

H. Frost

PROCEEDINGS OF THE

ENTOMOLOGICAL
SOCIETY OF
MANITOBA

VOLUME 44

1988

Proceedings of the
Entomological Society of

Manitoba.

VOLUME 44.

1988.

Ingolf S. Askevold

Editor

Winnipeg, Manitoba.

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**Minutes of the 44th Annual Business Meeting
of the Entomological Society of Manitoba**

13:30 h, 4 November, 1988
Freshwater Institute
Winnipeg, Manitoba

The President, Dr. N.J. Holliday, presided. A quorum being present, the President called the meeting to order and asked the Secretary of the Society, Dr. N.D.G. White, to take minutes of the meeting.

Attendance:

Executive: Dr. N.J. Holliday, President
Dr. P.A. MacKay, Past-President
Mr. D. Dixon, President-Elect

Executive Staff: Mr. I. Askevold, Editor of the Proceedings
Dr. G. Gerber, Treasurer
Dr. N.D.G. White, Secretary

Members:

A.G. Robinson	G. Galka
W. Preston	W. Khumalo
K. McGinnis	D.S. Smith
R.J. Lamb	B. Fingler
W.J. Turnock	G. Bracken
G. Wylie	M. Smith
S.C. Jay	J. Guthrie
S.R. Loschiavo	R. Brust
T.D. Galloway	M. Galloway
I. Wise	R. Gadawski
P. Arntfield	R. Currie

Guests: Dr. P. Riegert, representing the Entomological Society of Canada, and Mr. L. Harris an invited speaker from the scientific program and member of the Entomological Society of Saskatchewan.

1. Agenda (Appendix A)

Motion: Gerber/Guthrie -that the proposed agenda
be adopted.

Carried

2. Minutes of the 43rd Annual Meeting

Motion: Guthrie/T. Galloway - that the minutes of the 43rd Annual Meeting of the Entomological Society of Manitoba Incorporated, held on 6 November, 1987, and published in the Proceedings of the Entomological Society of Manitoba (Vol. 43, 1987), be adopted.

Carried

3. Business Arising from the Minutes of the 43rd Annual Meeting

a) A commemorative award was given to W. Askew, former Treasurer of the Society, by members of the Executive, in the spring of 1988.

b) A polite but non-committal reply from the Mayor of Winnipeg was received in response to a letter forwarded by the President of the E.S.M. concerning the need for scientific study before and during publically funded biological control programs.

4. Executive Reports

a) President (Appendix B).

b) Treasurer (Appendix C - Audited financial Statement). D. Smith questioned whether financial receipts should be mailed with postal metering from Agriculture Canada. G. Gerber indicated this was done on a limited basis which was acceptable to the Station administration but agreed to use Society funds for future mailing.

c) Editor - Proceeding of the E.S.M. (Appendix D).

d) Regional Director to E.S.C. (Appendix E).

e) Endowment Fund Board (Appendix F).

Motion: Gadawski/Gerber - that the upper limit on Endowment Fund investments be raised to \$30,000.

Carried

R. Gadawski indicated the fund will be increased gradually as money becomes available.

Motion: Turnock/T. Galloway - that the Executive reports be received.

Carried

5. Committee Reports.

a) Finance Committee (Appendix G).

It was noted that the Heritage Committee will spend about \$2700 in 1988-89 for Profiles of Entomologists in Manitoba. Another \$300 is to be received from the Heritage Foundation of Manitoba. (Matching funds of about \$3000 should be available from the Entomological Society of Canada for publication of the Profiles).

b) Newsletter and Publicity (Appendix H).

c) Social Committee and local Arrangements for the Annual Meeting (Appendix I).

d) Youth Encouragement and Public Education (Appendix J).

e) ESC Common Names (Appendix K).

f) Archivist (Appendix L).

g) Manitoba Environmental Council (Appendix M).

h) ESM-ESC Honorary Members (Appendix N).

The members of the Society applauded the announcement that Sam Loschiavo was elected an honorary member of the Entomological Society of Canada.

i) Student Achievement Award (Appendix O).

Dave Curry received the ESM Student Achievement Award.
Andrew Fox received the SWAT Student Award.

j) ESM Scholarship Committee (Appendix P).

D.J. Lactin received the ESM scholarship.

k) Scientific Program (Appendix Q).

There were 64 registrants at the Annual Meeting. The winner of the Student Competition was P. McElligott.

Dr. R.L. Metcalf, the principal invited speaker, expressed his thanks to members of the Society through R. Westwood for hospitality extended to him during his stay in Winnipeg.

R. Westwood noted the Administration of the Freshwater Institute indicated that in the future: a) any registrants planning to have lunch in the cafeteria must inform cafeteria staff; b) no parking will be allowed for ESM registrants on FWI property.

These limitations will be added to the Scientific Program check-list for future planning.

The Society members present at the Business Meeting applauded the Scientific Program Committee and Local Organizing Committee for preparing an excellent meeting.

l) Membership Committee (Appendix R).

Motion T. Galloway/Brust - that the Committee reports be received.

Carried

6. Election Results for 1989 Executive.

A.G. Robinson reported for the scrutineer committee (M. Henderson-Smith, D. Holder, A.G. Robinson)

President-Elect:	R. Lamb
Member-at-Large:	B. Fingler
Regional Director to ESC:	M. Galloway

J. Guthrie, S. Loschiavo and G. Wylie were elected as Honorary Members of the Entomological Society of Manitoba.

N. Holliday proposed that an appropriate scroll to recognize Honorary Members be prepared. He will raise the matter at the next Executive meeting.

The Executive and the Society thank all participants in the election for allowing their names to stand for office. The interest of all participants is appreciated.

Motion: Robinson/Lamb - that the ballots be destroyed.

Carried

7. Transfer of Office

N. Holliday presented the gavel to D. Dixon, who assumed the office of President.

8. Other Business.

D. Dixon thanked the outgoing Executive for their contributions to the Society.

a) Profiles of Entomologists Update.

N. Holliday reported that the biographies are almost complete. The booklet should be published by next October. The Heritage Foundation of Manitoba wants the ESM to attempt to get international circulation for the publication, therefore we will advertise the "Profiles" availability in the entomology bulletings of several societies.

b) French Translation of Acts of Incorporation.

This issue does not apply to the E.S.M. which was incorporated under the Incorporation Act, which will be translated, as needed, by the provincial government.

c) Appointment of Auditors.

Motion: Gerber/Holliday - that D. Nicholson and Co. be appointed as auditors for the Society in the coming year.

Carried

9. Adjournment Holliday (14:30 h).

APPENDIX A
ENTOMOLOGICAL SOCIETY OF MANITOBA
44TH Annual Business Meeting
November 4, 1988

AGENDA

1. Appointment of Secretary to record proceedings of the annual business meeting.
2. Acceptance of Agenda.
3. Minutes of last annual meeting (Nov. 16, 1987).
4. Business arising from the minutes.
5. Reports - Executive, Trustees.

a) President	N. Holliday
b) Treasurer (Auditor)	G. Gerber
c) Editor of the Proceedings	I. Askevold
d) Regional Director to ESC	J.C. Conroy
e) Endowment Fund Board	R. Gadawski
6. Reports - Committees.

a) Finance Committee	R. Gadawski
b) Publicity, Newsletter	M. Smith
c) Social	M. Galloway
d) Education & Youth Encouragement	K. McGinnis
e) E.S.C. Insect Common Names	A.G. Robinson
f) Archivist	A.G. Robinson
g) Manitoba Environmental Council	M. Trottier
h) Honorary Members (ESC)	W. Turnock
i) Student Achievement Award (ESM)	R. Lamb
j) ESC Scholarship Committee	G. Bracken
k) ESM Scholarship Committee	G. Bracken
l) Scientific Program and Annual Meeting Local Arrangements	R. Westwood, M. Galloway
m) Membership Committee (ESM & ESC)	T.D. Galloway
7. 1988-1989 Election Results -
Scrutineer Committee, A.G. Robinson
8. Transfer of office

9. Other business

- a) "Profile of Entomologists in Manitoba" update - M. Holliday
- b) Information on French translation of ESM Incorporation documents - D. Dixon, N. Holliday

10. Adjournment.

APPENDIX B.
PRESIDENT'S REPORT

The Society has had another successful year, thanks to the service of a large number of individuals.

Our treasurer, George Gerber, and the finance committee, have kept us financially stable, and with their prompting and assistance the Executive has enacted some changes in the financial affairs of the Society. The first change is in the way the Society's committee budgets are prepared. In the past, each committee chairperson, whether experienced in the role or otherwise, was required to prepare a budget, which was then examined in turn by the Finance Committee and the Executive; this process took several months and meant that the Society operated in an ad hoc manner for a large portion of the year. In the new system the Finance Committee, which has access to the patterns of spending of committees in years past, prepare a budget for each committee, and then seeks the comments on the budget of the committee chairperson concerned. This approach is intended to streamline the process but enable committee chairpersons the freedom to propose new initiatives with financial implications. A second development on the financial front is the establishment of a fund-raising committee which has been charged with the responsibility of raising money for the Society.

The Society ventured briefly into the public arena in the spring of this year, when I wrote to the Mayor of Winnipeg urging that any large scale attempts at biological control of cankerworms in Winnipeg be done only after research to determine whether there was any possibility of success, and that any operational biological control efforts be accompanied by a rigorous scientifically-based assessment of effectiveness.

Most other activities of the Society will be covered by the following reports. I would like to take this opportunity to recognize the efforts of a number of people who have made my job easier, or have enhanced the activities of the Society. Principal among the former group is the Society's secretary, Noel White. He has handled both the routine business of the Society, and the vagaries of the President, with great efficiency. George Gerber has kept me on my toes on financial matters, and this has been a great benefit to the Society. Mary Galloway and the Social Committee have put in a splendid effort to organize lunch meetings and a new members night with interesting speakers and appropriate refreshments. Ingolf Askevold has been an excellent editor of the Proceedings. Not only is the publication on schedule and the bookkeeping in order, but many of our previously recalcitrant subscriber institutions have been

induced to pay up. The names of many other individuals who have worked on the Society's behalf will be found in the ensuing reports; I thank them all. There are many others who have contributed to the Society in various ways, and whose efforts, though unsung, are not unappreciated.

I found, during my tenure as President, that it was remarkably easy to get people to work for the Society. That, I believe, is a mark of a strong society. This does not mean, of course, that there are no vacancies for those who would like to help, but have not been approached. I am sure Don Dixon, the incoming President, will be delighted to hear from anyone who would like to help. The time draws near for me to pass the gavel to Don, and take up the position to which many Presidents aspire, that of ex-President. I wish Don well in his year of office.

N.J. Holliday
President, 1987-88.

APPENDIX C.

ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
FINANCIAL STATEMENTS
AUGUST 31, 1988

AUDITOR'S REPORT

To the Directors of the
Entomological Society of Manitoba Inc.

I have examined the balance sheet of the Entomological Society of Manitoba Inc. as at August 31, 1988 and the statement of income 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 considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the company as at August 31, 1988 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles apply on a basis consistent with that of the preceding year.

Winnipeg, Canada
September 29 1989

Doug Nicholson & Co.,
Certified General Accountant

ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
BALANCE SHEET
AUGUST 31, 1988

	<u>ASSETS</u>	
	1988	1987
Cash advances (note 2)	\$ 550	550
Cash in bank (note 3)	7,287	8,448
Investments (note 4)	<u>25,000</u>	<u>23,224</u>
	<u>\$32,837</u>	<u>\$32,222</u>
	 <u>LIABILITIES</u>	
	nil	nil
	 <u>SURPLUS</u>	
Surplus	<u>\$32,837</u>	<u>\$32,222</u>

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

ENTOMOLOGICAL SOCIETY OF MANITOBA INC.
STATEMENT OF INCOME AND EXPENSES
YEAR ENDED 31 AUGUST, 1988

	1988	1987
REVENUE (note 1)		
Annual meetings	\$ 2,233	\$ 2,249
Committees	---	3,661
Foreign exchange	---	58
Interest income	2,797	2,843
Members fees	1,625	1,521
Social committee	169	---
Subscriptions	940	279
Youth encouragement & public education committee	206	--
Student awards	<u>100</u>	<u>--</u>
	<u>8,070</u>	<u>10,611</u>
EXPENSES (note 1)		
Heritage	41	---
Awards & scholarship	1,236	---
Bank charges	---	51
Committee expenses	---	1,723
Meetings	2,174	---
Miscellaneous	782	106
Newsletter	409	---
Postage	---	613
Proceedings	2,224	---
Printing	---	1,150
Social committee	523	---
Stationery	---	89
Youth encouragement	<u>66</u>	<u>--</u>
	<u>7,455</u>	<u>3,732</u>
EXCESS OF INCOME OVER EXPENSES	615	6,879
SURPLUS, BEGINNING OF THE YEAR	<u>32,222</u>	<u>25,343</u>
SURPLUS, END OF THE YEAR	\$ <u>32,837</u>	\$ <u>32,222</u>

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

ENTOMOLOGICAL SOCIETY OF MANITOBA
NOTES TO THE FINANCIAL STATEMENTS
AUGUST 31, 1988

Note 1: SIGNIFICANT ACCOUNTING POLICIES:

Income and expenses are recorded on the cash basis of accounting. There are no accruals of receivables or payables. Fixed assets are written off when acquired and therefore there are no annual depreciation allowances.

Note 2: CASH ADVANCES:

Treasurer	George Gerber	\$ 25.00
Secretary	Dr. N. White	100.00
Editor	I. Askevold	25.00
Social Committee	M. Galloway	200.00
Newsletter	M.A.H. Smith	<u>200.00</u>
		\$ <u>550.00</u>

Note 3: CASH IN BANK:

Savings account	\$ 2,072.31
Current account	<u>5,214.79</u>
	\$ <u>7,287.10</u>

Note 4: INVESTMENT CERTIFICATES:

8421072	\$ 1,775.67
7053706	3,024.33
7058513	2,000.00
7058436	3,000.00
7053871	7,200.00
7053893	2,000.00
7053937	2,000.00
7053959	2,000.00
7053805	<u>2,000.00</u>
	<u>25,000.00</u>

APPENDIX D.

PROCEEDINGS OF THE
ENTOMOLOGICAL SOCIETY OF MANITOBA
1988

A large number of cancellations of subscriptions have been received in the last 2-3 years (Vols. 42 to 44):

YEAR	VOLUME #	# OF SUBSCRIBERS
1983	39	67
1984	40	60
1985	41	56
1986	42	58
1987	43	54
1988	44	(53)

As of 14 October 1988, 44 subscribers have paid for issues of Volume 43 that were sent out, leaving 9 unpaid. Six subscribers have not yet paid for Volume 42 (1986). These remain unpaid despite mailing of cancellations threats, and so these may have to be regarded as cancellations as well. Over volumes 42-43, cancellations were balanced to some extent by the recovery of a number of subscriptions that had inadvertently been deleted from the mailing list. However, an obvious decline in paying subscribers persists, and we may be down to about 40 or so by this time next year.

The statement of receipts for the year ending 31 August, 1988 states receipts for the Proceedings at \$939.74. This reflects the sale of a number of back issues and recovery of arrears (back issues including recovery of deleted subscribers from Vol. 41 and earlier). Most subscribers are now paid up, so I project receipts for 1988-89 to be about \$420 at best, in anticipation of further cancellations.

Ingolf S. Askevold
Editor.
October 14, 1988.

APPENDIX E.

REPORT OF THE REGIONAL DIRECTOR
ENTOMOLOGICAL SOCIETY OF MANITOBA
ANNUAL MEETING, November 4, 1988

1. The Board of the Entomological Society of Canada met on Saturday, (July 2), Sunday (July 3) and Friday (July 8, 1988) in the Ruth Blair Lounge, Gage Residence, University of British Columbia.

2. In response to a considerable increase in rent (some 285%) for the present head office on Carling Avenue, Ottawa, the Board decided to recommend the purchase of a house as headquarters. This was passed at the Annual General Meeting of the Entomological Society of Canada, July 6, 1988.

3. Two **Graduate Research/Travel Grants** (of up to \$2,000) were instituted. There are two basic qualifications required:

- 1: be currently enrolled as a Graduate Student, and
 - 2: be an **active** member of the Entomological Society of Canada.
- An announcement of these grants appeared in the September "Bulletin of the Entomological Society of Canada".

4. Institutional subscription rates for the Entomological Society of Canada publication series has gone up from \$85 (Canada), \$90 (United States), and \$95 (elsewhere) to \$170 (Canada), \$180 (United States), and \$190 (elsewhere).

Annual membership fees have gone from \$45 to \$100 (this includes the Canadian Entomologist, Memoirs, and the Bulletin) for **FULL** members; **STUDENT** memberships have gone from \$20 to \$40 (including the Memoirs); and page charges for the "Canadian Entomologist" have dropped to \$25. These new rates effective on January 1, 1989, were passed at the Annual General Meeting of the Entomological Society of Canada on July 6, 1988.

5. Some concerns were expressed by members of the Board about the "Bulletin of the Entomological Society of Canada" which they thought was not meeting the criteria established for it. It is the job of the regional Societies to inform the Bulletin Editor about events going on in their region (retirements, obituaries, honours awarded, changes in the Executive, meetings, and any other items of note). In our case, it would be a good idea if the Editor of the "Newsletter" were to send a copy to the Bulletin Editor.

6. A 6,000 word report on "How to Organize the Annual Meeting of the Entomological Society of Canada" was passed by the Board with a few minor changes in wording. This report (prosaically called

the Conroy Report, after its author) is to be circulated to all regional Societies - especially those preparing the upcoming Joint Annual Meetings with the Entomological Society of Canada (Acadian Entomological Society, 1989; Entomological Society of Alberta, 1990, and the Entomological Society of Quebec, 1991.

In conclusion, I have enjoyed my one term (three years) as the Regional Director.

Respectfully submitted:

John C. Conroy,
Regional Director,
Entomological Society of Manitoba.

September 30, 1988

APPENDIX F.ANNUAL REPORT OF THE ENDOWMENT FUND BOARD

The Endowment Fund was established in 1969 to help defray the cost of publishing the Manitoba Entomologist and to support, from time to time, special projects that the Society deems appropriate. The fund has since grown to a principle amount of \$25,000, and provides a foundation of money from which the Student Scholarship and the publication of the Proceedings is funded. It also provides money to promote the publication of scientific papers in the Proceedings of the E.S.M.

In this past fiscal year, the Society was able to increase the principle amount of the Fund to its \$25,000 upper limit, by investing into it an additional \$1,775. The investment income that was generated from this principle amount was \$2,796. A similar amount of investment income is projected for the 1988-89 fiscal year.

The current financial strength of the Endowment Fund will guarantee its objectives in this current fiscal year, ;therefore no increase to the principle amount is recommended in 1988-89. However, to guarantee future objectives, it is recommended that the upper limit of the Fund be increased to \$30,000.

The following is a description of the Endowment Fund investments.

GUARANTEED INVESTMENT CERTIFICATES WITH ROYAL TRUST

<u>Cert. No.</u>	<u>Amount (\$)</u>	<u>Interest Rate</u>	<u>Maturity</u>	<u>Ann. Int. (\$)</u>
705 8436	3,000.00	10.875	Dec. 1988	326.25
705 3805	2,000.00	12.375	Apr. 1989	247.50
705 3871	7,200.00	12.125	Nov. 1989	873.00
705 3893	2,000.00	10.875	Aug. 1990	217.50
705 3937	2,000.00	10.500	Oct. 1991	210.00
705 3959	2,000.00	9.250	Feb. 1992	185.00
705 3706	3,024.33	10.750	Dec. 1992	325.12
705 8513	2,000.00	10.500	June 1993	210.00
842 1072	1,775.67	10.750	Jan. 1993	190.88
<hr/>				
Total	25,000.00	11.41		2,785.25

November 3, 1988
 Rob Currie
 George Gerber
 Randy Gadawski, Chairperson

APPENDIX G.

ANNUAL REPORT OF THE FINANCE COMMITTEE

On February 22nd, the Finance Committee met to review the Society's long-term financial situation. As a result of this meeting the Finance Committee made a number of recommendations to the Executive.

The 3 changes, approved by the Executive, are:

1. A Fund-Raising Committee to co-ordinate and enhance all fund-raising activities.
2. A differential fee schedule for member and non-member registration at the AGM; and
3. The adoption of budgetary guidelines for ESM committees.

During the year the Finance Committee also had the responsibility of considering each of the committee budgets, and preparing an overall budget for the Society. In the 1987-88 fiscal year, income exceeded expenses by \$615. Also, \$1,775 was made available for investment into the endowment fund.

A projected budget for the 1988-89 fiscal year is provided below.

ENTOMOLOGICAL SOCIETY OF MANITOBA

BUDGET ITEMS	1987-88 Actual	1988-89 Actual & Projected	1989-90 Projected
Endowment Fund	25,000.00	25,000.00	27,000.00
INCOME			
Membership Dues	1,624.92	1,450.00	1,350.00
Proceedings	939.74	425.00	400.00
Social Committee	168.80	100.00	100.00
Youth/Education Committee	206.00	400.00	250.00
Fund Raising Committee	0.00	800.00	800.00
Student Awards and Scholarship Meetings	100.00	100.00	100.00
Investment Income	2,318.00	2,340.00	2,200.00
Other Committees: Heritage	2,796.64	2,900.00	2,950.00
	0.00	0.00	0.00
Totals	8,154.10	8,515.00	8,150.00
EXPENSES			
General Society Expenses	781.64	750.00	800.00
Proceedings	2,223.53	1,500.00	1,500.00
Newsletter	409.34	525.00	550.00
Social Committee	522.96	400.00	400.00
Youth/Education Committee	66.51	600.00	500.00
Fund Raising Committee	0.00	50.00	100.00
Student Awards and Scholarship Meetings	1,235.88	1,300.00	1,300.00
Other Committees: Heritage	2,257.77	2,800.00	3,000.00
	41.46	2,660.00	0.00
Totals	7,539.09	10,585.00	8,150.00
Net Gain for Year Ending August 31st	615.01	(2,070.00)	0.00

APPENDIX H

ANNUAL REPORT OF THE NEWSLETTER AND PUBLICITY COMMITTEE

I would like to thank Andy Kolach for assistance provided with the Newsletter, particularly as liaison for news from the Manitoba Department of Agriculture. Andy has agreed to work on the Newsletter Committee for 1988-89.

During 1988, three issues of Volume 15 of the Entomological Society of Manitoba Newsletter were printed and mailed to members in March, June and October. A fourth issue will be sent out in December. In 1989, the committee plans to send out four issues on approximately the same schedule. During 1988, savings in the cost of mailing Society news to Members were realized by combining mailings of the Newsletter and Bulletin in June, and of the Newsletter and ESM Annual Meeting programs in October.

A special thank you to all members who have taken the time to share news and articles for contribution to the Newsletter.

Marjorie Henderson Smith, Chairperson,
Newsletter and Publicity Committee,
Entomological Society of Manitoba
4 November, 1988.

APPENDIX I

SOCIAL COMMITTEE 1987-88
LOCAL ARRANGEMENTS COMMITTEE 1987-1988

SOCIAL COMMITTEE:

The Society held three luncheons, with guest speakers Dr. D.M. Rosenberg, Freshwater Institute (in January); Dr. R. Wrigley, Manitoba Museum of Man and Nature (in April); and Ms. D. Giberson, Department of Entomology (in September). Attendance at luncheons ranged from 25 to 32. The first luncheon was held at the Montcalm Hotel which offers an inexpensive soup-and-sandwich lunch, in the hope of encouraging students to attend. However, student attendance was no greater than usual, and subsequent lunches were held at Aalto's (Norlander Motel) because of better facilities.

The New Members' Social was held in late February, at the Tartan Room of the University of Manitoba. Mr. Robin Lindsay was awarded the Society's Student Achievement Award. Dr. Tom Shay, University of Manitoba, entertained members with a description of archeological studies in Greece. Fifty members attended, including six new members and guests.

The social activities of the Annual General Meeting include the traditional Meet-the-Speaker(s) mixer at the home of Drs. Lamb and MacKay (a good time was had by all!), and the traditional banquet at the Holiday Inn South. Ms. Sandy Coleman, of the CBC, is the guest after-dinner speaker for this year. Prior to her presentation, scholarships and awards were presented by the President of the Society.

As chair of the Social Committee, I was ably assisted by Blaine Timlick, associate Chair. I am very grateful to Society members who contributed to the Society's social activities, particularly T.D. Galloway, D. Giberson, R. Lamb, P. MacKay, and D. Rosenberg.

M.M. Galloway, Chair
Social Committee

LOCAL ARRANGEMENTS COMMITTEE:

Local arrangements of the Annual General Meeting were completed by G. Rawn, at the request of the Chair of the Program Committee. A. Wiens also assisted. I am very grateful to R. Westwood, Chair, Program Committee, T. Galloway, G. Rawn, and A. Wiens.

M.M. Galloway, Chair
Local Arrangements Committee

APPENDIX J.

YOUTH ENCOURAGEMENT AND PUBLIC EDUCATION COMMITTEE

Annual Report

This year we held two exciting events with the 'Young Entomologists'. In June we had a film night where we showed two films: one on army ants and the other on termites. This event was very well attended, about 60 people in all, including parents. In October we went collecting at La Barrière Park. Here about 30 children and their parents were introduced to the aquatic insect life of the La Salle River.

This year we also gave talks to numerous Beaver groups, cub groups and school classes and I'd especially like to thank Terry Galloway for helping with these as well as all the Young Entomologists' events.

Kathryn McGinnis
Chairperson

APPENDIX K.

REPORT OF THE COMMON NAMES COMMITTEE

There have been no applications from ESM members during the past year for new common names, or changes in old common names, and there are therefore no local activities to report.

Members of the ESM should be aware of the existence of Nomenclatura Insectorum Canadensium (1985) and a Supplementum (1986), edited by Dr. Paul Benoit, commissioned by the Quebec Society for the Protection of Plants and published by the Canadian Forestry Service, Government of Canada at the Laurentian Forest Research Centre. This valuable publication is at present the authority in Canada for common names of insects (in both French and English) presented along with their scientific names.

A.G. Robinson,
Chairperson.

APPENDIX L.

REPORT OF THE ARCHIVIST

The Archives materials of the Entomological Society of Manitoba are held in Room 213B of the Department of Entomology, University of Manitoba. Two copies of the ESM Newsletter are received at each publication, and donations of any old records are welcome.

A.G. Robinson,
Chairperson.

APPENDIX M.

REPRESENTATIVE TO THE MANITOBA ENVIRONMENTAL COUNCIL

Annual Report

It has been an eventful year for the Manitoba Environmental Council (MEC). At the time of last year's ESM Annual General Meeting, the MEC existed in a state of flux somewhere between the old entity created at the pleasure of the Minister in 1972, and the new entity expected to be established in law with the proclamation of the new Manitoba Environmental Act. The situation became more uncertain at the ides of March 1988 when the then NDP government found itself in a non-confidence situation over its budget; however, before the government was dissolved it proceeded with the proclamation of the new Manitoba Environmental Act on 31 March 1988. After the provincial election a minority government was formed by the Progressive Conservative Party and the MEC found itself with a new Minister of Environment and Workplace Safety and Health, the Hon. Ed Connery. During this year of 'renovations' the MEC was active in providing the Ministers with constructive criticisms of the new Act, with suggestions for the Regulations to the Act, and more recently in scrutinizing the workings of the new Act and promoting the existence of the Public Registry Network.

The outlook for the MEC in the following year is optimistic. The MEC is now firmly established, the membership will be refurbished with the first new members approved since the new environmental legislation was proposed two years ago, and the Minister has not refused suggestions to improve the MEC budget which had been both cut and frozen at crippling levels. The MEC

is currently examining the renewal of Forest Management Agreements with Forest Products Companies in Manitoba, herbicide use on public lands, water policy development in Manitoba, inconsistencies between the Noxious Weeds Act and the Endangered Species Act, energy policies in Manitoba, tightening up the Environmental Impact Assessment process under the new Environmental Act, and will in the near future form a committee to examine the environmental issues of genetic engineering. I would be happy to respond to any inquiries concerning the activities of the MEC, or to communicate to the MEC any environmental concerns which members of the ESM may have.

Marc R. Trottier
Agriculture Canada Res. Stn.
195 Dafoe Road
Winnipeg, Manitoba R3L 0G5

APPENDIX N.

ESC HONORARY MEMBERS

During 1988 Dr. S.R. Loschiavo was made a Honorary member of the ESC. No new nominations were made during 1988. Members of ESM are encouraged to advise the chair of suitable candidates for nominations.

W.J. Turnock, Chair

APPENDIX O.

REPORT OF THE ESM STUDENT AWARD COMMITTEE

The committee reviewed the nominations received for the Student Achievement Award and for the SWAT Student Award. The recipient of the Student Achievement Award is Mr. Dave Curry who will be presented his award at the New Members Social. The recipient of the SWAT Student Award is Mr. Andrew Fox who will be presented his award at ESM Annual Banquet.

At the request of the President, the committee prepared a revision to the guidelines of the SWAT Student Award to address the possibility that no suitable candidate will be nominated.

R.J. Lamb (Chairperson)
J. Conroy, W. Gallaway, W. Preston

APPENDIX P.**REPORT OF ESM SCHOLARSHIP COMMITTEE**

There were two applications for the 1988 ESM Scholarship. The Committee, by majority agreement, has awarded the scholarship to Mr. D.J. Lactin of the University of Manitoba.

G.K. Bracken (Chairman)
Dr. R.P. Bodnaryk
Dr. J.C. Conroy

APPENDIX Q.**E.S.M. SCIENTIFIC PROGRAM COMMITTEE**

The 1988 E.S.M. Annual Meeting was held at the Freshwater Institute on the 3-4 November. Dr. R.L. Metcalf was the invited speaker who presented a paper entitled "Applied Chemical Ecology and Integrated Pest Management: The Story of Diabrotica Beetles". The invited symposium speakers included Dr. G. Konoshita (Do innovative IPM programs need the private sector?), Mr. L. Harris (Evaluation of IPM in prairie agricultural ecosystems), Dr. N. Holliday (Innovation and the Colorado potato beetle) and Dr. Y. Prevost (Environmental architecture - planning for the spruce budworm), addressing "Innovative Applications of Integrated Pest Management". There were 9 submitted papers, 4 of which were presented by graduate students who participated in the student competition. The prize of \$100 was won by P. McElligott, an MSc student of Dr. T.D. Galloway. Displays were set up by the City of Winnipeg, Untited Agri Products and Wild Leitz. There were 64 paid attendees, of whom 12 were student members.

Social events included a Meet-the-Speaker Mixer at the home of Drs. P.A. MacKay and R.J. Lamb, and the Banquet at the Holiday Inn South. Fifty-two people attended the banquet, where Sandi Coleman was the after dinner speaker.

The Scientific Program Committee members would like to thank those members who helped in the function and organization of the meeting and especially Dr. D.M. Rosenberg at the Freshwater Institute.

A.R. Westwood (Chairman)
M.M. Galloway
T.D. Galloway
G.P. Rawn

APPENDIX R

MEMBERSHIP COMMITTEE - ANNUAL REPORT, 1988

Membership application forms were distributed to potential new members in the province, in particular to new entomology students. Lapsed members were contacted regarding payment of fees, under advisement by the Treasurer of the Society. The list of amateur entomologists in Manitoba has been maintained and is available upon request.

T.D. Galloway (Chairman;)
4 November, 1988.

ABSTRACTS OF PAPERS PRESENTED TO THE ANNUAL MEETING, 1987.

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* ABSTRACTS ARE PRINTED AS RECEIVED *
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SYMPOSIUM:
INNOVATIVE APPLICATIONS OF INTEGRATED PEST MANAGEMENT

DO INNOVATIVE IPM PROGRAMS NEED THE PRIVATE SECTOR?
G.B. Kinoshita, Cyanamid Canada, Inc., 88 McNabb Street, Markham, Ontario, L3R 6E6.

On a global basis major multinational agrochemical companies do not consider the Canadian market to be a high priority. However, Canada has and will continue to benefit from global research. In addition smaller, innovative, companies can provide the tools required for IPM programs. The impediments to IPM for the private sector in Canada are discussed. There are benefits of IPM for the private sector. These benefits as well as suggestions for incentives to IPM are listed. Companies wishing to remain in the pest control business are developing alternative screening methods. Stringent safety, environmental and commercial requirements are forcing the industry to develop novel control products.

EVALUATION OF IPM IN THE PRAIRIE AGRICULTURAL ECOSYSTEM.

J.L. Harris, Provincial Entomologist, Saskatchewan Department of Agriculture, Regina, Saskatchewan.

Integrated pest management is analyzed and evaluated, from the perspective of an extension entomologist, as it applies to the control of insect pests of the field crops grown in the Canadian prairies. The basic assumptions of the integrated approach to pest management are reviewed, and compared with what is observed in the field and highlighted when theory and practice are inconsistent. Examples are drawn from actual field situations and the logic for management decisions presented as expressed by the individual producers.

INNOVATION AND THE COLORADO POTATO BEETLE. N.J. Holliday, Department of Entomology, University of Manitoba, Winnipeg, Manitoba.

The Colorado Potato Beetle, Leptinotarsa decemlineata, is thought to have originated in Mexico. There, it fed on buffalobur, Solanum rostratum, an annual tumbleweed, and underwent dry-season diapause, but not overwintering diapause. Since its first recorded appearance as a pest of potatoes in 1859, it has spread to most major potato growing areas of the world. Its current range spans 45° latitude in North America and includes climates ranging from seasonally-arid subtropical to maritime temperate. Colorado potato beetle populations in different localities have different host plant preferences, diapause phenomena, and timing of the life cycle. Colorado potato beetle populations have exhibited resistance to almost all insecticide groups from arsenical compounds to synthetic pyrethroids. Despite these indications of adaptability of the insect, potato growers have shown extreme inflexibility in production practices and control strategies. New techniques are currently under development to combat the Colorado potato beetle, yet few of them appear likely to provide a major obstacle to innovation by the beetle. What new strategies can agricultural science, and in the potato industry, use to ensure that in the future we manage the Colorado potato beetle, rather than react to its latest innovations?

ENVIRONMENTAL ARCHITECTURE-PLANNING FOR SPRUCE BUDWORM.

Y.H. Prévost, School of Forestry, Lakehead University, Thunder Bay, Ontario P7B 5E1.

Presently spruce budworm populations in eastern North America are in the trough of their cycle. In the wake of these low populations the Ontario and Quebec governments have revised their policies in dealing with spruce budworm epidemics. The main objectives of these policies is to reduce the susceptibility and vulnerability of the forests to spruce budworm. These policy changes are the result of intensive studies by Canadian and American scientists working together under Canada-United States (CANUSA) Spruce Budworm Program. Recently a new theory has emerged on how trees and insects interact and how tree populations defend themselves collectively against herbivory. Our tree harvesting practices interfere with tree defensive strategies and render the forests more susceptible. The new theory will be examined against the background of the new provincial policies.

SUBMITTED PAPERS.

THE BEHAVIOURAL AND PHYSICAL ADAPTATIONS OF THREE INSECTS THAT FEED ON THE PHOTOTOXIC PLANT HYPERICUM PERFORATUM.

P.G. Fields, Agriculture Canada Research Station, 195 Dafoe Road, Winnipeg, Manitoba R3T 2M9 and J.T. Arnason, Biology Department, University of Ottawa, Ottawa, Ontario K1N 6N5.

Chrysolina hyperici, C. quadrigemina and Anaitis plagiata all feed on St. John's Wort (Hypericum perforatum) in spite of the phototoxin hypericin which has been shown to be toxic to other insects. Fourth instar Chrysolina larvae fed at dawn, then hid in the soil for the remainder of the day. When larvae were forced to remain in the light, mortality was positively correlated with light intensity. This susceptibility to light may be aggravated by the highly transparent larval cuticle which transmitted over 60% of the photosensitizing wavelengths (550 to 600 nm). Chrysolina adults were very different from the larvae in that they were sun loving, few on St. John's Wort during the day and basked at the tips of the branches. Adults cuticles only transmitted 0.1% of the photosensitizing wavelengths. Third instar A. plagiata larvae remained on the plant at all times, feeding both during the day and night. In the fifth instar, larvae burrowed into the soil during the day and fed mostly at night, much like late instar Chrysolina larvae. However, A. plagiata larvae suffered no ill effects if forced to remain in the light. Their resistance to

photosensitization may be explained by the low transmittance of their cuticle (20%), and may also be due to biochemical and physiological adaptations.

ATTRACTION OF MOSQUITOES TO THREE IMPORTANT SPECIES OF BIRDS IN OAK HAMMOCK MARSH, IN MANITOBA. G. Fortney and R.A. Brust, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

The present Oak Hammock Marsh Wildlife Management Area represents a remnant of what was once Manitoba's largest prairie marsh, and provides habitat for many types of fauna, including large numbers of waterfowl during the migration periods. Bird-baited mosquito traps were set out in the marsh to determine which species are attracted to birds that inhabit the marsh. Mosquitoes breeding in and around the marsh were attracted to caged mallard ducks and to caged yellow-headed black birds, the two most common avian hosts in the marsh. Caged blackbirds were more attractive to *Culex tarsalis*, the primary vector of Western Equine Encephalitis, than ducks and domestic chickens. Overall, ducks attracted 39% of the female mosquitoes (total of 16 species) while 37 and 21% were attracted to blackbirds and chickens, respectively. A significant percentage took blood meals from their bird hosts.

DEVELOPMENTS AND INNOVATIONS IN HORN FLY CONTROL IN CANADA. T.D. Galloway, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

The horn fly, *Haemotobia irritans*, is a ubiquitous, blood-sucking fly which attacks cattle. The adults require numerous blood meals each day and consequently spend most of their time closely associated with their host. They lay their eggs in fresh cattle dung, where larvae subsequently complete their development.

The horn fly has traditionally been an easy pest to control. Registered have been applied to the animal to provide satisfactory relief. Innovations have, until recently, been largely restricted to application techniques. Initially, chemicals were applied by hand, but self-treatment devices for cattle such as dust bags, oilers, face mops, and backrubbers for cattle soon became popular. Self-treatment devices were generally operated in either forced-use or free-choice surroundings. Feed-through insecticides and impregnated plastic ear tags are more recent methods of application which improved efficacy of the products. However, development of widespread resistance by horn flies to pyrethroid insecticides has led to the search for insecticides with different modes of action.

CURVILINEAR RESPONSE OF THE DEVELOPMENT RATES OF APHID CLONES AT LOW TEMPERATURES AND ESTIMATION OF A DEVELOPMENTAL THRESHOLD.

R.J. Lamb, Agriculture Canada Research Station, 195 Dafoe Road, Winnipeg, Manitoba R3T 2M9.

A linear relationship between developmental rate and rearing temperature is often used to estimate the developmental threshold and degree day requirements of insects, although the relationship is usually non-linear at temperatures near the threshold. The apparent non-linearity has been hypothesized to result because of genetic variation in developmental thresholds among insects. This hypothesis was tested for two clones of the pea aphid, Acyrtocyphon pisum (Harris). Individuals from a clone are genetically uniform and therefore show no genetic variation in their developmental thresholds. Insects of both clones were reared at a series of constant temperatures starting near the developmental threshold, and their developmental times were measured. For both clones, the response of developmental rate to temperature was non-linear at temperatures near the developmental threshold, supporting the hypothesis that the non-linearity of the relationship is an intrinsic property of the developmental response to temperature. Based on this result, a method is proposed for estimating a developmental threshold from a non-linear relationship between developmental rate and temperature.

SEASONAL POPULATION DYNAMICS OF FLEAS ASSOCIATED WITH THE RICHARDSON'S GROUND SQUIRREL (SPERMOPHILUS RICHARDSONII) IN MANITOBA. R. Lindsay, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

The objective of this study was to determine the degree of synchronization between the life history of a single host and several species of ectoparasites. Differences in flea life histories were examined by live-trapping squirrels during 1987 and 1988 at sites near Winnipeg and Morden, Manitoba. Adult squirrels emerged near the end of March at both sites and in both years. Mating occurred within 7-10 days and juvenile activity commenced near the end of May. Peak squirrel activity occurred during July for both sites and during both years. Adult emergence begins

shortly after this and all squirrels enter hibernation by late September to early October. At Morden, Opisocrostitis bruneri (Baker), Oropsylla rupestris (Jordan), Neopsylla inopina (Rothschild) and Rhadinopsylla fraterna (Baker) were present. Seasonal peaks in mean intensity and prevalence were: N. inopina during May, O. rupestris during mid-July, O. bruneri during mid to late August and R. fraterna late August to early September during both 1987 and 1988. Near Winnipeg, only O. bruneri was present and mean intensity and prevalence peaks occurred during early August in both years. Difference in flea activity may reflect varying overwintering strategies or species differences in the time required to develop from egg to adult.

THE OCCURRENCE OF COCCINELLA SEPTEMPUNCTATA L. IN MANITOBA.

F.O. Matheson, Agriculture Canada Research Station, 195 Dafoe Road, Winnipeg, Manitoba R3T 2M9.

The Palaearctic sevenspotted ladybeetle, Coccinella septempunctata L., introduced to North America as a biological control agent against aphids, became established in Québec and New Jersey in 1973, and is now established in eastern North America. Subsequent efforts were directed toward moving the beetle into the western United States through a re-release program. C. septempunctata was spread to southern Manitoba where it was collected in the summer of 1988 from weeds, sunflowers and alfalfa. The coccinellids collected from alfalfa in 1988, in order of absolute abundance, were Hippodamia tredecimpunctata tibialis (Say), Hippodamia convergens Guérin, Hippodamia parenthesis (Say), Coccinella transversogutta richardsoni Brown, Coccinella trifasciata perplexa Mulsant and Coccinella septempunctata L.

A COMPARISON OF DIURNAL ACTIVITY PATTERNS OF TWO HORSE FLY SPECIES AT LOCATIONS IN NORTHERN AND SOUTHERN MANITOBA.

P.E.K. McElligott, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

The diurnal activity patterns of female horse flies of two species, Hybomitra affinis (Kirby) and Hybomitra frontalis (Walker), were examined at Seven Sisters, Manitoba (50°NL) and Churchill, Manitoba (58°NL). Hourly catches of both species were obtained between 0530 h and 2230 h CDT using modified Manitoba Horse Fly Traps. Temperature and light intensity data were also recorded on an hourly basis at both sites. Activity periods differed between northern and southern populations of both

species, largely as a consequence of geographic variation in diel temperature regimes. Female Hybomitra affinis were active at lower temperatures than female H. frontalis at both latitudes. Horse fly activity ceased at low light intensity levels only in southern populations. In the north, low temperatures invariably caused horse flies to be inactive before the low-light thresholds observed in southern populations were reached.

HORN FLY RESISTANCE TO PYRETHROIDS IN MANITOBA AND PROSPECTS FOR ITS MANAGEMENT. F.S. Mwangala, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

A survey was carried out to determine horn fly, Haematobia irritans (L.), resistance to pyrethroids in ear tags. Horn flies were collected from cattle and exposed for two hours to pyrethroids residues on filter papers in petri-dishes. Concentration mortality regressions were estimated using probit analysis. Resistance ratios (RR) were calculated by dividing the LC_{50} of the field strain by the LC_{50} of the susceptible laboratory strain from Kerrville, Texas.

Resistance ratios ranged from 0.04- to 50-fold in 9 herds. Flies collected from untreated herds were more susceptible to pyrethroids than the laboratory strain. Higher RR were observed in herds where there were control failures. Most strains had higher RR to fenvalerate than permethrin. Resistance was widespread in the southwestern region and scattered in other regions. At Glenlea, where horn flies were monitored throughout the season, RR increased from 2.8- to 22-fold to fenvalerate and 1.2- to 13-fold to permethrin in 1988. Flies were observed on cattle 14 days after tagging in 1988 as opposed to 70 days in 1987, and the average numbers increased thereafter from <1 to >100 flies per animal.

PHOTOPERIODIC RESPONSES OF CLONES OF THE BIRD-CHERRY OAT APHID, Rhopalosiphum padi (L.): EVIDENCE FOR SOURCES OF INFESTATION IN SOUTHERN MANITOBA CEREAL CROPS. M.A.H. Smith and P.A. MacKay, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

The bird-cherry oat aphid, Rhopalosiphum padi (L.), is a host-alternating species which overwinters locally in the egg stage on choke cherry and spends the summer on various grasses including the major cereal crops. In late summer, photoperiod and temperature decreases stimulate the return to the overwintering host, where sexual females and males produce eggs. In the southern part of

of its range, asexual females can overwinter on grasses.

R. padi can be a significant pest in some years, both by direct feeding and as a virus vector. The purpose of this study was to determine the major sources of aphids infesting southern Manitoba crops. R. padi clones were collected in the Winnipeg area from choke cherry in May, and from canary seed in June, July and August. Each sample of clones was subjected to a standard short photoperiod and low temperature, and the progeny produced were scored as to their morph. The results provide evidence that infestations early in the season originate from the more southerly regions, including areas where it overwinters in the adult stage. Local clones infest the crop later in the season, but form only a small part of the population.