pesticide application practises to protect water quality, including avoiding spraying near bodies of water, avoiding spraying in winds over 20 km/hr and calibrating their sprayer. The number of producers which had adopted these practises increased over the last five years in all areas of the province.

**EVALUATION OF AN INTEGRATED MANAGEMENT APPROACH FOR THE CONTROL OF PURPLE LOOSESTRIFE: BIOLOGICAL CONTROL AGENTS AND HERBICIDES, Donald C.Henne**, Department of Entomology, University of Manitoba, Winnipeg, MB, R3T 2N2

Purple loosestrife, *lythrum salicaria L.*, is an invasive emergent perennial dicot that forms large monotypic stands. It displaces native plant species that normally provide food, cover, and breeding areas for many species of wildlife. The use of herbicides together with the introduced biological control insect *Galerucella californiensis* (L.) (Coleoptera: Chrysomelidae) may potentially expedite purple loosestrife management efforts. Field experiments are currently being conducted inside large cages in an established purple loosestrife stand to determine the effectiveness of single techniques (herbicides or beetles alone), and combinations of techniques (herbicides and beetles together in various combinations). The herbicides being evaluated are glyphosate and triclopyr amine. Preliminary results from the 1997 field season are presented.

**BIOLOGICAL CONTROL OF PURPLE LOOSESTRIFE, *LYTHRUM SALICARIA L.*, IN SOUTHERN MANITOBA: FACTORS AFFECTING MORTALITY OF THE INTRODUCED BIOLOGICAL CONTROL AGENTS *GALERUCELLA CALMARIENSIS*, (L.) AND *G. PUSILLA* (DUFTS.) (COLEOPTERA: CHRYSOMELIDAE) J. K. Diehl and N. J. Holliday, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.**

Factors contributing to the mortality of the introduced biological control agents, *Galerucella californiensis* (L.) and *G. pusilla* (Dufts.) in southern Manitoba include the harsh prairie winter and the predatory stink bug, *Apoecilus bracteatus* Fitch. (Hemiptera: Pentatomidae). Since their successful introduction and establishment in 1992, the stink bug, *A. bracteatus* has been identified as a potentially important larval predator of both species. Within study sites, nymphs of this predatory stink bug were commonly observed with *Galerucella* spp. larvae impaled on their mouthparts. In response, a field cage study was conducted at the University of Manitoba using *Galerucella* spp. larvae and *A. bracteatus* nymphs collected from the field. Results of this study will be presented, exposing the predatory ability of this stink bug. Another factor contributing to mortality of *Galerucella* spp. is prolonged low temperature exposure or winter. Unfortunately, no information is available on the overwintering ability of *G. californiensis* and *G. pusilla* in southern Manitoba. In response, overwintering cages were set-up in four sites containing established, mixed-species releases. *Galerucella* spp. recovered from each cage were sexed, identified to species, marked, and reintroduced into the cage from which they were collected. In the following spring, cages were replaced in the same location and remained until all adult *Galerucella* spp. emerged from the soil. Adults were brought back to the laboratory, sexed, identified to species and checked for marks. Data will be presented on the recovery of marked adults of both *Galerucella* species from the four sites.

**IMPACT OF HABITAT DISTURBANCE ON AQUATIC INSECT COMMUNITIES OF CHURCHILL, MANITOBA (COLEOPTERA: GYRINIDAE, HALIPLIDAE, DYTISCIDAE, HYDROPHILIDAE, HYDRAENIDAE).**

**Heather White**, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2

The primary objective was to determine the effect of anthropogenic disturbance on northern aquatic ecosystems. Human activities, in fragile environments, have resulted in environmental disturbance that affect the numbers and kinds of species living in these communities. Insect communities are often sensitive to disturbance because of their specific habitat requirements; therefore, changes in insect community structure may be a reflection of specific kinds of environmental impact.

At Churchill, three kinds of impacted sites were chosen for study (tire ruts, a gravel quarrie, and tundra buggy tracks). These sites were compared to unimpacted sites. Aquatic insects, vegetation, and water chemistry (pH, conductivity and temperature) were recorded at all sites during July, 1997. Aquatic beetles belonging to the families Gyrinidae, Haliplidae, Dytiscidae, Hydrophilidae and Hydraenidae were analyzed for species composition and community structure. General trends among impacted sites and non impacted sites will be discussed. The implications of these kinds of disturbance on northern development will be considered.

**CORRELATED RESPONSE IN THE PROPORTION MACROPTEROUS WHEN SELECTINGFOR A DECREASE IN FECUNDITY IN THE SAND CRICKET, *GRYLLUS FIRMUS*.**

**James Tucker**, Department of Biology, Concordia University, Montreal, Quebec, H3G 1M8

Optimal life histories result from trade-offs between the separate components of fitness. Trade-offs, represented by genetic correlations among fitness characters, may constrain evolution as they may severely impede the rate at which traits may independently evolve. Wing dimorphisms, in which one morph (micropter) has reduced wings and can not fly while the other (macropter) possesses fully developed wings and cranefly, commonly occur within several major orders of the Insecta (Orthoptera, Hemiptera, Homoptera, Coleoptera). The existence of such wing dimorphisms implies a cost is associated with the production and /or maintenance of the flight apparatus, as winged forms need not migrate. Wing-dimorphic insects can easily be classified with respect to their migratory aptitude, therefore these species represent excellent study organisms for the investigation of the genetic basis of trade-offs of migratory ability and other components of fitness. Within wing-dimorphic insects, the micropter generally reproduces earlier and possesses a larger fecundity than the macropter. Artificial selection for decreased fecundity imposed within a population of the wing dimorphic cricket, *Gryllus firmus*, produced an indirect increase in the proportion macropterous. Within *G. firmus* the confirmed correlated response establishes a genetic basis for the phenotypic trade-off commonly observed in wing dimorphic insects. Any evolution in migratory tendency will be coupled by an antago-

nistic decrease in fecundity. Additional genetic analyses conducted on different species, are needed to fully discern the common influence of genetic correlation on the integration of traits.

**PORTABLE DESERTS FOR CONTROLLING INSECTS IN BUILDINGS, Paul G. Fields**, Cereal Research Centre, Agriculture & Agri-Food Canada, 195 Dafoe Road, Winnipeg, Manitoba R3T 2M9. email: pfields@em.agr.ca

Methyl bromide is used extensively to control insects in food processing facilities. It is slated to be phased-out by the year 2001 in Canada and the United States because it causes significant damage to the Earth's ozone layer. As a possible replacement for methyl bromide I conducted tests on using diatomaceous earth combined with heat. In commercial scale tests, a synergistic effect of diatomaceous earth (Protect-It, an EDE) and heat was shown. The insects died faster and at lower temperatures. A field trial was conducted using diatomaceous earth (Protect-It) at the Quaker Oats plant in Peterborough, Ontario, Canada during their regular heat treatment on March 14-16, 1997. Protect-It™ was applied using a commercial power duster at a rate of 1-2 g/m<sup>2</sup>, or by measuring EDE into rings at 1, 3, or 7 g/m<sup>2</sup>. Insects were completely controlled in the Protect-It and heat treatment after 13-22 hours or when temperatures reached 41°C. Insects that were exposed only to the heat died after 32-38 hours or when temperatures reached 46 to 47°C. The use of heat and Protect-It™ offers good prospects for success as an alternative to methyl bromide. These results imply that the cost of heat treatment can be reduced and effectiveness improved through the combined use of heat and EDE. We recommend further work to demonstrate the usefulness of this combination technique on a larger scale.

**PASSIVE SURVEILLANCE FOR THE BLACK-LEGGED TICK, *Ixodes scapularis*, IN MANITOBA DURING 1996 AND 1997. T.D. Galloway**, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

The black-legged tick, *Ixodes scapularis*, was first recorded in Manitoba in 1989. It is a primary vector of *Borrelia burgdorferi*, the causative agent of Lyme Borreliosis in North America. Despite considerable effort to learn more about the distribution and abundance of this tick subsequent to its discovery in the province, relatively few specimens had been collected. A passive surveillance program was initiated in 1996, in conjunction with Manitoba Health, where posters and news media advertisements were used to solicit ticks collected by the public as well as medical and veterinary practitioners. As a result, the total number of *I. scapularis* reported for Manitoba was nearly doubled in 1996 alone. All ticks submitted were adults, and their seasonal occurrence was consistent with what is known about *I. scapularis* elsewhere in North America. They were collected most frequently in the fall, notably October, while lesser numbers were collected in the spring and early summer. More than half the



specimens were collected from dogs, but cats and humans are frequent hosts. The first isolation of *B. burgdorferi* for Manitoba was made by Laboratory Centre for Disease Control personnel, Health Canada, Ottawa, from a specimen collected in Winnipeg in 1996.

**PROBLEMATIC POPULATIONS BELONGING TO THE GENUS *BRYCHIUS* THOMSON (COLEOPTERA: HALIPLIDAE).** Rob Roughley, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2

Members of the genus *Brychius* Thomson are algavores which are specialized structurally for life in interstitial gravel of unshaded sections of larger streams and rivers. There is one widespread Palearctic species, *B. elevatus* (Panzer), and four Nearctic species, *B. pacificus* Horn (California), *B. horni* (British Columbia south to northern California), *B. albertanus* Carr (southern Alberta to Wyoming) and *B. hungerfordi* Spangler (Michigan and Ontario). Specimens from either end of the ranges of these species are easily assignable to the appropriate taxon. Recently representatives of outlier populations have become available for study. Specimens from Fort McMurray, Alberta are somewhat different from those at the nearest sites at Calgary, Alberta or Cypress Hills, Saskatchewan (*B. albertanus*) and collecting sites are separated by a minimum of 420 miles. Even more enigmatic is a population from the Riding Mountains region of Manitoba. This population occurs in an atypical habitat (small, shaded tributary stream), is markedly distinct from the nearest known population (*B. hungerfordi* - Upper Peninsula, Michigan) yet may be related to the Fort McMurray or Cypress Hills populations. These outlier populations may represent isolated relict populations which colonized streams along the margin of retreating Wisconsinan glaciers. Presently the Manitoba population may be under threat from development.



# Minutes of the 53<sup>rd</sup> Annual Meeting of the Entomological Society of Manitoba

12:10 h, November 8, 1997  
Freshwater Institute  
Winnipeg, Manitoba

The President T. Galloway presided.

With a quorum being present, the President called the meeting to order.

## Attendance

Executive: T. Galloway, President  
J. Buth, President-Elect  
R. Roughley, Regional Director to the ESC

Executive Staff: M. H. Smith, Treasurer  
R. Lafreniere, Editor - Newsletter  
I. Wise, Secretary

Executive members absent from the meeting were R. Currie,  
Past-President, and D. Vanderwel, Proceedings Editor.

Members: D. Currey P. Fields  
W. Galloway J. Gavloski  
J. Gosselin D. Henne  
N. Holliday R. Lamb  
P. MacKay S. Payne  
S. Pernal N. White

## 1. Agenda (Appendix A)

Motion: White/MacKay. That the proposed agenda of the 53<sup>rd</sup> Annual General Meeting of the Entomological Society of Manitoba be accepted. CARRIED

## 2. Acceptance of the minutes.

Motion: Roughley/MacKay. That the minutes of the 52<sup>nd</sup> Annual General Meeting of the Entomological Society of Manitoba be accepted. CARRIED

## 3. Business arising from the minutes.

Amendments to the Endowment Fund to be discussed by Executive Committee.

## 4. Executive Reports

Motion: Holliday. That all Executive Reports be accepted. CARRIED

**President** (Appendix B). T. Galloway reports that M. H. Smith (Treasurer), B. Timlick (Secretary), R. Roughley (Regional Director), R. Westwood (Proceedings Editor), and R. Lafreniere (Newsletter) have resigned. The Society thanked all those who contributed their time and effort. T. Galloway requests need for a member to assume Chair of the Newsletter.

**Treasurer** (Appendix C). J. Gosselin asks if there is a fee to transfer money to T bill account. M. Smith states that there is no costs to open the account. President asks if there are any restrictions to cashing the T bills. M. Smith says the T bills can be cashed anytime.

**Regional Director to the ESC** (Appendix D). President asks if the Criddle Award was given this year. N. Holliday states that no award was given. Lack of communication between the ESC and the Entomological Society of America mentioned as probable cause. P. Fields inquires about status of the Memoirs. N. Holliday states that this will be the last year the ESC will pay to publish the Memoirs. Further publications will have to be borne by the authors.

**Editor of the Proceedings** (Appendix E). R. Roughley states that new species identifications have to be submitted on the original manuscript to be accepted as a publication. N. Holliday questions whether this will limit interest in publishing in the ESM Journal. N. White answers that since it still is a refereed journal, this should not be a restriction. S. Pernal voices concern about the quality of the photocopies be maintained. President indicates that the quality of the photocopying should not be a problem.

**Endowment Fund Board** (Appendix F). S. Pernal inquires about alternative investments. M. Smith states that investigations have been made but were not pursued because annual income is needed for expenses. President asks if charitable status of Society limits the type of investments. M. Smith outlines charitable society limits on investment and fund raising. R. Roughley suggests Endowment Fund limits be raised. R. Lamb requests proper procedures for increasing the Endowment Fund be spelled out. N. Holliday recommends Endowment Fund Board investigate partial investments in other areas.

## 5. Committee Reports

**Finance** (Appendix G). N. Holliday clarifies that \$1500 in Annual General Meeting expenses last year assumed by the Faculty of Agriculture and Food Science, University of Manitoba covered \$1200 in travel costs and \$300 for mailing and printing. P. MacKay questions whether the policy on restricting AGM deficits be maintained. P. Fields states that he found policy to be a restraint, and voices concern about whether fund raising is allocated to AGM. M. Smith states that funding allocated for AGM is made available before meeting, and fund raising for AGM has been separated from other fund raising revenues. N. Holliday states that AGM is considered to be the most important event to members and should not be constrained financially. Also later expenses for AGM have been approved in the past. J. Both adds that expenses of AGM should be

better defined in light of recent AGM surpluses. R. Roughley questions the differences in projected vs. actual expenses. M. Smith points out that the differences are due to the allocation of expenses from last year to this year because of the lateness of the receipts. M. Smith also states that a change to charitable society status will require all financial receipts to include the charitable number.

**Publicity/Newsletter** (Appendix H).

**Social** (Appendix I). Society thanks D. Zebrowski for her efforts.

**Education/Youth Encouragement** (Appendix J).

**ESC Common Names/Archivist** (Appendix K). P. Fields inquires about the cost of the diskette. R. Roughley says no decision has been made by the ESC. P. MacKay asks if the common names of ticks are on the diskette. R. Roughley states that he does not know.

**Student Awards** (Appendix L).

**ESM Scholarship** (Appendix M).

**Scientific Programme** (Appendix N). P. Fields indicates over 40 attended AGM and Jason Diehl won presentation award. Report to be submitted later for Proceedings. R. Lamb asks if there is a continuous record of attendance. N. Holliday requests attendance be included in minutes. Society thanks P. Fields and his committee for their effort.

**Fund Raising** (Appendix O). J. Gosselin requests members to submit names of potential sponsors. N. Holliday asks a list of donors be included in the report. R. Lamb questions the possible sale of items, e.g. sweep nets, sticky traps, etc. through the Society. M. Smith states that the Society can not be involved in business ventures that generate large increases in revenue without affecting its status as a charitable society. N. Holliday mentions that he is aware of other charitable organizations that sell items to nonmembers.

**Honourary Members** (Appendix P).

**Membership** (Appendix Q).

## **6. Election Results.**

President Elect - M. H. Smith

Regional Director - R. Lamb

Member-at-large - G. Gill

Motion: N. White/T. Galloway that all ballots to be destroyed.

CARRIED

## **7. Transfer of Office.**

T. Galloway calls upon J. Buth to assume the office of President.

**8. Other Business.**

Motion: MacKay/Holliday that D. Nicholson be reappointed as auditor for the Entomological Society of Manitoba.

CARRIED

N. Holliday indicates change in date for AGM next year is needed to avoid conflict with ESC AGM. J. Buth states information on alternates dates to be sent to Programme Committee.

**9. Adjournment.**

# APPENDICES

## **Appendix A: Agenda of the Entomological Society of Manitoba 53rd Annual Business Meeting.**

8 November, 1997  
Freshwater Institute, Winnipeg, Manitoba

1. Acceptance of the agenda.
2. Acceptance of the minutes of the last Annual Meeting (7 November, 1996).
3. Business arising from the minutes.
4. Executive Reports

President	T. Galloway
Treasurer	M. Smith
Regional Director to ESC	R. Roughley
Editor of the Proceedings	D. Vanderwel
Endowment Fund Board	G. Gerber
5. Committee Reports

Finance	G. Gerber
Publicity/Newsletter	R. Lafrenière
Social	D. Zebrowski
Education/Youth Encouragement	D. Henne
ESC Common Names/Archivist	R. Roughley
Student Awards	B. Gallaway
ESM Scholarship	P. Mackay
Scientific Program	P. Fields
Fund Raising	J. Gosselin
Honourary Members	R. Currie
Membership	S. Pernal
6. Election Results
7. Transfer of Office
8. Other Business
9. Adjournment

## **Appendix B: Report of the President**

In the year after the Society's 75th anniversary, things have settled down again and entomologists have continued on their ways. There have been a number of activities of note, not all of which involve the Society directly, but which are a fair indication that our discipline is alive and well.

First of all, Mike Malyk, librarian at the Agriculture and AgriFood Canada Research Station, indicated to the Executive that there will be changes in their library organization. With the upcoming retrofit for the facilities and changes in research priorities, there is little space available for the journals which ESM has obtained on exchange with other agencies around the world. Many of these journals are obscure and difficult to obtain by other means. The Executive initiated the transfer of these materials to the University of Manitoba Library for Science and Technology. Mike and Judy Harper, head librarian for the Science Library, are going to work together to see that the transfer is made smoothly and that all materials will be available to members in the future.

Interest rates have plunged in recent years, and the decreased revenue generated by investments will have a major impact on Society activities. In the past year, George Gerber, Marj Smith and Ian Wise of the Finance Committee and Endowment Fund Board have done a tremendous amount of work, analyzing the best financial strategy for the Society in the years ahead. I would like to thank them for their contribution, and we will all hear the details of their recommendations in their upcoming reports. I should also mention that the financial records for the Society have been moved, and are now stored in the vault in the Department of Entomology at the University of Manitoba.

In 1997, Reiny Brust was elected as ESM's newest Honourary Member. Reiny and Anne are now living in British Columbia, and we extend our congratulations to Reiny, and wish them all the best.

There have been a number of interesting entomological developments during 1996-97. Jason Diehl and Rob Roughley initiated an expedition to Cedar Lake to search for 75 million year old fossil insects in amber deposited on the lake shore. This event was advertised through the Newsletter and all those who went along on the voyage had a marvelous time. Jason reported on the details of the trip in the most recent Newsletter. Bob Wrigley, curator at the Assiniboine Park Zoo, has continued to host the popular "Beetle Night" at his home, where anyone interested in beetles can meet informally to discuss their passion with the group. Jim Duncan, with the Conservation Data Centre, Manitoba Department of Natural Resources, has involved several Manitoba entomologists to compile lists of various insect groups, and to assess the status of each species in the province. The butterflies and tiger beetles are among the better known taxa in Manitoba, where there is considerable interest among amateur and professional entomologists. Lists for these species are available, and data are being compiled and generated to determine whether the occurrence of any species is threatened or endangered. There are even plans for field trips to supplement existing data. The Youth Encouragement and Education Committee had a very busy year, and students in the Department of Entomology, in particular, made visits to schools and



special interest groups to spread the word about the value and excitement in studying Entomology. If anyone cares to visit the coffee room in the Department of Entomology, you can witness the creative output of some of the children who enjoyed the presentations. These are just a few of the entomological activities that occupy the attention of some ESM members throughout the year. I think that this is good evidence of the interest and enthusiasm that lies in entomologists in Manitoba, and this bodes well for the future.

I would like to thank all the committee chairs and committee members who worked so hard this year to help keep the Society healthy and running smoothly. I would especially like to thank Marj Smith for her contributions to ESM during her time as Treasurer. Her attention to details and care with the accounts are very much appreciated. Blaine Timlick has stepped down from his position as Secretary, and I would like to thank him for his efforts and support during his time in office. Neil Holliday's term as Regional Director ended this year, and I would like to thank him for his time and effort to keep ESM members informed about the operations of ESC and for representing ESM at the national level. I think that Rob Currie deserves a special vote of thanks as he leaves the ESM Executive Committee. He served ESM through a difficult time. We also saw the transition in Society editorial staff this year. I would like to thank Richard Westwood who has been the Proceedings editor, and Rhéal Lafrenière, the editor of the Newsletter for their contributions.

*T. D. Galloway, President*

**Appendix C: Report of the Treasurer****DOUG NICHOLSON & CO.,  
Certified General Accountant****AUDITOR'S REPORT**

To the Members of the  
Entomological Society of Manitoba Inc.

I have examined the balance sheet of the Entomological Society of Manitoba Inc. as at August 31, 1997 and the statement of income and expenses for the year then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I consider necessary in the circumstances.

In common with many non profit organizations, the organization derives some cash revenue, the completeness of which is not susceptible to conclusive audit verification. Accordingly, my verification of these revenues was limited to the amounts recorded in the records of the organization and I was not able to determine whether any adjustments for unrecorded receipts from these sources might be necessary to income or surplus balances.

In my opinion, except for the effect of any adjustments, if any, which I might have determined to be necessary had I been able to satisfy myself concerning the completeness of the cash revenues referred to the above, these financial statements present fairly the financial position of the society as at August 31, 1997 and the results of it's operations and the changes in it's financial position for the year then ended in accordance with generally accepted accounting principles.

Winnipeg, Canada  
October 1, 1997

Original signed by  
Doug Nicholson & Co.,  
Certified General Accountant

**ENTOMOLOGICAL SOCIETY OF MANITOBA INC.**

**BALANCE SHEET**

**AS AT AUGUST 31, 1996**

**ASSETS**

<b>CURRENT</b>	<b><u>1997</u></b>	<b><u>1996</u></b>
Cash in bank	\$ 3,068	\$5,100
Cash advances (note 2)	250	250
Canadian T-Bill fund (note 4)	3,034	--
Investments (note 3)	33,004	30,004
	<b>39,356</b>	<b>35,354</b>

**LIABILITIES**

Liabilities	nil	nil
-------------	-----	-----

**SURPLUS**

Surplus	39,356	35,354
	<b>\$ 39,356</b>	<b>\$ 35,354</b>

**APPROVED BY THE BOARD:**

\_\_\_\_\_ Director

\_\_\_\_\_ Treasurer

**The accompanying notes form an integral  
part of these financial statements**

**ENTOMOLOGICAL SOCIETY OF MANITOBA INC.****STATEMENT OF INCOME****YEAR ENDED AUGUST 31,1996**

<b>REVENUE</b>	<b>1997</b>	<b>1996</b>
Annual meeting	\$ 1,944	\$ 1,517
Donations	900	--
Fundraising committee	867	212
Interest income	2,216	2,214
Members fees	2,160	2,047
Miscellaneous	308	966
Proceedings	471	431
Youth encouragement & public education	200	--
	<hr/>	<hr/>
	9,066	7,387
 <b>GENERAL EXPENSES</b>		
Awards and scholarships	\$ 1,440	\$1,200
Donations	--	500
General	803	965
Fundraising	634	--
Meetings	1,757	2,524
Newsletter	204	167
Other committees	--	49
Proceedings	--	1,426
Social committee	164	154
Youth encouragement & public education	62	298
	<hr/>	<hr/>
	5,064	7,283
 <b>EXCESS (DEFICIT)</b>		
OF INCOME OVER EXPENSES	<b>\$4,002</b>	<b>\$ 104</b>
Add: Surplus, beginning of year	35,354	35,250
	<hr/>	<hr/>
<b>SURPLUS, END OF YEAR</b>	<b>\$39,356</b>	<b>\$ 35,354</b>

**The accompanying notes form an integral  
part of these financial statements**

**ENTOMOLOGICAL SOCIETY OF MANITOBA INC.,  
NOTES TO THE FINANCIAL STATEMENTS**

**AUGUST 31, 1997**

**1. 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. Capital assets are written off when acquired and, therefore, there are no annual depreciation allowances.

**2. CASH ADVANCES:**

Treasurer	M. Smith	\$ 25
Editor - Newsletter	R. Lafreniere	200
Advance	R. Westwood	25
		\$250

**3. INVESTMENT CERTIFICATES:**

Certificate	Interest Rate	Maturity Date	
25723148	8.000%	Dec 15, 1997	3,024
25723170	7.250%	Apr 5, 1999	2,000
25723236	8.000%	Nov 12, 1999	9,200
25723324	5.250%	Dec 11, 1998	3,000
25723368	6.375%	Sep 16, 1998	2,004
25723412	3.000%	Dec 19, 1997	6,000
25723379	7.500%	Jan 26, 1998	1,776
25703249	5.250%	Feb 26, 2002	3,000
25723434	7.500%	Oct 31, 1997	<u>3,000</u>
			\$33,004

**4. INVESTMENT - T-BILL FUND:**

The Canadian T-Bill fund was opened on February 26, 1997 with a principal balance of \$3,000. Investment income earned in the current year was \$34.43.

**E.S.M. Financial Committee Meeting - 30 October, 1997****Treasurer's Supplement to the Auditor's Report****REVENUES:**

## 1. Interest Income:

G.I.C. interest was \$2,160.38. Interest from the bank account was \$20.41. Interest from the T-Bill Fund was \$34.43.

## 2. Miscellaneous Income:

This includes the SWAT Award of \$100.00, the G.S.T. rebate of \$126.17, and Social Committee income of \$82.00.

## 3. General Expenses:

Auditor	\$642.00
Secret., Treas. Postage & Photocopying	145.50
Corporations Fee	15.00

## 4. Travel costs of \$19.60 for the Y.E. &amp; P.E. Committee and printing costs of \$109.44 for the Newsletter Committee were incurred in the 1996-97 fiscal year but were not paid out until the current fiscal year. Publication of Volume 52 (1996) of the Proceedings was budgeted for in 1996-97 fiscal year but did not take place until the current fiscal year.

## 5. Bank Accounts:

On 26 Feb., 1997 the Endowment Fund, which is invested in G.I.C.s, was moved from the Grant Park branch of Royal Trust to the Downtown branch at 330 St. Mary Ave., where we have our chequing account. This was done for convenience, to consolidate all our accounts at the one branch.

On the same day, \$3,000.00 was transferred from general revenues to the Endowment Fund (see Balance Sheet of Auditor's Report).

Also on 26 Feb., 1997 a Canadian T-Bill Fund account was opened at the same branch, with an opening investment of \$3,000.00 of general revenues (see Balance Sheet).

## 6. Memberships:

Membership has been stable over the past year, remaining at 106 members from a year ago. As of 31 Aug., 1997, we had 7 honorary, 5 lifetime, 75 regular and 19 student members. Over the 1996-97 fiscal year we had 13 new members join the Society and 13 membership withdrawals.

**Appendix D: Report of the ESC Regional Director to the Annual Business Meeting.**

In 1997, the Entomological Society of Canada's annual meeting was held in Edmonton, AB and it was well attended. The 1998 ESC meetings will be held in Quebec City, 31.Oct.-4.Nov, the 1999 meetings will be held in Saskatoon, SK and the 2000 meetings which will be held in conjunction with the Entomological Society of America will be in Montreal.

The 1997-8 President of the ESC is Dr. Hugh Danks. The Society's secretary is Dr. Peggy Dixon and Dr. Gary Gibson is the treasurer. The Bulletin Editor is Dr. Hugh Barclay. Dr. Peter Kevan is currently the scientific editor of the Canadian Entomologist and he will be replaced by Dr. Jean Turgeon as of 1.Jan., 1998. The 1997 Gold Medal was awarded to Dr. Peter Harris and the C. Gordon Hewitt Award was given to Dr. Jacques Brodeur. Additional ways to emphasize the Criddle Award were considered and ESC is attempting to increase the status of this award by covering the travel expenses of the Criddle Award recipient.

The ESC has completed a major restructuring which was designed to reduce costs, increase membership and to streamline operations of the society (see PESH, 52: 53). One result of the restructuring is the transfer of printing of The Canadian Entomologist to the National Research Council Research Press; the publisher of record remains the Entomological Society of Canada. The final Memoir of ESC which is on "microbial Control of Grasshoppers and Locusts", edited by M.S. Goettel and D. Johnson will be mailed before the end of 1997. Back issues of the Memoirs are now available for sale as individual items and these are advertised on the ESC web site.

The ESC, as well as several regional affiliates, have established home pages on the world wide web. On the ESC home page there is a button for each regional society and the Entomological Society of Manitoba might wish to develop its own web page which can be associated with this site. Also, some societies are posting their Newsletters on the web with connections through the ESC home page. The ESC website address is: <http://www.biology.ualberta.ca/ecs.hp/homepage.htm>.

R.E. Roughley  
Acting Regional Director.

**Appendix E: Report of the Editor of the Proceedings**

Two hundred and fifty copies of Volume 52 (1996) of the *Proceedings of the Entomological Society of Manitoba* were printed in September, 1997. Volume 52 was 64 pages long, and contained 3 refereed scientific papers (comprising 18 of the 64 pages). In October, 106 copies were mailed to Society members, 38 copies were mailed to subscribing institutions, and 54 copies were mailed to institutions that exchange their journal with ours or receive the *Proceedings* as a gift. (The Titles that we receive in exchange are listed on the inside front cover of Volume 52.) As directed by the

Finance Committee, the price charged to subscribers was raised to \$10.00 (Canadian) per copy, up from \$8.00.

The format was changed slightly from previous years, in order to reduce the cost of producing the *Proceedings* (on the request of the Finance Committee). The size was reduced from about 6.5" x 8.5" to about 5.5" x 8.5". This allowed the journal to be produced by photocopier (using standard 8.5" x 11" paper) rather than by printing press, which a substantial (50%) reduction in cost. Several people have commented on the shadowing of the print on some pages: I would appreciate feedback as to whether the savings in costs are worth this reduction in quality. (I am not sure why this occurred...I am still discussing the matter with the printers. It may be possible to avoid this problem in future.) In addition some items were printed on the inside cover in order to keep the binding costs at a minimum (a more expensive type of binding is required if the number of pages exceeds 64).

This was my first year as Editor of the *Proceedings*. I would like to thank Richard Westwood, my predecessor, for passing the *Proceedings* on in such excellent condition. There was a very organized "system," records were meticulously maintained, and the filing system was very complete. His efforts on behalf of the Society are to be highly commended, and his organizational skills certainly made my job easier. I would also like to thank everyone involved with Volume 52 — particularly the authors, the anonymous reviewers, Blaine Timlick (Secretary), Marjorie Smith (Treasurer), Terry Galloway (President, Scientific Program Chair, and contributing author), and Warren Schuetz (graphic designer of this journal) — for their efforts and patience as I "learned on the job."

I will strive to improve the quality of our publication, and I would appreciate suggestions and/or comments from Society members in this regard.

Désirée Vanderwel  
Proceedings Editor

#### **Appendix F: Report of the Endowment Fund Board**

The Endowment Fund provides a basis for funding the Student Scholarship (\$1,000.00) and the publication of the *Proceedings* (\$850.00). Also, the Fund contributes approximately \$500.00 toward the costs associated with the Annual General Meeting of the Society. Therefore, the Endowment Fund is committed to about \$2,350.00 annually.

The Endowment Fund Board met on 27 January, 1997 to review current investments and to develop short-term and long-term investment strategies. The Board projected that if the Endowment Fund was kept at \$30,003.96 and if the guaranteed investment certificates were re-invested at 5% for 5-year terms, this fund would generate only about \$1,500.00 by the fiscal year 2000/2001. Following this meeting, the Executive approved that \$3,000.00 be taken from general revenue and be invested in a new guaranteed investment certificate for a 5-year term, and that money be taken from



general revenue and invested in Royal Trust T-Bill Money Market Mutual funds on a short-term basis. These two actions will generate \$200.00 - \$250.00 of additional investment income during the 1997-1998 fiscal year.

The Endowment Fund Board met again on 30 October, 1997 and recommends that if there are sufficient funds in general revenue, G.I.C. # 25723368 be increased to \$4,000.00 when it is re-invested on 16 September, 1998. This action would increase the Endowment Fund to \$35,000.00, the current approved cap, and would generate approximately \$100.00 of additional investment income in subsequent years.

The above actions will only partially make up for the approximately \$700.00 of lost investment income projected for the 2000/2001 fiscal year. The Society, therefore, will need to reduce expenses in future years in order not to have high deficits.

In 1996-97 fiscal year, \$2,161.38 of investment income was generated from a principal amount of \$30,003.96. An additional \$20.41 of interest was earned from our chequing-savings account.

GUARANTEED INVESTMENT CERTIFICATES WITH ROYAL TRUST

Cert. No.	Amount (\$)	Interest Rate (%)	Maturity Date	Annual Interest (\$)
25723412	6,000.00	3.000	Dec. 19, 1997	180.00
25723434	3,000.00	7.500	Oct. 31, 1997	225.00
25723148	3,024.33	8.000	Dec. 15, 1997	241.95
25723379	1,775.67	7.500	Jan. 26, 1998	133.18
25723368	2,003.96	6.375	Sept. 16, 1998	127.75
25723324	3,000.00	5.250	Dec. 11, 1998	157.50
25723170	2,000.00	7.250	Apr. 5, 1999	145.00
25723236	9,200.00	8.000	Nov. 12, 1999	736.00
25703249	3,000.00	5.250	Feb. 26, 2002	157.50
TOTAL	33,003.96			2,103.88

30 October, 1997  
George H. Gerber, Chair  
Marjorie Smith  
Ian Wise

**Appendix G: Report of the Finance Committee**

The Finance Committee met on 27 January, 1997 to review the annual budget and to assess the financial health of the Society. In light of the fact that the interest from the Endowment Fund may decrease to as low as \$1,500.00 by the 2,000/2001 fiscal year, the Finance Committee felt that it is essential to reduce expenses considerably over the next few years. The Finance committee recommended: (1) that the Annual General Meeting no longer have a deficit; (2) that Life Membership Dues be increased to \$500.00; and (3) that the costs of publishing the Proceedings be reduced considerably. The Finance committee notes that the 1997 Annual Meeting Committee has submitted a balanced budget for the 1997 Annual Meeting and that the costs for publishing 1996 Proceedings have been reduced by almost 50%. Similar cost cutting measures are needed in future years.

The Finance Committee met on 30 October, 1997, reviewed the audited financial statements for 1996/1997 and along with the Treasurer prepared the budgets for 1997/1998 and for 1998/1999. The financial statement for 1996/1997 indicated that revenue exceeded expenses by \$4,002.00. Because of accumulated surpluses from previous years, a G.I.C. in the amount of \$3,000.00 was purchased, thus increasing the Endowment Fund by \$3,000.00 and decreasing cash-on-hand by \$3,000.00. Also, no Proceedings were published in 1996/1997.

No committees submitted budgets for 1997/1998. Thus, it was difficult to prepare a budget for the Society for 1997/1998. The Finance committee examined the expenses and revenues for 1996/1997 and then used these as the basis for the projections for the next two fiscal years (see attached).

30 October, 1997  
George H. Gerber, Chair  
Marjorie Smith  
Ian Wise

**ENTOMOLOGICAL SOCIETY OF MANITOBA**

<b>BUDGET ITEMS</b>	1996-97	1997-98	1998-99
30 Oct. 1997	Actual	Actual & Projected	Projected
Endowment Fund	\$33,004.00	\$33,004.00	\$33,004.00
<b>REVENUE</b>			
Membership Dues	\$2,159.52	\$2,100.00	\$2,100.00
Proceedings	471.30	450.00	450.00
Social Committee	82.00	0.00	0.00
Youth/Education Committee	200.00	200.00	200.00
Fundraising Committee	867.00	100.00	100.00
Student Awards and Scholarship	100.00	100.00	100.00
Meetings: Annual General Meeting	1,944.25	1,732.00	1,700.00
Donations	900.00	400.00	400.00
Investment Income	2,216.22	2,100.00	2,000.00
Miscellaneous: GST Rebate	126.17	111.00	110.00
Other Committees	0.00	0.00	0.00
<b>TOTALS</b>	<b>\$9,066.46</b>	<b>\$7,293.00</b>	<b>\$7,160.00</b>
<b>EXPENSES</b>			
General Society Expenses	\$802.50	\$1,000.00	\$1,000.00
Proceedings	0.00	1,550.00	850.00
Newsletter	203.50	600.00	450.00
Social Committee	164.45	300.00	300.00
Youth/Education	62.45	220.00	200.00
Fundraising Committee	633.84 <sup>1</sup>	50.00	50.00
Student Awards and Scholarships	1,439.93 <sup>2</sup>	1,350.00	1,350.00
Meetings: ESM AGM	1,757.38	2,100.00	2,100.00
Other Committees: Membership	0.00	50.00	50.00
Representation at ESC	0.00	350.00	350.00
<b>TOTALS</b>	<b>\$5,064.05</b>	<b>\$7,570.00</b>	<b>\$6,700.00</b>
Net Gain (Loss), year ending Aug. 31	\$4,002.41 <sup>3</sup>	(\$277.00)	\$460.00

NOTES:

<sup>1</sup>Cost of sweatshirts printed for ESM and Dept. of Ent. Anniversary

<sup>2</sup>Includes student book award of \$150.00 for 1995-96 not previously reimbursed.

<sup>3</sup>Includes \$3,000.00 transferred to a Canadian T-Bill Fund on 26 Feb., 1997.

## **Appendix H: Report of the Newsletter and Publicity Committee**

The ESM Newsletter Committee has published 3 issues of the Society newsletter in 1997 (Vol. 24, 1-3) and will be publishing the forth issue in December. The newsletter has gone through some changes over the last year, such as posting the newsletter on the World Wide Web, booklet style format, and new cover page. Brent Elliott is responsible for putting the newsletter on the internet and deserves all the credit for that endeavor. For the most part, the newsletter committee has worked together as a team to put out what I hope is considered to be a dam good newsletter. Although I am stepping down as a chair, I plan to remain active in the association and active in the newsletter by contributing articles on a regular basis.

Rhéal Lafrenière, Chair

Jason Diehl

Brent Elliott

## **Appendix I: Report of the Social Committee**

The New Members' Social was held at the Valour Road Curling Club on March 16, 1997. The event was attended by 16 people, including one new member, Dan O'Brian. The evening consisted of a bonspiel in which teams composed of one experienced curler and 3 inexperienced curlers competed! The bonspiel was followed by beer, pizza and prizes. Some people had never heard of curling before, others had heard of it but never done it, and still others had done it but never taught it before...so it proved to be a fun learning experience for all!

The banquet for the Annual General Meeting was held on Nov. 7<sup>th</sup>, 1997 at the Western Canada Aviation Museum in Winnipeg. The banquet was attended by 47 people. The dinner was catered by "Aprons for Hire" and was eaten on the "Flight Deck" of the aviation museum which provided a great view of incoming and outgoing planes from the Winnipeg International Airport. Before dinner the banquet attendees had access to the "Skyways" display and after dinner were taken on a guided tour of the museum. A great time was had by all!

Social Committee Expenses (November 1996 – November 1997)

1997 New Members Social:	\$76.17
1997 AGM Sat. am coffee break (donuts):	\$22.00
Photocopying/Mailings etc.	\$ 0.00
Total Expenses:	\$98.17

Deirdre Zebrowski, Chair

**Appendix J: Report of the ESM Youth Encouragement and Public Awareness Committee**

**Mandate:** The aim of this committee is to provide a means by which information about insects and the entomological profession are made available to the public. Often, this vehicle is in the form of school visits, whereby presentations of insect displays and/or slide shows are made. On occasion, members of the public will request a tour of the J. B. Wallis Museum of Entomology, located at the University of Manitoba. There is a clear need for this type of public service, judging by the level of enthusiasm that I, and others, encounter when presenting to young children.

**Presentations:** Having only recently taken over this position from the previous Youth Encouragement Committee member, I am not able to provide specific details regarding the number of presentations made in 1997. However, I estimate that more than 20 presentations were made between several other volunteers and myself in 1997.

**Expenses:** I was not aware of what expenses were incurred by the former member of this committee during 1997

D. C. Henne, Chair.

**Appendix K: Report of the Common Names Committee**

There have been no applications from ESM members during the past year for new common names, nor has there been any requests for changes in old common names, and therefore there are no local activities to report. Members should be aware that there is a list of the "Common names of Insects in Canada" prepared by E.M. Belton & D.C. Eidt. This list is available on diskette from the Entomological Society of Canada. It has been updated and a revised version is now available as a supplement to update the previous version.

R. E. Roughley, Chair

**Report of the Archivist**

The archival materials of the Entomological Society of Manitoba are held in Room 213 of the Animal Sciences and Entomology Building, Department of Entomology, University of Manitoba. The copies of the ESM Newsletter and a copy of the Proceedings are added to the Archives subsequent to their publication. Any donation of any other material for the Archives will be considered at any time.

R. E. Roughley, Chair

**Appendix L: Report of the ESM Student Awards Committee**

The Committee reviewed the nominations received for the Student Achievement Award and the SWAT Student Award. Heather White was selected as the recipient of the

Student Achievement Award. Lydia Stepanovic was selected to receive the SWAT Student Award.

I proposed that guidelines for the Student Achievement Award be reviewed and amended so that problems in interpretation can be avoided.

W. J. Galloway, Chair  
J. Conroy  
J. Hare  
S. Pernal

### **Appendix M: Report of the ESM Scholarship Committee**

The Entomological Society of Manitoba Scholarship Committee discussed three applications for the ESM postgraduate award.

The ESM Scholarship committee agreed that all three candidates were highly qualified to receive the award, but unanimously recommends that the ESM postgraduate award be made to Mr. Samuel M. Migui, Department of Entomology, University of Manitoba.

Mr. Migui is currently working on his Ph. D. degree under the supervision of Dr. Robert Lamb, adjunct professor in the Department of Entomology at U. of M. and Research Scientist at the Winnipeg Research Centre of Agriculture and Agri Food Canada where Mr. Migui is carrying out his research. His thesis topic is "Susceptibility of spring wheats and related plants to cereal aphids."

P. MacKay, Chair  
D. Dixon  
D. Rosenberg

### **Appendix N: Report of the Scientific Programme Committee**

The Annual Meeting was held on Nov 7-8 at the Freshwater Institute. There were 5 invited speakers and 13 submitted papers. Abstracts are listed elsewhere in the proceedings. As every year it is difficult to table a definitive budget at the annual general business meeting as it is soon after the meeting. However, we expect to have a balanced budget, in large part due to many sponsors that have contributed \$750 to this year's meeting.

This year's meeting committee members were Terry Galloway, Stacy Stiege, Dave Rosenberg, Ian Wise, Joel Gosselin (Chair, Fund Raising Committee), D. Zebrowski (Chair, Social Committee).

I would like to thank the other people that made this year's meeting a success, serving as program chairs, student competition judges and at the registration desk.

Paul Fields, Chair

**Appendix O: Report of the Fundraising Committee**

Donations in the amount of \$900.00 were received for the Annual General Meeting. The sale of T-Shirts provided sales of \$867.00, with costs of \$633.84, providing a net revenue of \$233.16.

Joel Gosselin, Chair.

**Appendix P: Report of the Honourary Members Committee**

The Honourary Members Committee is responsible for receiving nominations for individuals to qualify for Honourary Member status in the society. In order to obtain Honourary Member status, each nominee must be approved by the membership through a secret ballot. Currently the Society has seven honourary members. The number of openings for the status of honourary membership is limited to 10% of the active members of the Society.

At the last Annual General Meeting I reported that one nomination had been received by the committee at the time of the October of 1996 deadline. I am pleased to announce that Dr. Reinhart Brust was approved by the membership and has been given Honourary Membership status. No nominations were received this year.

R. W. Currie, Chair.

**Appendix Q: Report of the Membership Committee**

Total membership in the Society stands at 106 members. As of the end of the 1997 fiscal year. There are 75 regular members, 19 student members, 7 honourary members and 5 lifetime members. Thirteen individuals failed to renew their memberships in 1997. New membership consisted of 9 regular members (of which 3 were delinquent renewals) and 4 student members. This year's membership differs little from last year, but is considerably below the levels of 5-6 years ago and earlier. The Society's slowly declining membership is likely a reflectin of the diminishing number of entomological professionals employed in the province and fewer numbers of students enrolled in related programs.

Membership application forms were distributed to potential new members, and an effort was made to obtain membership from undergraduate and graduate students. I would like to recognize the efforts of T. Galloway, ESM President, for his relentless efforts to encourage new membership in the Society. Thanks is also due to M. Smith, ESM Treasurer, for compiling membership statistics.

S. Pernal, Chair.

## Notice to Contributors

Research papers in the *Proceedings of the Entomological Society of Manitoba* are fully refereed. The *Proceedings* are published once a year and manuscripts are welcome any time. The research papers section of the *Proceedings* is primarily intended to highlight entomological research of local (Manitoba) or regional (prairie provinces) interest. The following guidelines should be followed in writing and preparation of manuscripts. Guidelines are adapted from *The Proceedings of the Entomological Society of Ontario*, Volume 117, 1986.

**General.** Articles are normally in English and should not be offered for prior or simultaneous publication elsewhere. The Editor should be informed if manuscripts have been refused elsewhere. Authors need not be members of the Entomology Society of Manitoba to submit articles.

**Text.** Articles should be typed, double spaced and on one side of the paper. Margins be 25 mm on all sides. One original and two copies of text should be submitted to the Editor. Spelling should conform to usage recommended in either the Oxford or Webster's New International dictionary. Except in tables, figures, or quotations, dates should be written in the form of 15 July, 1992, etc. Reference to illustrations should be in the form 'Figure 2' or 'Fig. 2', and references to tables should be in the form 'Table 2', etc. Citation references in the text should be in the form 'Wilson (1992) stated', '(Smith 1990)', '(Brown 1985, 1990a,b)' or '(Wilson and Brown 1984; Smith 1990)' in chronological order for multiple citations within one set of parentheses. Footnotes should be kept to a minimum and typed at the bottom of the page to which they apply. Abbreviations should be kept to a minimum and only those that are generally recognized, or defined within the text for the sake of brevity, should be used. Units of measurement should be metric and abbreviated according to the Canadian national standards.

**Manuscript Submission and Review.** Typed manuscripts must be submitted for review purposes. After final acceptance all manuscripts should be submitted in both typed form and on floppy disk. The name(s) of the file(s) on the disk, name of the word processing language, and the type of computer used must also be included. All manuscripts are reviewed by at least two reviewers. The Editor selects those reviewers and does not disclose their names. The Editor decides to accept, reject or return for revision, manuscripts after reviewer evaluation

**Abstract.** Articles greater than two typewritten pages, except scientific notes, must be preceded by a brief but informative abstract.



**Acknowledgements.** Acknowledgements should be short and placed in a paragraph at the end of the text.

**References.** All references should be listed alphabetical order of authors at the end of the article. References not directly consulted by the author should be preceded by an asterisk. The full title for each reference must be given, plus pagination for all items, including books. The names of serials and periodicals should be written out in full.

**Layout.** The general layout of articles should follow the format for those appearing in recent Volumes (e.g. use of italics, use of bolding and capitals for wording etc.). Tables and figures should also follow the format for those articles appearing in recent Volumes. Two copies of each illustration for each reviewer should be submitted. Captions should be numbered consecutively and must be attached to each illustration.

**Publication.** There are no page charges for publication of articles in the *Proceedings of the Entomological Society of Manitoba*. Charges are applicable to article reprints on a cost recovery basis



## **Acknowledgements**

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## **Entomological Society of Manitoba**

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 contact:

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